Characterising and understanding the professional and organisational commitment of community pharmacists

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Abstract

Community-pharmacy is in a state of flux with a series of significant recent changes including the Community-pharmacy Contract, the reconstitution of the RPSGB and the General Pharmaceutical Council. There are also socio-cultural changes such as greater numbers of women in the profession, and an increase in pharmacists reducing their hours of work. The latter comes at a time when workload/roles are expanding and diversifying, leading to potential scenarios in which there are shortfalls between the hours worked and workload demands. This will have an impact on community-pharmacists, but its magnitude may be dependent on how they are professionally and organisationally committed. Whilst there has been some promising commitment research in the USA, little research has been published in GB. However, multidimensional models of commitment have been researched extensively in other professions.

A programme of research was developed and conducted to characterise and understand the role of professional and organisational commitment in community-pharmacy in GB using the Three-Component Model of commitment (TCM). Various methods were used to answer the research questions including focus-groups to assess qualitatively the contextual appropriateness of the constructs (stage 1.1), and cognitive-interviews to assess construct validity (stage 1.2). Stage 2 consisted of a large survey study, which examined the psychometric validity of the measurement scales as well as salient a-priori theoretical relationships found in both community pharmacy in GB and other professional contexts. A total of 32 participants were recruited for stage one and 713 community-pharmacists participated in stage two. Ethical approval was attained from the University of Manchester Ethics Committee for both stages one and two.

The research found that beyond the affective facets of professional and organisational commitment both normative and continuance facets made significant, unique and yet varied contributions to the influence of both withdrawal-behaviours and work-performance behaviours in the community pharmacy population in GB. However, the levels and strengths of the different facets of professional and organisational commitment also appeared to differ amongst the different subgroups in community pharmacists in GB. For example, independent/small-chain pharmacists exhibited significantly higher levels of affective and normative organisational commitment and significantly lower levels of organisational withdrawal behaviours compared to large-multiple pharmacists. The implications of these and other differences were highlighted and recommendations made salient to the profession and community pharmacy organisations about how the levels of the different facets of commitment may be managed to foster greater work-performance behaviours and mitigate the different withdrawal behaviours.

Declaration

No portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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List of Abbreviations

AOC	Affective-organisational commitment
APC	Affective-professional commitment
APPG	All Party Parliamentary Group
COC	Continuance-organisational commitment
CP	Community-pharmacist
CPC	Continuance-professional commitment
CPCF	Community-pharmacy contractual framework
ERB	Extra-role behaviour
ERBI	Extra-role behaviour towards the individual
ERBO	Extra-role behaviour towards the organisation
GB	Great Britain
GP	General Practitioner
GPhC	General Pharmaceutical Council
IRB	In-role behaviour
MUR	Medicines use review
NHS	National Health Service (UK)
NOC	Normative-organisational commitment
NPC	Normative-professional commitment
OWB	Organisational-withdrawal behaviour
PCO	Primary-care Organisation
PCT	Primary-care Trust
PWB	Professional-withdrawal behaviour
RHWB	Reduction-in-hours withdrawal behaviour
RPS	Royal Pharmaceutical Society
RPSGB	Royal Pharmaceutical Society of Great Britain
SWB	Sector-withdrawal behaviour
TCM	Three component model of commitment
TRA	Theory of reason action
TPB	Theory of planned behaviour
UK	United Kingdom
WB	Withdrawal behaviour
WPB	Work-performance behaviour

The Author

The author joined the School of Pharmacy and Pharmaceutical Sciences as a full-time student in September 2008. Prior to this the author had been working in mental health and also as an Honorary Researcher at the Royal Eye Hospital. However, the majority of the author's research to date has been in the occupational and organisational psychology fields. He has conducted research in the public and private sectors as well as the third sector. Topics have included job-stress, job motivation, organisational identity, perceived organisational support, the psychological contract and extra-role behaviours. Therefore, this PhD topic complimented and extended the author's prior research to date and provided an excellent opportunity to delve deeper into the closely related topic of work-related commitment. The author graduated in 2001 with a B.A. (Hons) in Psychology with English Literature from Liverpool Hope University College (validated by the University of Liverpool). The author then graduated in 2003 with an M.Sc. in Applied Psychology from the University of Manchester and in 2005 with an M.Sc. in Organisational Psychology from Manchester Business School, at The University of Manchester.

1. Introduction

Research in other professional/occupational contexts have illustrated the significant effects of work-related commitment on a large variety of key workforce outcomes including, but not restricted to person-environment fit[1], organisational identification[2]; performance[3-5]; ethical conduct[6]; in-role behaviour[7-10]; extra-role behaviour[7-10]; intention to leave/stay[9,11-15]; absenteeism[14]; actual withdrawal[14,16]; professional-withdrawal[17-19]; organisational-withdrawal[17-20]; psychological contract[5,9,21]; and job-satisfaction[18,22-27]. Importantly, many of these key workforce constructs have increasingly been examined in relation to the pharmacy workforce context[28-34]. However, very little work-related commitment research has been carried out in pharmacy in GB[32,35]. Despite the increasing evidence and use of multidimensional commitment models such as the Three-Component Model of commitment (TCM), most work-related commitment research in pharmacy has operationalised commitment as a uni-dimensional construct[26,36-43]. Unfortunately, the majority of this work-related commitment research in pharmacy has been carried out in the USA, where community-pharmacy practice can differ considerably to the practice of community-pharmacy in GB[44,45]. It is argued that there seems to be a significant gap in the work-related commitment research that has been conducted in community-pharmacy in GB. Such research would be important to discover the contextual relevance and understanding of work-related commitment in different types of community-pharmacists. This research would also be necessary to ascertain which facets of commitment are more prevalent in community-pharmacists in GB, as well as detecting which different facets of commitment are relevant to workforce behaviour outcomes (e.g. withdrawal behaviours, etc.). It is argued that this research would provide useful evidence that could contribute to the identification of constructive action that could be taken in order to improve the desired facet of commitment, thereby by reducing the prevalence of counter productive workforce behaviour such as withdrawal.

Therefore the main research questions to answer in this programme of research are:

1) Does normative-professional commitment and continuous-professional commitment add to the understanding of how withdrawal behaviours and work-performance behaviours are explained beyond affective-professional commitment in community-pharmacists in GB?

2) Does normative-organisational commitment and continuous-organisational commitment add to the understanding of how withdrawal behaviours and work-performance behaviours are explained beyond affective-organisational commitment in community-pharmacists in GB?

3) How do locum community-pharmacists differ from non-locum community-pharmacists in their professional and organisational commitments in GB? How does this affect their withdrawal behaviours and work-performance behaviours?

4) How do community-pharmacists practicing in independent pharmacies differ from non- community-pharmacists practicing in large-multiple pharmacies in their professional and organisational commitments in GB? How does this affect their withdrawal behaviours and work-performance behaviours?

The corresponding hypotheses formulated upon on these research questions and informed by literature discussed in chapters two, three and four, as well as stage 1 studies, are reported in section 4.6. The following section details the structure of the thesis and provides a summary of both the content of the individual chapters and the content of the main body of the thesis as a whole.

1.2 Thesis structure

Chapter two provides background information on the current state of community-pharmacy detailing some of the recent changes that have occurred. How this may have impacted on the role and workload of the community sector is then discussed with reference to and critique of workforce behaviour research that has been carried out in pharmacy.

Chapter three will describe and critique the concepts of commitment and the three component model (TCM) of commitment. It will also critique research that highlights the relationships between the TCM facets and those factors viewed as salient. The chapter will end with an assessment of the current work-related commitment research reported in the pharmacy profession.

Chapter four will discuss the choice of outcome measures giving justification for their use. It will also piece together the theoretical underpinning of this research by commenting on the relationships expected between the different forms and targets of the TCM, as well as an explanation of how commitment can influence behaviour. The

chapter will then go on to provide a series of aims and hypotheses based upon the literature. From this a rationale for the choice of research methodology shall be expounded.

Chapter five shall elaborate on the qualitative methodology and analysis used in stage one of this programme of research along with a description of the respondent research sample.

Chapter six reports the results of stage one of this programme of research that includes stage 1.1, which is the thematic analysis of the focus-groups and interviews carried out. The chapter shall also report the results for stage 1.2, the cognitive-interviews carried out to provide construct validity or the measures used in stage two.

Chapter seven describes the quantitative methodology and analysis used in stage two of this programme of research along with a description of the respondent sample and the reporting of the initial analyses and the testing of salient statistical assumptions.

Chapter eight reports on the quantitative construct validity of the survey scales used to measure the aforementioned constructs of interest.

Chapter nine reports the descriptive and inter-correlational analyses of the TCM and outcome variables in the full community-pharmacist population in GB. It also reports the descriptive and inter-correlational analyses of the TCM and outcome variables in the community-pharmacist population in GB when stratified by socio-demographic variables. The chapter ends with a series of regression analysis for each of the outcome variables controlled for socio-demographic variables.

Chapter ten reports on the analysis of the relationships between the various work-related commitment variables and the outcome measures mentioned earlier.

Chapter eleven brings the programme of research to a conclusion by discussing the main findings of the both stage one and stage two, before discussing their implications and providing recommendations on these findings. The chapter shall also highlight any potential limitation of the programme of research together with potential avenues for future research. The chapter ends with concluding remarks regarding the programme of research and community-pharmacy.

2. Chapter 2: Community-pharmacy

2.1. Introduction

This chapter provides the rationale for focusing on community-pharmacists in Great Britain (GB) in this research programme. The chapter provides a brief socio-demographic account of the profession of pharmacy, before going on to concentrate more narrowly upon community-pharmacy. It will illustrate that community-pharmacy is a diverse population with a number of different and often overlapping constituent subsets. From this an argument is made for focusing attention on the particular community-pharmacy subsets of locum pharmacists, non-locum pharmacists (including both employee and independent contractor pharmacists), independent/small-chain based pharmacists, and pharmacists based in large-multiples, as well as the overall community-pharmacy population.

The chapter will also provide the justification for the research programme, by identifying salient factors from the professional and peer-reviewed literature which illustrate the significance of how a community-pharmacist feels towards his/her profession and his/her workplace. The chapter will also review the relevant research literature in community-pharmacy concerning work-related behaviours which may be considered as potential outcomes of the way a community-pharmacist feels towards community-pharmacy and his/her workplace. As a whole the chapter shall provide evidence regarding the emergence of potential gaps which the present programme of research is designed to significantly reduce.

2.2. The pharmacy profession

On November 15th 2011 there were 46,310 pharmacists registered with the GphC[46], which represented a growth of approximately 5.8%, like-for-like, when compared to practicing pharmacists from 2010[46]. The percentage of female pharmacists on the register has been gradually increasing year-on-year, with women currently representing 59.4% of the total registered. However, this represents an overall fall in female pharmacists from around 29,413 in 2010[47] to 27,513 in 2011[46].

According to the 2011 GphC register analysis[46], female pharmacists were also younger on average (38.4 years) than male pharmacists (42.3 years) with 58.5% of females aged 39 years or younger, compared to 47.9% of males[46]. Indeed, 30.4% of all registered pharmacists were aged between 30 and 39 years of age inclusive[46]. In terms of ethnicity 61.3% of the 40,936 pharmacists on the register, who gave the GphC information regarding their ethnicity, were white[46], followed by Asian from the Indian subcontinent, constituting 26.9% [46]. The latter also made up 46.6% of new entrants in 2010[46,47].

According to the last full census of pharmacists in GB in 2008 which examined workforce patterns, behaviours and trends on behalf of the then RPSGB[48], there had been an increase in the number of pharmacists working part-time (i.e. 32 hours or less per week) from 31.8% in 2005 to 32.3% in 2008[48]. From 2005 to 2008 the number of male pharmacists decreased marginally in terms of part-time working, whilst female pharmacists increased marginally[48]. This said in both 2005 and 2008, female pharmacists working part-time constituted more than double the number of male pharmacists working part-time, with 42.3% of female and 18.6% of male pharmacists working part-time in 2008[48].

In the 2008 census, active registered pharmacists were thought to work in one of six sectors of pharmacy[48]. Proportionally this consisted of 71% being community-pharmacists (e.g. working in local pharmacies on the high street, retail, etc.), 21.4% practicing in hospital (e.g. based in hospital pharmacy departments), 7.2% practicing in primary-care (e.g. working for local UK National Health Service (NHS) organisations in a range of health services, etc.), 4.1% employed in industry (e.g. working on drug development in a pharmaceutical company, etc.) 2.8% employed in academia (e.g. working in teaching and research in universities, etc.) and 3.8% practicing in others (e.g. veterinary pharmacists working with animals, pharmacists with special interests in cancer, mental health, etc.)[48,49]. However, it should be noted that a tenth of all pharmacists worked in more than one sector at a time[48].

2.3.   Community-pharmacy in the pharmacy profession

As illustrated above, community-pharmacy is by far the single largest sector in pharmacy in GB. Community-pharmacists work in diverse organisational entities with increasingly more working as permanent employee pharmacists in larger multiples (54% in 2008 up from 44% in 2002), followed by independent pharmacies (30.2% in 2008 from 31% in 2002), medium-sized multiple pharmacies (12.9% in 2008), supermarket pharmacies (12.2% in 2008) and small-chain pharmacies (11.8% in 2008)[44,48] (see Appendix 1 for glossary of definitions). There has been a decrease in independent pharmacists who owned their pharmacies, from 14% of community-pharmacists in 2005 to 12.3% in 2008, with pharmacists increasingly working as employees, up from 44.3% in 2005 to 46.4% in 2008[48]. This partially reflects the increase in the number of pharmacies in the UK owned by larger multiples[50], due in part to relaxation of the rules for opening new pharmacies (i.e. control of entry regulation)[44,51]. Since the loosening of these regulations, research has shown that between 2005 and 2007 there was an increase of 397 additional community-pharmacies (4%) with more than 152 (38%) new community-pharmacies being opened by just 3 supermarkets[51]. Moreover, Lloyds Pharmacy in 2003 owned 1321 community-pharmacies[44], which had grown to 1556 by 2008[52], whilst The Co-operative Pharmacy grew from 290[44], to 700 by 2008[53]. In all, the community-pharmacy landscape had changed significantly with large-multiple pharmacies now controlling more of the community-pharmacy sector (and employing more pharmacists) then 10 years ago[44].

2.3.1   Ethnic-minority pharmacists

Despite the increasing ethnic diversity in community-pharmacy, there is little research into what minority community-pharmacists feel about their profession and workplace. Hassell and colleagues, in 1996, used mixed-method cross-sectional surveys of 469 (71% response rate) pharmacists and focus-groups in GB, in 1998 in their matched sample cohorts study with 286 ethnic-minorities responding and 550 white pharmacists (controls)[54,55]. Overall they found that the enterprise nature of community-pharmacy practice, particularly with the potential for business ownership and development as an independent, had traditionally attracted ethnic-minority pharmacists to these pharmacy

roles[54,55]. However, they were less likely to be very satisfied compared to their white counterparts[54,55]. Platt and colleagues in 1999 in GB, using crude surname analysis to select the research sample along with mixed-methods cross-sectional survey of 1047 ethnic-minority pharmacists (21% response rate) and 820 (16% response rate) control community-pharmacists and a series of focus-groups found that having relatives in the profession and localities with significant ethnic-minority populations, had historically helped to sustain these independent community-pharmacies' unique selling points[56,57]. It was also found that at least in part, a reason for this enthusiasm for community-pharmacy amongst ethnic-minority pharmacists in GB, had been the perception of greater barriers historically, in achieving access to other sectors of pharmacy[54,55,57].

However, both sets of studies represented a snapshot of the perceptions of ethnic-minority pharmacists several years before the significant changes to community-pharmacy that has taken place over the last decade[58] and thus may not necessarily reflect the contemporary perceptions of ethnic-minority pharmacists. This is salient as almost two-fifths of all registered pharmacists in GB in 2011 were from ethnic-minority backgrounds, whilst almost 70 per cent of new entrants on to the register of qualified pharmacists were from an ethnic-minority background[46]. Despite this only little recent research has touched upon ethnic-minority community-pharmacists perceptions of their profession or workplace, such as Willis and colleagues[59]. In this cross-sectional analysis of their fourth survey from a cohort of 558 (52.4%) respondents, 350 were community-pharmacists. The study, looking at career progression in pharmacy in GB, found that ethnic-minority community-pharmacists were less likely to envisage career opportunities than their white counterparts and also less likely to be committed to their careers[59]. Unfortunately, the strength of the study was limited due to the use of bespoke measures of some of the constructs such as career-commitment and the cross-sectional nature of the study. These studies taken together, whilst individually need to be read with caution, do intimate, albeit limitedly, some consistency in perception over the years, but further research is needed upon how ethnic-minority pharmacists perceive their profession and where they practice.

2.3.2   Female pharmacists

The latest census of pharmacists reported female pharmacists to be numerically dominant in community-pharmacy as they were in the pharmacy population as a whole[46,48]. This said, the recent GphC register analysis suggested that the majority of pharmacists who left the profession in the twelve months prior to 15th November 2011[46] were female. Indeed, the proportion of female pharmacists who left pharmacy below the age of 39 years old was double (36.3%) the proportion of female pharmacists who left pharmacy at retirement age (16.9%) in 2011[46]. This supported the emergence of a trend identified by researchers previously in a robust large scale cross-sectional cohort study involving a cohort of 1263 (62% response) practicing for 5 years and a cohort of 1063 (58% response) practicing for 10 years in GB in 2006[60]. However, this data was collected before the new contract was implemented (see section 2.4)[60]. A potential reason for this trend could have been due to the fact that a greater proportion of female pharmacists were aged 39 years or younger (55.9%) than the proportion of female pharmacists of retirement age (3%) in 2010[47].

Almost twice as many female community-pharmacists in GB worked part-time (with the average female community-pharmacist working 32.5 hours per week) and were more likely to reduce their hours earlier in their careers[48,60-63], than male community-pharmacists (whom on average worked 39.7 hours per week)[48,49]. Gidman and colleagues in 2009 in their qualitative study using Q-methodology involving 40 GB pharmacists purposively sampled, suggested the choice to reduce hours was related to life experiences, such as domestic responsibilities or retirement, as part-time work was considered to be, for these employee pharmacists, a primary-career choice[64,65]. A further qualitative interview study involving 59 GB pharmacists by Gidman and colleagues in 2011 found alternatively that these decisions were made as a result of irreconcilable demands between work-related pressures such as a combination of lack of appropriate staffing provision, inflexible and unsupportive management structures etc., and domestic responsibilities[64,66]. Whilst generalising is problematic from these qualitative studies, the findings appear to be consistent with those of the GB pharmacy workforce census of 2008 findings[48].

There has been a consistent finding in GB from a variety of different studies including the census surveys in 2003[61] and 2008[48], a large cross-sectional survey in 2004[50] as well as qualitative interview study[66], that female community-pharmacists were far less likely to be in management or ownership of a community-pharmacy than their male equivalents. One Q-methodology study of 40 female GB pharmacists in 2009 suggested reasons for this being that subtle discriminatory policies precluded female employee community-pharmacists with domestic/other responsibilities from pursuing such roles[64,67]. For instance, the management's requirement or applied pressure to work antisocial hours/days, multiple work places, or away from home, in order to advance their careers, were all classified as structural barriers that made some female employee community-pharmacists accept and remain in lower paid roles[64]. These findings were echoed by another qualitative study in 30 female GB pharmacists in 2007 which found that a lack of family friendly practices, such as inflexible hours and a legislative framework requiring the constant presence of the pharmacist in the pharmacy meant that female pharmacists with family responsibilities opted for less senior roles that afforded greater flexibility[67].

The majority of studies exploring gender or focusing on female community-pharmacists in GB have been rich in qualitative analysis but have been limited in how well they can be generalised to the population of female community-pharmacists in GB. Where quantitative analysis has been used this has been limited to cross-sectional surveys with the majority reporting, before changes in 2005 came into force (see section 2.4), descriptive analyses and only one employing model based analysis[50]. Despite these limitations, this section has drawn out a number of points which have consistently come across in the small number of recent and older studies; and may be argued to be influenced by how female community-pharmacists perceive their profession and their places of practice.

2.3.1. Independent Pharmacists/Contractors

The 2008 census in GB found that 13.3% of independent community-pharmacists were intending to leave the sector within two years with 12.7% indicating a high likelihood of leaving the profession altogether[48]. One reason for this may have been the poor work-life balance associated with independent pharmacists, as out of the 12.3% of

community-pharmacists that worked over 49 hours per week in 2008, almost half were independent community-pharmacists[48]. A qualitative semi-structured interview study of 29 independent pharmacy based GB pharmacists in 2010 suggested that the aforementioned dedication has often been willingly endured in independent community-pharmacy practice in order to provide cutting edge innovation, creative business and primary-care service delivery to their local communities, and thereby view themselves as integral to the sustainability and relevance of community-pharmacy in the future[68].

One reason the latter has been possible is due to the level of autonomy independent pharmacists can exercise. Even in 2004, a cross-sectional survey of 2018 GB pharmacists (56% response) found that independent pharmacists enjoyed far more professional autonomy and decision latitude then employee pharmacists in pharmacy chains, despite all types reporting to be equally professionally orientated[69]. These findings were corroborated by a large cross-sectional survey study of 1023 GB pharmacists in 2010 (51% response) which found that pharmacists in large-multiples exercised far lower levels of professional autonomy than in independents[70]. Interestingly this study also found that despite greater personal control in terms of the clinical services they provided, this was often dependent upon the resources available to them, unlike in large-multiples[70].

However, there appears to have been a perceived shift in the viability of independent practice. The aforementioned qualitative study of GB independent pharmacists in 2010 revealed they believed that recent changes to policy, legislation, and business tendering such as those associated with the community-pharmacy contract (see section 2.4) which came into force in 2005 have favoured larger multiples and therefore made independent pharmacy practice less profitable and thereby less attractive as a sustainable business[68]. Again this was corroborated by the large cross-sectional survey study of 1023 GB pharmacists in 2010[70]. This has led some independent pharmacists to sell their businesses even though pharmacy practice ownership first attracted them to pharmacy[68]. Such a behavioural trend is viewed as detrimental to patient and consumer choice as it reduces the plurality in terms of location and variety of community-pharmacy providers available from which to choose, and also damages the profession itself[68,70]. In spite of this the two studies in 2010 discussed here, represent the modest quantity of robust research in this area, after 2005. Therefore, it may be argued that

further research is needed to ascertain how independent community-pharmacists perceive their profession and workplace.

2.3.2. Locum Pharmacists

According to the 2008 census 36.9% of community-pharmacists were working as community locums[48], with the majority of them being female (52.8%)[48]. In addition, the 2008 census found that the average hours worked by locum community-pharmacists were less than other community job-roles, with almost a half of all locums working part-time[48].

They were also found to exhibit generally better levels of work-life balance then most other community job-roles[48,63].

Even though some locum community-pharmacists practiced in more than one type of community-pharmacy, the largest proportion of locum community-pharmacists still practiced in large-multiples (51.2%), which was similar in proportion to non-locums[48]. However, whilst 42.6% of locums also practiced in independent pharmacies, this was more than double the proportion of non-locum community-pharmacists that practiced in independent pharmacies (22.9%)[48]. Similarly, 23.2% of locum community-pharmacists practiced in supermarkets (compared to 5.7% of non-locums), whilst 21.7% of locum community-pharmacists practiced for medium-sized multiple community-pharmacies (compared to 7.7% of non-locums)[48]. The same pattern was also found for small-chain community-pharmacies with 19.1% of locum community-pharmacists practiced in such pharmacy types compared to only 7.6% of non-locum community-pharmacists[48].

A qualitative interview study of 34 GB locum community-pharmacists in 2003 found that there was a heterogeneity of motivations to work as locum community-pharmacists which included, reducing practice hours whilst bringing up a family and caring responsibilities[71,72]. Other motivations reported in this study included reducing practice as a precursor to retirement, maintaining a presence in community-pharmacy whilst engaging in another sector of pharmacy, maintaining a presence whilst engaging in employment in a completely different profession or work role, and even to supplement income of a permanent community-pharmacy post, etc.[71,72].

Locum pharmacists felt that the main advantages of working as a locum pharmacist was the flexibility, choice of time, work-home balance, choice of work location, reduced experience of stress, the maintenance of professional competency and a higher monetary income[72]. In addition, some locums cited the reduced paperwork-load, the lack of artificial targets and no management responsibilities[72]. Conversely the negative aspects of working as a locum pharmacist included working in poorly organised and chaotic stores; lack of support, lack of appropriate supports staff, having to use an unfamiliar IT system, lack of continuity, working from notes left in the pharmacy, lack of appropriate communication, lack of training support, lack of sick pay or holiday pay, and the completion of own tax returns[72]. However, owing to the nature of qualitative research this study would be problematic to generalise to the wider population of locum community-pharmacists.

The 2008 census[48] found that in keeping with some of the motivations for engaging in locum community-pharmacy practice mentioned above, locum community-pharmacists were far more likely to intend to leave the sector within two years (17.1%). Moreover, 21.5% of locum community-pharmacists indicated a high likelihood of leaving the profession altogether[48] when compared to community-pharmacists in other job-roles[48]. Despite the large proportion of community-pharmacists working as locums and the findings of the aforementioned 2008 GB census analysis regarding professional-withdrawal behaviours, there is very little recent research which focuses upon how locum community-pharmacists perceive their profession or where they practice, particularly since the changes to the community-pharmacy contract came to force in 2005.

2.3.3 Hours of work

Almost a third of all community-pharmacists worked part-time, with over half of these being locum community-pharmacists[48]. One reason found for this in the literature was that part-time working was perceived as more professional whilst still achieving an appropriate work-life balance[73,74]. Indeed, in a mixed-method study involving the semi-structured interviews of 33 GB pharmacists and a cross-sectional survey of 727 (74% response) GB pharmacists from two regional branches of the former RPSGB in

1999, from which 200 (31% response) worked part-time, it was found that with on-going increases in workload to be completed within the same timeframe, some employee pharmacists perceived that full-time working had a detrimental impact on their abilities to deliver a professional and safe service to their customers/patients[73,74]. A more recent large cross-sectional survey on GB pharmacists in 2004 found that part-time pharmacists were equally likely to be satisfied with their work and committed to their organisation and their profession[75]. The study also found that individuals whom worked longer hours were more likely to have higher stress levels, work-life conflict and overload. However, both these studies were conducted prior to the changes to the community-pharmacy contract being implemented, with the first study less open to being generalised to the larger population.

In the 2008 census, GB pharmacists working in the community sector reported the greatest problems in relation to work-life balance[48]. Male community-pharmacists were found to have significantly greater work-life balance issues than female community-pharmacists [48], whilst female pharmacists in the community sector had more problems associated with poor work-life balance then female pharmacists in any other sector, apart from academia[48]. Additionally, in the census in 2005, over a quarter of GB community-pharmacists overall, were actively considering the option of reducing their working hours (26.5%)[49]. It has been highlighted above that female pharmacists also are more likely to reduce their hours than male pharmacists, which could be problematic given their numerical dominance in this sector.

Since this appetite to reduce hours was documented over 5 years ago, workload (see section 2.4) and indeed the work roles have expanded and diversified (see section 2.4) [31,60,62,66,76,77], which in turn, has created a potential for a shortfall between the practice hours and workload demands, despite the relative stability in the numbers of registered pharmacists in GB [47,48,50,60,78]. Unfortunately, there is little recent research on part-time community-pharmacists. However, even back in 2004, according to a large scale cross-sectional survey of 2018 GB community-pharmacists (56% response), model-based analysis suggested that shortages in practice hours were found to be greatest in large-multiple community-pharmacies[50]. Community-pharmacists were working, on average, four extra hours per week in order to complete their duties[50]. Nonetheless, it was predicted that to meet future demand community-pharmacists would have to increase

their average hours of actual practice[50], which was found to be contrary to the intentions of around 45% of pharmacists[50] surveyed. Therefore, it is contended that how and to what extent a community-pharmacist is committed to the profession and workplace can influence how they respond behaviourally, to the levels of change within community-pharmacy[32,35,59,79].

2.4.   The Community-pharmacy contract

This section describes one such change (mentioned above) and arguably the most significant series of changes to have influenced community-pharmacy practice in the last ten years. The introduction, in the spring of 2005 of the Community-pharmacy Contractual Framework (CPCF)[80] in England, and in the spring of 2006 in Scotland[81], was designed to provide pharmacists with far more latitude, in terms of the services that they offered, than before[82]. It was thought a step change in-role paradigm from the technical dispensary to the cognitive advisory[83] as an opportunity to utilise community-pharmacists' skills and abilities[84-87] through the development of enhanced services[88]. The CPCF[80] expanded the remit of community-pharmacists by providing remunerations for a three tiered contractual structure[45, 80] consisting of Essential Services[45] (e.g. dispensing[89], health promotion, etc.), Advanced Services[45] (e.g. the Medicines Use Review) and Enhanced Services[45] (i.e. commissioned locally and reflecting the needs of the local community), which have holistically been referred to as 'pharmaceutical care'[45,81,83,90]. The CPCF requires further accreditation for pharmacists and pharmacies wanting to offer advanced services, as well as changing fundamentally the basis for remunerations away from the primary focus of dispensing[45,77,81, 85].

One qualitative interview study of 30 female GB pharmacists found that this change in CPCF spurred community-pharmacists to engage in more work focused training[62], but others felt forced into additional training. Despite this, the qualitative design precluded generalizability. A larger cross-sectional survey study of 767 GB community-pharmacists in 2007 (71% response) suggested that the CPCF had elevated the profile of community-pharmacy in primary-care, which led to higher levels of productive collaboration[77]. However, changes to the CPCF had also led to an increase in the perception of daily demands inducing stress[77]. Almost 30% were less satisfied with

their practice with only 17% more satisfied[77]. One in four respondents were more likely to withdraw from the profession whilst around 20% were less likely to withdraw from the profession[77]. However, the strength of this study was limited due to the use of non-validated measures of some of the constructs with the exception of job-satisfaction.

One reason for the dissatisfaction with the changes was the significant perception of an increase in workload[64,76]. A mixed method study involving a cross-section survey of 762 GB pharmacists (71% response) and a series of focus-groups and interviews of 40 GB pharmacists in 2007 suggested that more pharmacists had started delegating to non-pharmacists owing to daily demands and increased workload from the changes to the CPCF[76]. This had led to stress and lower job-satisfaction, and yet for the majority there had not been much change in their levels of job-satisfaction[76]. Again there were some issues relating to the measurement of some the constructs employed, along with a more descriptive level of analysis, which could impinge upon the strength of this study.

2.5.   Changes to workload and practice

As mentioned in the previous section, some community-pharmacists felt a real sense of an increased workload within the pre-existing resources, identifying it as an important factor in influencing community-pharmacists' workforce behavioural and psychological outcomes according to a review of workload in 2011[33]. However prior to the changes to the CPCF, there was a perception manifested in professional journals in GB that workload had been gradually increasing throughout the previous decade, supposedly outpacing increases in remunerations[91]. The expansion of the community-pharmacists' role by the CPCF has been argued by the aforementioned review[33] to have affected workload in two broad ways: unscheduled and yet time consuming consultations with patients, as well as the requirement to engage in further intensive training. A mixed method quantitative survey and qualitative interview/focus-group study in 2008 found that these regulations further expanded the community-pharmacy role and increased workload, through the rise in paperwork[76] and administration, and the personal assessment and approval of each new prescription by the pharmacist responsible even when assisted by pharmacy assistants[58,92]. The aforementioned review also highlighted

the increase in the performance of MURs since 2005 particularly in large-multiple pharmacies[33].

In 1998, according to work sampling studies in GB involving five trained observers making 2682 observations in five community-pharmacies, in three days, over a six week period[93], in one study and a different day each week for seven successive weeks in another study[94], dispensing accounted for the greatest share of a community-pharmacist's time (37.5%)[93]. This was followed by prescription monitoring (12%) and counselling patients (6.7%)[94], with NHS related work taking up 70% of a community-pharmacist's time and perceived professional activities accounting for less than a third of the available time[94]. More recently, according to the Health and Social Care Information Centre in GB, the volume of dispensing continued to rise, by 3.8% in the year to March 2011, and 5.1%, in terms of the increase in volume from 2001 to 2011[95]. This means that most community-pharmacists are still engaged in dispensing activities for the majority of their time[33], with a mixed method study of cross-sectional survey of 762 GB pharmacists (71% response) and a series of focus-groups of 40 GB pharmacists in 2007 suggesting that between half and three quarters of a community-pharmacist's time was taken up with dispensing, leaving only a fraction of time for counselling patients[76]. It may be argued that time became further stretched with the implementation of the Medicines (Pharmacies) (Responsible Pharmacist) Regulations 2008 which came into force on 1st October 2009[92].

Studies have also sought to assess the effect of CPD and mandatory training on workload as has been mentioned previously in relation to a qualitative study of 30 female community-pharmacists[62] in 2007. Moreover, a qualitative focus-group study of 67 GB community-pharmacists in 2009, when looking at medication safety, suggests that interruptions by patients/customers may also add to the sense of greater workloads[96]. This was also mirrored in an innovative mixed-method qualitative study using biographic and photographic data collection with 15 GB pharmacists in three community-pharmacies[97] in 2009. Another novel qualitative nominal group workshop study using 39 participants including 24 GB community-pharmacists in 2010 found the perception that issues, such as interruptions, are set to rise as the CPCF becomes further imbedded[33,98]. The study also found that organisational pressures including targets and organisational objectives which led to the performance of activities such as unnecessary

patient consultations, particularly in multiples, were also highlighted as elevating this perception[98]. These changes and varying of the role of community-pharmacists was thought to blur the clarity of being a professional community-pharmacist bringing with it role anxiety, leading some pharmacists to retreat to the relative familiarity and sanctuary of the dispensary[98].

Most of the studies in this section are qualitative in nature or cross-sectional and therefore inferences made as to the impact of workload cannot be viewed as causal nor can the qualitative data be generalised to the full population of community-pharmacists. However, the use of mixed methods and the consistency between studies on points highlighted, maybe viewed as adding weight to those trends in the GB community-pharmacist literature. This said it can be argued that how and to what extent a community-pharmacist is committed to the profession and/or the workplace can mitigate the extent that such changes influence behaviour. This is significant due to the employment of the majority of community-pharmacists in multiple pharmacies[48,49].

2.6.   Workforce perception and behaviour research in community-pharmacy

The previous sections showcased some of the salient factors borne out of the community-pharmacy literature that are said to influence community-pharmacists' work-related outcome behaviour. These work-related outcome behaviours have also been identified in other professions and occupations as being salient outcomes of work-related commitment, and are a part of work-related commitment's nomological network[26,37,38,40,99-104] (see Chapter 3), whilst some have also been known to occupy or overlap its construct domains[105-108]. These work-related outcome behaviours included concepts such as autonomy, satisfaction, stress, and turnover/withdrawal, etc. Hence, it is contended that how and to what extent a community-pharmacist is committed to the profession or workplace will influence the aforementioned outcome concepts. The following sections highlight some of this community-pharmacy related research. This said there is only limited literature in this area in GB community-pharmacists with the majority of research carried out in other countries. The relevance of such studies in other countries to the community-pharmacy context in GB may be considered to be

somewhat questionable owing to the potential differences in regulations, arrangements and practices. Therefore the focus here will be on GB based studies where practicable.

2.6.1. Autonomy, competence and empowerment

As has been touched upon in section 2.3.1 independent pharmacists are more likely to exhibit greater decision latitude than their large-multiple employed counter parts. A cross-sectional survey study of 2018 GB community-pharmacists (56% response) in 2004 found that community-pharmacists practicing in large-multiple pharmacies perceived less control over their work and perceived lower likelihood of opportunities for personal growth[69]. This was also echoed in another cross-sectional survey of 626 GB community-pharmacists (31% response) in 2003 which found independent pharmacists were more likely to perceive greater autonomy than multiple pharmacy based pharmacists and locums, whilst full-time employees were more likely to feel greater autonomy than part-time pharmacists[109-111]. However, both these studies are not recent, and provide a snapshot, albeit consistently, of practice and regulation that has been subject to change in the last few years.

Another perspective is that community-pharmacists felt less empowered to make decisions than their training and professional role would suggest. A qualitative semi-structured interview study of 23 GB community-pharmacists in 2009 found that community-pharmacists experienced a power imbalance with GPs which meant that they did not feel empowered to challenge GPs even where a GP had made prescribing mistakes[112]. One reason given for this was the subordination felt by community-pharmacists particularly when they were otherwise professionally isolated from fellow pharmacists, on a daily basis[112]. In other situations community-pharmacists appeared to absolve themselves from having to make a decision, such as in the case of emergency hormonal contraception which some community-pharmacists were not happy to sell but were willing to dispense as the decision would be the responsibility of the GP[112]. In a cross-sectional survey study of 223 GB community-pharmacists in 2008 (25% response) found that there was a significant lack of confidence in feeling prepared and competent in delivering the public health elements of the community-pharmacy contract or multidisciplinary partnerships[113]. However the extent that these two studies can be

generalised to the full GB community-pharmacist population is debatable owing to the small sample size and response rate of the latter study and the qualitative nature of the former study.

It is argued that the willingness to take decisions which draw upon professional knowledge, skills and abilities and perceive the professional authority and responsibility to perform the tasks that are required will be influenced by what extent and how a community-pharmacist is committed to the profession and the workplace.

2.6.2. Job-satisfaction

A recent review of GB based research found that different community-pharmacy constituencies such as locums, or early career pharmacists, etc. perceived the impact of workload, work-life balance and working conditions as having differential influences on wellbeing[33]. However, the review indicated that excessive workload was related to the lowering of wellbeing, although it argued that the current evidence base was far from conclusive[33]. The review highlighted some of the limitations of the currently available literature owing to unstandardised classification of measuring workload, as well as what actually constituted excessive workload[33]. It also highlighted some of the more common limitations experienced in community-pharmacy workforce related research such as, low responses, limited representativeness and the underreporting of methodological details[33].

Earlier studies of job-satisfaction illustrated a mixed picture of job-satisfaction. In a small cross-sectional survey study of 178 community-pharmacists in 2002 set in north east London GB, 45% felt unsatisfied with their professional roles with over 51% suggesting that if given the choice they would have not chosen pharmacy as a career[84]. 57% were unhappy with the lack of their influence in primary-care decisions, whilst 71% felt isolated within their primary-care environments[84]. Interestingly 36% felt optimistic about the future with 56% advocating the government priorities (CPCF) relating to pharmacy as a way of increasing satisfaction[84]. However these results need to be viewed cautiously due to the lack of information about the representativeness of the sample, which when coupled with the small sample size, response rate and lack of

information as to how satisfaction was measured could be vulnerable to bias. A large scale cross-sectional survey study in 1767 community-pharmacists (68.8% response) in the late 1990s in the Midlands GB, found in contrast that 46.1% of all pharmacists reported high levels of satisfaction, with only 11% reporting the reverse[114]. However, community-pharmacists were found to be amongst the least satisfied, as were those who were most likely to leave pharmacy altogether[114]. Nonetheless female, young and part-time pharmacists were said to be amongst the most satisfied[114]. Again these findings needed contextualising, as there was little detail reported about the psychometric properties of any of the scale used, or how the study accounted for potential bias in the interviews. The methodological limitations could explain the contradiction between the London study and the Midlands study. Alternatively, the two studies could be describing the local situation whereby, pharmacists in the Midlands are far more satisfied then pharmacists in London. About this time a pharmacy workforce review in GB in 2003 illustrated that dissatisfaction was the main reason for community-pharmacists to leave the sector[115]. It identified excessive working hours, inadequate workspaces, and pressure to work more, as causes of dissatisfaction in community-pharmacy[115], despite increases in salaries in the community sector unmatched in any other sectors[115].

More recently, a relatively robust cross-sectional survey study of 2018 GB community-pharmacists in 2004 (56% response) found that those who left pharmacy were often dissatisfied with their jobs[32]. One reason for dissatisfaction was suggested as the discrepancy between what a pharmacist expected and what the pharmacist received in reality[32]. Other causes included increasing demands, role overload and longer hours[32], which was reported to account for 64% of the variance of job-satisfaction found using regression analyses[32]. Additionally, those pharmacists that prioritised being a 'helping professional' were most satisfied, as opposed to those which prioritised 'professional autonomy' or 'work-life balance'[32]. However, the cross-sectional design, the rate of non-response and the little information, psychometric or otherwise, about the scale used to measure the construct of job-satisfaction, may be argued to potentially limit an otherwise rigorous quantitative study.

Following the CPCF, a competent mixed method cross-sectional survey study of 762 (71%) and 40 interviews of GB community-pharmacists examined its impact on

satisfaction retrospectively. It found that more than half reported little or no change to their levels of satisfaction[77]. A total of 30% felt less satisfied with their jobs since the CPCF and 17% felt more satisfied with their jobs post CPCF. Despite this 26% stated that they were more likely to leave the community sector whilst 19% were more likely to remain in the community sector[77]. Overall, there appears to be marginally more dissatisfaction reported in the sample than satisfaction[77]. A more recent cross-sectional survey study of 571 GB community-pharmacists (response 46.9%) in Northern Ireland in 2009 suggested that 57% of community-pharmacists were satisfied with their work, with only 4% reporting complete dissatisfaction with the sector[34]. This said 24% stated that they would not choose this sector as a career again whilst 23% suggested that they would not choose pharmacy again[34]. However, caution should be exercised due to the relatively low response rate and as there was no psychometric properties reported for the measurement of the modified satisfaction scale used, both of which could have distorted the findings.

The opportunities to use their professional knowledge, skills and abilities were related to higher levels of job-satisfaction as a recent qualitative semi-structured interview study of 12 newly qualified GB community pharmacists in 2008 found[31]. However, the excessiveness of workload was a cause of dissatisfaction, and the nature of the workload was also a cause[31]. The lack of role variety and the limited use of their clinical skills and knowledge, owing to pressure of the dispensary, along with attaining organisational targets, all contributed to greater levels of dissatisfaction[31]. One reason for this may be the misalignment between the ideal views of pharmacy practice promoted to pharmacy students and the reality of practice which may not always be consistent. This said the small scale and qualitative nature of the study reduced the generalizability of the study to the wider newly qualified GB community-pharmacy population.

Nonetheless, similar trends were also found in an analysis of the data from the 2008 GB pharmacy workforce census cross-sectional survey[30]. Community pharmacists, reported lower satisfaction with remuneration, opportunities to use their abilities and physical working conditions compared to hospital and primary-care[30]. The latter was particularly acute in the community sector, as was the lack of freedom (autonomy) to choose working methods[30]. Yet, pharmacists were fairly satisfied and appeared to report greater levels of satisfaction than that reported elsewhere by GPs[30]. Female

pharmacists also exhibited greater satisfaction than male pharmacists, as did white pharmacists in comparison to ethnic-minority pharmacists[30]. The desire to practice pharmacy was also found to be a predictor of satisfaction and intentions to leave[30]. The study also examined turnover and found that pharmacists who were less satisfied showed greater intentions to leave the profession, but, only a small proportion actually left the profession[30]. One reason put forward concerns the cost of leaving the profession, which is not just monetary but can include sacrificing work related friendships, place in the community and perceptions of self[30]. This cost of leaving the profession is similar to the construct continuance-professional commitment (see Chapter 3). Despite the advantageous use of census data, the study acknowledged some of its limitations, such as the use of categorical data, both independent and dependent variables (e.g. single item global job-satisfaction and intentions to leave scores) in the regression models and the problematic interpretation of pseudo R-squared values[30]. Interestingly the study found that the well validated scale it used to measure satisfaction may potentially be too insensitive to measure the seemingly multifaceted nature of satisfaction in GB pharmacy[30]. The lower levels of job-satisfaction were corroborated in a more recent study. An interesting comparison cross-sectional survey study of 571 community pharmacists and 193 hospital pharmacists of Northern Ireland in 2007 (39% response) found that community pharmacists were more dissatisfied with their jobs than hospital pharmacists. However, both types of pharmacists found patient interruption, excessive workload, and lack of staff, as sources for job dissatisfaction[34]. Again, the small sample size made the result vulnerable to potential bias.

Organisational support through organisational agents such as line managers was also found to be related to the development of job-satisfaction. A very recent qualitative interview study of 26 GB pharmacists of which 11 were working in the community in 2011, found that the wider management of community-pharmacies and the immediate hierarchical line management had a major impact on a community pharmacist's job-satisfaction, with a poor management relationship being characterised by lack of recognition and management support[28]. However the small sample size and qualitative nature of the study made generalising the findings to the wider community-pharmacy population, more problematic.

Despite these findings Job-satisfaction has also been found to be only a small predictor of withdrawal behaviours. An analyses of GB pharmacy workforce census survey data from 2002 to 2006 concluded that job-satisfaction, strength of desire to practice, job-role, etc., accounted for only limited variance of withdrawal behaviour intentions (e.g. reducing hours, changing sector, leaving the profession, etc.)[78]. Unfortunately, a longitudinal analysis was not conducted, and a number of the variables were dichotomised for the regression analysis, thereby reducing the amount of information used in the analysis. Taken together, there appears to be a broad consensus stretching over 15 years of GB based job-satisfaction research in community-pharmacy which suggests that higher job-satisfaction is associated with more clinically orientated, less intensive workloads, and greater levels of perceived support from management structures, in community-pharmacy. This is partially why community pharmacists exhibit lower levels of job-satisfaction to other sectors such as the hospital sector. However, it is also argued that the extent and how a community pharmacist is committed to the profession and the workplace may have a significant bearing on such work related behaviour outcomes as job-satisfaction.

2.6.3. Job-stress

Compared to job-satisfaction, far less research has been conducted upon job-stress in community pharmacists in GB. A recent review of 13 GB based studies concerning the effect of workload in community-pharmacy on job-stress highlighted the latter. It found that although pharmacists still spent a significant proportion of their time dispensing, changes in the job-roles and workload, were still perceived to be linked to increases in job-stress. The review also highlighted the negative effect of having to work longer hours and a problematic work-life balance. These factors were also illustrated in a robust cross-sectional survey study of 2018 GB community pharmacists back in 2004 (56% response)[32]. This study found a worryingly disproportionate number of pharmacists exhibited high levels of stress beyond that found in the working population[32]. This was associated with long hours, excessive workload, work-life imbalance and unmet expectations of professional practice[32]. This was also accentuated where the pharmacists perceived the job-role to be that of a helping professional[32].

As the aforementioned review related, regarding the impact of the CPCF, the amount of time community pharmacists spent upon administrative duties appeared to be a source of stress. This was mirrored by a mixed method study involving a cross-section survey of 762 GB pharmacists (71% response) and a series of focus-groups and interviews of 40 GB pharmacists in 2007. It found elevated levels of stress, particularly in relation to the increase in paperwork, administration and overall workload[76]. However, caution must be exercised as there was no indication on the way job-stress was measured. They acknowledge that their findings were tentative owing to the fact that they have no baseline comparison[76]. Another perceived impact of the CPCF on stress related to the increasing demand from the public of community pharmacists time. A qualitative interview study of 17 community pharmacists from Northern Ireland identified four issues, which were salient to job related stress, they were, an increasingly demanding public, workplace issues, extension of the professional role, and recognition of responsibility[116]. Another issue of stress was how expanded services would be delivered within the pre-existing budget constraints[116]. Again the small sample size and qualitative nature of the study made generalising to the wider community-pharmacy population problematic.

These results were mirrored in a subsequent comparison cross-sectional survey study of 571 community pharmacists and 193 hospital pharmacists from Northern Ireland (39% response) in 2007 from the same authors. They found that contributory factors to job-stress included unscheduled disruptions by phone or in person by others, excessive workload, and inadequate staffing provision[34]. Again unscheduled disruptions were viewed in a negative light, however, under the CPCF they are set to rise, as customers and patients become more aware and comfortable with the community pharmacists expanded role[34]. When they compared stress in community and hospital pharmacists, it was found that there was a greater level of stress reported in the community sector[34]. It was also found that independent community pharmacists experienced less stress overall compared to employees, management and locums in the community sector[34]. They also suggested that one cause of the latter may be that perceptions of unfair treatment contributed to stress related reactions[34]. However, they went on to say that despite the lack of challenge of the work itself not being a cause of stress, it remained to be seen whether the challenge of the changes would benefit or hinder the wellbeing of the pharmacists[34].

The widening of the community pharmacist role was also related to job-stress following the implementation of the CPCF. A qualitative Q-methodology study of 40 female GB community-pharmacists in 2009 found some evidence to suggest that the implementation of enhanced services could overburden the workload of community-pharmacists[64]. They also found that levels of stress may be exacerbated by issues related to management, staffing and conflicting demands[64]. They argued that the increasing intensification of workload may serve to reduce pharmacists overall wellbeing and health[64]. In a more recent qualitative semi-structured interview study of 29 female GB community-pharmacists in 2011, by the same author, found that role expansion and excessive workload were associated with increased feelings of stress[66]. These qualitative findings are tentative on their own due to the lack of generalizability and the female bias in the 2011 study, nonetheless they appear to be consistent with the accumulating research in this area.

Therefore, it is a developing trend that changes to community-pharmacy is increasing job-stress. It is argued that the extent to which, and how, community-pharmacists are committed to their profession and organisation will influence how they perceive and respond to the trend of job-stress presented by the, albeit limited, emerging evidence base thus far.

2.6.4. Job Turnover/withdrawal

Job turnover/withdrawal and turnover/withdrawal intentions have often been used interchangeably owing to the sound theoretical basis provided by the theory of planned behaviour (see Chapter 4), coupled with the often insurmountable difficulties in operationalising actual job turnover in research[117-120]. In a robust cross-sectional survey study of 2018 GB community-pharmacists back in 2004 (56% response), almost 28% of pharmacists expected to change their organisation within five years[63]. Part-time workers appeared to be far more committed to their organisations possibly due to their working arrangements, with more females with dependents working part-time[63]. Almost, 45% of pharmacists intended to cut their hours (which was three times the

numbers who were intending to increase their hours), whilst, over half of pharmacists had or were intending to take a career break for six months or longer[63]. Over 68% of female pharmacists and 38% of male pharmacists expected to work part-time in the following five years[63].

According to the 2008 GB pharmacist workforce census community-pharmacists were far more likely, compared to other pharmacists, to intend to leave the sector within two years with 14.1% indicating a high likelihood of this, whilst 12.8% indicated a high likelihood of leaving the profession altogether within two years[48]. In general male pharmacist were far more likely to intend to leave the sector within two years than female pharmacists with 14.6% indicating a high likelihood of this compared to 12% of female pharmacists, whilst 14.4% male pharmacists indicated a high likelihood of leaving the profession altogether within two years when compared to 8.6% of female pharmacists[48]. The 2008 census also found that locum community-pharmacists were far more likely to intend to leave the sector within two years with 17.1% indicating a high likelihood of this, whilst 21.5% indicated a higher likelihood of leaving the profession altogether[48] than community-pharmacists in other job-roles. The 2008 census found that 13.3% of independent community-pharmacists were likely to intend to leave the sector within two years with 12.7% indicating a high likelihood of leaving the profession altogether[48]. In this sector it was also found, in 2005, that locums were far more likely to reduce their working hours (32.3%), leave the community sector (18.9%) as well as leave the profession all together (23.9%)[49]. Whilst, over a quarter of community-pharmacists overall, were actively considering the option of reducing their working hours (26.5%), with 14% considering leaving the sector itself and 13.3% considering the same course of action for the profession itself[49].

A number of reasons have been surmised based upon limited evidence in GB community-pharmacists. Work-life imbalance and organisational commitment were strong predictors of intentions to leave the sector according to a robust cross-sectional survey study of 2018 GB community-pharmacists back in 2004 (56% response)[63]. A further reanalysis of the aforesaid 2008 census data found that high levels of desire to practice pharmacy and job-satisfaction reduced professional turnover intentions[30]. Therefore future research is needed to ascertain to what extent and how professional

commitment and organisational commitment influences community-pharmacists'
withdrawal behaviours in GB.

2.7.   Conclusion

This chapter has demonstrated the heterogeneity of the community-pharmacy
population in GB and established the case for why this population has been chosen for
this programme of research. Community-pharmacists have been found to experience
greater job-stress and lower levels of job-satisfaction compared to other sectors such as
hospital pharmacy in GB. They are also more likely to leave their profession and yet
they constitute over 70% of the entire pharmacy population in GB. Therefore
understanding better how some of the factors which have been found in other contexts
to predict withdrawal behaviour such as work-related commitment (see Chapter 3)
would be important. Equally, the chapter has also highlighted some of the prominent
changes this sector had undergone in the last decade in GB which has led to the increase
in workload and the widening of the job-role in this sector. Such changes require a
committed workforce (see Chapter 3) to perform their job-roles to meet the multitude of
perceived and actual demands, highlighted in this chapter, for productivity and practice.
Therefore, both different types of withdrawal behaviours and work-performance
behaviours will be examined in community-pharmacists in this programme of research.

A number of additional key issues have emerged from this review, which will be taken
forward. For instance, whilst female community-pharmacists have over the last decade
received a significant amount of research attention commensurate with their numerical
dominance within the profession, others, including ethnic-minority community-
pharmacists have received comparatively little research attention, despite their
increasing presence and the dwindling numbers of independent community-pharmacies
that they have historically favoured in GB. Similarly, there is a growing trend in the
number of pharmacists working as employees in large-multiples rather than in
independents. Yet independent pharmacies are seen as extremely important to provide
plurality in GB. They are also more likely to be in the heart of the community whilst
many large-multiples such as supermarkets maybe situated out of town. However,
greater than one in ten community-pharmacists working in independent pharmacies is

considering leaving the profession in GB. The limited GB evidence available equally suggests that pharmacists working in large-multiple pharmacies are more likely to experience high job-stress, low job-satisfaction, and lower levels of autonomy. All of which may contribute to a variety of withdrawal behaviours highlighted in this chapter. A final constituency of interest in community-pharmacy to emerge from this chapter is the locum community-pharmacist in GB. This chapter highlighted the sparse nature of the research literature dedicated to this community subsector, which constituted a third of all community-pharmacists in GB. Yet they were more likely to leave the profession and engage in withdrawal behaviours than any other community subsector in GB, with one in five considering professional-withdrawal in the 2008 census. Therefore, in addition to the heterogeneous population of community-pharmacists being examined as a whole in this programme of research, special attention shall also be focused upon those community-pharmacists working in independent pharmacies, large-multiple pharmacies, as locums and non-locums.

One significant limitation of the literature reviewed in this chapter is the lack of longitudinal studies to infer cause and effect, where warranted. Instead, there is an abundance of qualitative research which whilst justified in providing a nuanced and profounder understanding of what is being observed, does not produce evidence that can be necessarily generalised to the wider community-pharmacy population in GB. Similarly there is reliance within the GB community-pharmacy literature of cross-sectional survey research which whilst can be generalised, cannot infer causality, for instance when investigating the antecedents of job-stress, etc. There are a few studies that have adopted a more purposive mixed method approach marrying the benefits of qualitative and quantitative cross-sectional design which mitigates some of the limitations and accentuates the benefits, which when coupled with a variety of analytical quantitative and qualitative methods, provides more gradation and rounded understanding. Unfortunately, these were found to be rare in the reviewed literature of this chapter. However, this method will be adopted in this programme of research.

The next chapter addresses work-related commitment and provides a narrative of how the work-related commitment field developed and why it is relevant to the community-pharmacy context, with a review of what is known thus far in relation to work-related-commitment in community-pharmacy. It will also further highlight the gaps, particularly

in the UK community-pharmacy context, where commitment research could be used to provide potentially vital insights into how to motivate and manage the current community-pharmacy workforce.

Chapter 3 – Work-related commitment

3.1 Introduction

The previous chapter illustrated the heterogeneity of the community-pharmacist population in GB. It also highlighted the importance of a number of key constituencies despite the relatively small size of the research literature dedicated to them in the GB context. The relevant literature on workforce behaviour outcome research in GB was also reviewed, and a case made for better understanding the extent and roles that commitment may play here.

This chapter shall give a short overview of the field of commitment from which the theoretical underpinning of this programme of research was chosen. This research model is then described in greater detail, along with some of its potential limitations. This chapter shall then document some of the commitment-related research which links to key themes raised in chapter 2. Using examples from non-pharmacy contexts this will further illustrate why insights from more general work-related commitment research would be of benefit to the pharmacy workforce and other relevant stakeholders. This then is followed by a review of the work-related commitment research so far in pharmacy that has been published to date, internationally.

3.2 A brief history of commitment in the workplace

A significant amount of theorising and research into commitment has been carried out in the last forty years or so, using a number of approaches taken from a variety of traditions[105]. This activity was broadly split into four theoretical and potentially overlapping perspectives attitudinal, behavioural, cognitive and integrative[41,105,121,122]. Whilst there was much debate about whether the term of "attitudinal" was fully applicable when discussing commitment, it did describe a process in which commitment was said to provoke behaviour which in turn reciprocated by maintaining the said commitment[41,105]. In the main, such models of commitment specified antecedents and relevant outcome variables that could be predicted to be influenced by commitment[41,105].

3.2.1 Attitudinal models

One of the earliest models that was categorised broadly within the attitudinal perspective was by Gouldner[123] in 1960. In this model an individual's organisational commitment could take a number of forms, cosmopolitan integration (the extent to which an individual felt a part of the employing organisation as a whole, as well as other organisations), and organisational interjection (the extent to which personal and organisational goals were aligned), as well as commitment to a number of values such as the other members of the organisation and political responsibility within the organisation[123]. Such dimensions of commitment were said to be influenced by exposure to the culture of the organisation and whether the individual was a member of more than one organisation[123]. In the 1970s, Porter et al[124] in 1974, operationalized organisational commitment as three factors which consisted of an alignment of values with the organisation, readiness to put a lot of effort in for the sake of the organisation, and a determination to remain employed within the organisation[124]. Subsequent research including Steers[4] in 1977 and Mowday et al[121] in 1979 and 1982[125] built upon Porter et al's work, and provided a larger nomological network of antecedents and outcomes, which propelled the study of commitment to a wider audience and greater acceptability[105]. Following in the 1980s, Blau delivered a one-dimensional provision of commitment to an individual's career which simply reflected an individual's attitude towards his/her professional career[126-128]. Alternatively, O'Reilly and Chatman in 1986 contended that commitment was predicated on three factors, compliance (adopting of attitudes and behaviours to further goals and gain reward), identification (accepts influence to establish or maintain a satisfying relationship) and internalisation (attitudes and behaviours are adopted because they are similar to values already held)[129].

3.2.2 Behavioural models

In the 1960s Becker was one of the first to operationalise commitment in behavioural terms with the side-bet approach to organisational commitment, which maintained that individuals remained in an organisation due to the perception that investments made within the organisation would be greatly reduced if that relationship was rescinded[130].

Whilst the loss in itself may not have been a large issue, it was what that loss would mean in relation to a linked consideration of consequence and value (e.g. loss of lucrative benefits to lifestyle, etc.), that may have been problematic[130]. The greater the accumulation of these investments that had occurred the more difficult it would be to leave the organisation, therefore the greater the individual's commitment to the organisation would have become by default[130]. This said Hrebiniak and Alutto in 1972, maintained that commitment was primarily structural in essence and reflected the changes over time of the employee-organisation transactional relationship on investments made[131]. A final example of the behavioural interpretation of commitment is offered by Staw in the early 1980s[132]. Here commitment occurred as a by-product of a complex interplay between beliefs based upon normative modelling and rationality (both prospective and respective), in which behavioural actions were taken for both future benefit and to justify previous actions and behaviours[132]. Therefore the consideration of what actions to take were not limited to financial deliberations but also the protection of the individual's psychological wellbeing, which, in order to justify previous behaviour, could have led to an increase of costly commitment-related behaviour to compensate[132].

3.2.3   Cognitive models

Unlike the other perspectives on the field of work-related commitment the cognitive perspective was the least investigated, with most activity taking place in the late 1970s and 1980s. Such models of commitment emphasised the role of an individual's rationality and reason as playing an active role in determining the degree to which an individual exhibited commitment[105]. Marsh and Mannari in 1977 illustrated that where morality influenced commitment to the organisation, it was based upon an individual's moral judgement, with the relative advantages of staying or leaving the organisation, as well as the benefits received thus far in an individual's tenure, having negligible bearing on commitment levels[133]. Moreover, Wiener and Vardi in 1980 contended that commitment behaviour was viewed as a matter of values, morality and correctness based upon normative evaluations[134]. By the same token, Wiener in 1982 maintained using cognitive-instrumental motivation theory[135]; commitment was viewed as the internalisation of perceived normative pressures to act in a way which was consistent with the interests and objectives of the organisation[136].

3.2.4 Integrative models

It is argued that each of these types of commitment theory represent a divergent and yet related facet of commitment, with differing illustrations of how these different facets are developed and maintained[41, 105]. However, others have sought to provide a more holistic understanding of commitment by combining the three traditions in an integrative approach. One of the first examples of an integrative approach to work-related commitment came from Kanter in 1968 put forward a combination of different forms of commitment which included continuance commitment (behavioural cost benefit), cohesion commitment (attitudinal effective attachment), and control commitment (cognitive, morality judgement based upon moral and normative beliefs)[137]. Reicher suggested that commitments were experienced differently between one person and another according to the multiple commitments perspective[16]. It is suggested that the variety of foci and strengths of the commitments could be captured appropriately in a commitment profile[16]. Therefore various individuals could have been committed to the organisation for different reasons but the level of organisational commitment would have been the same[16]. The use of multiple commitments was viewed as a way to add a greater coherence to the relationships. However, too many commitment focuses could have resulted in commitment foci conflict thereby precipitating withdrawal from the organisation[16]. Meyer and Allen in 1991[8] proposed a three component model (TCM) of commitment which was expanded by Meyer and Herscovitch[41]. It contended that commitment took one or a combination of three forms, affective (internalisation of goals and values), continuance (maintain tenure to avoid costs due to lack of alternatives) and normative (obligation-based) commitment, towards one or more commitment foci[8,41].

Following this brief review of the literature and the wide range of theoretical models available, it was deemed that this programme of research should use a holistic integrative model as its theoretical underpinning. Klein and colleagues in their recent review of the literature found that of the various integrative theories of commitment by far the most widely used and accepted was the TCM[105]. Despite this the TCM has been used in only a couple of studies very recently within the same timeframe as the present research programme in the international pharmacy workforce research and has yet to be

used in the pharmacy workforce research in GB (see section 3.6). Therefore, coupled with the recommendations of such stalwarts of the field of work-related commitment such as John Meyer[138], Thomas Becker[139], Rick Mowday[140], and Gary Blau[141], it was decided that the Three-Component Model of Commitment (TCM) would be used as the theoretical underpinning of this research programme. The justification for the use of this theory is discussed further in section 3.4.

3.3   The Commitment Construct Foci

As noted in the previous sections there are several foci and definitions of commitment that have been operationalised in the research literature[142]. This section shall provide a rationale for the use of commitment within the current community-pharmacy workforce research context. As illustrated, commitment has been studied now for almost half a century. Even 25 years ago, Morrow, in her seminal work felt compelled to review the myriad of commitment constructs that had been developed without any clear coherence or understanding of their inter-relationships[143]. There appeared to be no clear evolution or rationality to the development of the concepts, with concepts being developed with evident lack of awareness of what had come before[143]. This had led to significant overlaps and conceptual redundancy between concepts and obliged Morrow to call for a moratorium on the development of further concepts until some coherency was reached on those that already existed[143]. In all she highlighted over 25 different forms of commitment in the literature[143], which she subsequently categorised into five major foci of commitment as illustrated in Appendix 3.1.

Work commitment as an overarching construct was discarded, as there appeared to be little benefit in devising a single dimension generic concept and measure[143, 144]. Each of the foci was not interchangeable, as they varied too much to provide a coherent single concept[143]. Subsequent researchers were also advised against the indiscriminate use of the different commitment foci interchangeably[41]. Unfortunately the desired effect does not appear to have been realised. Meyer and Herscovitch[41] concluded almost two decades after Morrow[143] that the commitment literature was still extremely varied, and almost a decade since then Klein et al[105] concluded likewise. Meyer and Herscovitch[41] showed that there was a lot of disagreement, confusion and frustration

regarding the different definitions and dimensionalities of the constructs[41], as can be viewed from the selection of definitions in Appendix 3.2. Thus it was proposed following a review of the literature that an integrative conceptualisation of commitment would be most appropriate to use and this was defined as "a mindset that can take different forms and binds an individual to a course of action that is of relevance to a particular target"[41]. This definition emerged from a consistent and widely established body of research[105] and was viewed as a general definition that was purposefully designed to be multi-focused, with different forms of commitment emanating from different bases, and therefore appropriate for the present project, with the aforementioned 'targets' being the profession of pharmacy and the employing organisation[41].

It was also important to examine the relevant commitment targets in order to gain from their understandings[142]. Indeed, the targets of professional, occupational, and career commitment have been used interchangeably within the commitment literature as they have been applied to similar constructs[9,142]. For the purposes of examining community-pharmacy it was regarded that 'occupational' and 'career' would be inappropriate. For instance, career commitment was conceptually ambiguous as there is no concise definition of a career[26]. It could be said that a career was a pattern or series of work-related experiences that spanned the entirety of the working life, across, occupations, jobs and organisations[145]. It could also be argued that it went beyond the scope of occupational and professional commitment depending on the definition of the career and the chosen occupation[146]. For example, it has been contended that the career was actually the chain of jobs held spanning a person's lifetime, including any non-professional jobs as well[147,148]. On the other hand, it could have been surmised that an occupation as a commitment target was also too broad and all encompassing[149]. Likewise occupational commitment may have been viewed as related to a collection of people who perceive that they perform the same or similar types of work/roles regardless of its content[149]. Therefore, professional commitment was viewed as more exclusive and was seen as a specific subset of occupation[149]. This subset was characterised as possessing elevated levels of competencies and expertise, knowledge, autonomy, ethics, self-regulation by member of the profession and strongly held views on the imperative nature of the profession's service[127,128,145,150-152]. It was considered that professional commitment would have been the most sensitive operationalisation of

a community-pharmacist's commitment to his/her profession[9,142]. The targets of 'occupation' and 'career' may have been open to unwanted interpretation by community-pharmacists and therefore open to measurement contamination with possible deficiency in construct validity[9].

The other commitment target of interest in community-pharmacy was organizational commitment, as most community-pharmacists were employed in an organisation, with more than 54% employed by large-multiple pharmacies (see section 2.3)[47,49]. In view of the monumental changes that have occurred in community-pharmacy and continue to occur, the individual community-pharmacists will be integral to the success of the implementation of the changes in their workplace and to their work role (see chap 2). Therefore, the organisation will need a pharmacy workforce that is committed to aiding the employing organisation into meet these challenges. In addition, increased instability in the workplace[146], may have resulted in people reducing their levels of commitment from the organisational realm (due perhaps to the perceived lack of reciprocation), whilst maintaining or increasing their commitment to their profession[21,26,146]. This again could have created unwanted complications and costs to the organisation[79,153,154], an example of which was the increasing trend of working reduced hours[60], or working as a locum[155]. Thus this was viewed as an important target with associations to retention[38,105-108,142] and work-performance[38,105-108,142], as well as contributing to the understanding of how people developed, and made sense of competing commitments[26,38].

3.4   Commitment theory

It is suggested that a commitment to a target, as defined in section 3.3, is a complex multidimensional construct[7,9] that can take different forms or combination of forms[41]. The TCM[7,9] contends that there are three components/dimensions (or forms) of commitment: affective, continuance and normative[7-9,156,157], although the latter was added subsequently[7]. In each is the notion that commitment is a psychological frame of mind which defines the employee's relationship with the target (i.e. organisation and/or profession) and has connotations for the individual's resolve to stay with the targets or leave[7-9,156]. Research has shown that each of the three forms increase an individual's

likelihood to remain with the target[9,19,158]. An individual can experience differing levels on each of the three forms of commitment[159]. Indeed it is argued that each of the three forms of commitment follows a different developmental path from different bases, and therefore has differing repercussions for job-related behaviours, productivity, performance, as well as organizational citizenship behaviour, etc.[7-9,13,19,156,157,159].

3.4.1 Affective commitment

The TCM suggests that individuals with high levels of affective commitment tend to stay with the target because they wish to remain[7-9,41,157,158]. This meant that they would have been more willing to be up-to-date about the latest thinking associated with the target[9,41,158]. They may also have been an active member of any target related association and engaged in additional activities that would have gone beyond the minimum requirements to remain with the target[9,41,158]. Affective commitment would have been developed as a result of expectations of the individual being fulfilled, and that being with the target had been a satisfying experience, in which the individual's needs were fulfilled (e.g. given fulfilling work to do, being given the support and infrastructure to develop further and become involved with the target, etc.)[9,41,122]. Initial socialisation processes are argued to be pivotal in the development of affective commitment through the understanding of, and alignment with, the target's norms, values and requirements[19,41,160-164]. As employees again increased levels of positive socialisation with the target, the more they developed a sense of affective commitment[19,41,160-164].

3.4.2 Normative commitment

The TCM suggests that individuals with high levels of normative commitment remain with the target because they feel morally obliged[7,9,41,158]. Normative commitment is said to develop through a number of avenues, including normative pressures from the family, peer group, and other societal influences, as well as reciprocation for felt obligations to the target[9,41,158,160,161,163]. A family history of involvement with the target could, for example, create a pressure to follow in familial footsteps, sub-cultural norms, peer group, etc. [7,8,41,160]. Added to this could be the support given to the individual, such as training, before, during and after qualification, including financial, peer support,

mentoring, management support etc.[9,41,158]. This in turn could inform the social exchange relationship which induces the individual to reciprocate for either, or all of, receipt of benefits, fulfilled promises / obligations and/or met expectations, as a part of an individual's psychological contract[41,165-170]. However, perceived violations or un-kept promises, reduces the need to reciprocate over a period of time[41,165-170]. In addition to the influence of the norm of reciprocity upon this form of commitment[171], as mentioned, such normative commitment may develop from the process of internalising target-related norms through exposure to target-related culture during early target-related socialisation, as well as the individual's personal norms[41]. It could also be argued that some targets (working in the NHS, a charity, as a nurse, etc.) would have significant public service elements in their application to society, particularly in the public arena[9,41,122]. Therefore if an individual becomes associated with such a target it could represent an additional obligation[9, 41,122].

3.4.3　Continuance commitment

Individual's that experience continuance commitment remain with the target because they need to do so (as any alternative available would have rendered the cost of leaving too high) [7-9,41,157]. The latter was based upon Becker's[130] Side-bet theory[7,8,157]. In other words commitment comes about due to the individual's investment of time, money, effort, etc. into the target, which are specifically orientated towards that target, and would have been lost if the individual left the specific target[7,9,23,41,130,157]. This perception of loss if the individual leaves the target would be further magnified if the individual perceives that there are limited viable alternatives that would compensate adequately for the losses made by leaving the target[7,9,23,41,130,157]. Thus the individual would remain committed to the target so long as the individual calculated greater losses by leaving[7,9,23,41,130,157]. Therefore, continuance commitment may reduce the individual's likelihood of engaging in activities other than those that are required to remain with the target[7-9,41,157,158].

The multiple forms of the TCM particularly, were seen as a step change as older operationalisations of similar single target constructs, such as *career* commitment, had been viewed primarily as single dimensional constructs[7,9,146]. It may be regarded as a profile model as individuals could score higher or lower on each of the different forms

of commitment independently as a measure of commitment, in relation to each target[149]. However, more recent incarnations had suggested the exploration of more additive and/or interactional approaches to the TCM[41]. In any event, it is contended that a multidimensional approach is viewed as preferable due to the richness of additional information that would otherwise be hidden by an inappropriately single dimensional construction[9]. For instance, the finding of organisational commitment having only a small significant relationship with intentions to leave the organisation could be explained, by the introduction of continuance commitment. In this scenario those employees who had exhibited continuance commitment may have not necessarily scored highly on the single dimensional organisational commitment scale, as they had often resembled the measurement scale of a more affective form of commitment[127]. Therefore the measure would not have been sensitive enough to have examined the multi-faceted nature of commitment and would instead have provided an incomplete and distorted interpretation of the situation.

3.4.4 Critique of the TCM

There has also been some criticism of the TCM[145]. For instance, affective commitment and normative commitment have at times been found to be highly correlated and thus their distinctive sub-dimensional relationship was not as defined as that of affective commitment and continuance commitment, or that of normative commitment and continuance commitment[145,160]. Also the way the two facets correlated with other constructs such as job-satisfaction, etc. were similar[38,122,145,160]. A more rigorous test would have been to ascertain if the correlations that affective commitment and normative commitment have had to a third variable were significantly different from each other, rather than viewing the fact that only one of them achieved a significant relationship with a third variable as evidence of discriminant validity[145]. This said, factor analyses had shown that the TCM exhibited distinct dimensions, for both targets of the profession and the organisation[9,25]. However, it could also have been argued that normative and affective components were indeed similar and yet distinct[160,172]. They did share some antecedents, which were understandable conceptually, as it could have been viewed that obligations consisted of both cognitive and emotional components[160,172]. However, the key difference was in the tone of the two components, whilst it had been suggested that most obligations may have consisted of an affective-

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emotional component, it cannot be equally said that all affective attachments could have contained obligations[160,172]. This was further illustrated by the broadly different way in which affective commitment developed in comparison to the development of normative commitment[160,172].

A second criticism of the normative component related to another assessment of possible ambiguity at how normative commitment would have developed[149,160,172]. It was suggested that pressures of family and friends associated with the target may have played a role in normative commitment development[160]. However, some argued this to be relevant in only a minority of targets, such as the professions of medicine or law, due to their perceived prestige and status[149]. In other words it was claimed that normative antecedents aside from the latter were essentially antecedents of continuance commitment[149]. Reciprocal imperatives were based on an individual's 'investments' and therefore were predictive of continuance commitment[149]. However, it was argued that such a claim[149] may not have explored the full spectrum of the obligation laden normative commitment. It was equally appropriate to emphasise the other obligations that are based on a sense of moral reciprocity and loyalty[160]. This occurred as a result of the socialisation process during training, where the receipt of both formal and informal aspects of education concerning social normative aspects associated with the target, occurred [173]. It may have been argued as well that when associated with some targets, particularly in the UK the training was heavily subsidised by the public sector, and with often considerable involvement and support from professional associations. In these contexts the individual may have felt a moral obligation to remain with the target[9,160]. Additionally, with particularly highly sought after targets, where there was considerably more demand than training places available, this too may have provided some onus on the individual to remain with the target. Another developmental path for an obligation could have come from the social perception of the target. If there was perhaps a chronic shortage at a time in which such targets were in need; in times of national stringency, then individuals may have thought again about leaving the target. Finally, if association with a target also provided the individual with a sense of duty that could have also been conceptualised as a sense of responsibility (obligation) to the intended recipients, then the individual may have remained with the target in order to discharge that responsibility. It could have been considered that these examples were aligned with ideas of obligation which were not tempered by perceived investments.

There was also a third criticism that had been levelled at the TCM which questioned the one-dimensional nature of continuance commitment[40,174,175],whilst others did not[176-179]. There are some that suggested and have indeed found that continuance commitment may have been more appropriate as a two factor model, one factor representing High-sacrifice and the other factor representing perceived lack of alternatives[174,175]. However, whilst the two factor model of continuance commitment was found to provide a better fit, neither of the two factors when assessed individually with outcome measures (e.g. job performance, turnover intentions, etc.) performed any differently from each other or indeed the one factor model of continuance commitment[159,160,180,181]. This suggested that there did not seem to have been any practical advantages of treating continuance commitment as a two factor model when examining outcome variables[160].

In sum the criticism levelled at the TCM such as the dimensionality of continuance commitment, the development path of normative commitment and the distinction between affective commitment and normative commitment, far from detracting from the validity of the model, actually provided additional avenues for further developmental research into the model. Indeed, the multitude of diverse successful research studies carried out in a variety of professions, organisational contexts, in several countries and cultures attests to the robustness of the TCM and the rigour of its application in its continued replication[8-10,13,14,25,38,40,41,103,146, 160-162,164,176,178,181-204]. All of which leads it to be recommended by prominent work-related commitment research protagonists such as John Meyer[138], Thomas Becker[139], Rick Mowday[140], and Gary Blau[141].

3.5   Commitment Research using the TCM

This section provides a snapshot of research using the TCM that has been carried out in other workforces and organisational context. It will demonstrate that there is evidence to suggest that using the TCM can provide additional insights beyond that available in a unidimensional approach.

3.5.1 Commitment and workload/demand

There was only limited research to date examining the relationship between the TCM and workload/demand. Nonetheless, affective-organisational commitment has been found to moderate the effects of high workload on outcomes such as withdrawal behaviours and wellbeing. For instance, a cross-sectional survey study of 123 quality improvement nurses in south Korea in 2011 found that affective-organisational commitment ameliorated the negatives of high workloads upon intentions to leave their jobs[205]. Neither normative nor continuance-organisational commitment was found to be a significant predictor, nor reported as being related to influence the experience of workload[205]. However, the small sample size reduced the level of generalisability of these results, as did the specialist nature of the nurses selected for the study. The cross-sectional nature of the study meant the causality could not be inferred. The latter findings were corroborated by a cross-sectional survey study of 506 public sector workers (response 78%) in Germany in 2007[206]. This found that affective-organisational commitment moderated the impact of an excessive workload on an individual's wellbeing[206]. Again due to the cross-sectional nature of the study, the direction of causality could not be guaranteed. The moderating effect of affective-organisational commitment upon perceived high workload demands was again replicated in a subsequent cross-sectional study of 260 nurses (74% response) in 2012 in Germany[207]. Here affective commitment attenuated the effects of perceived workload on burnout, psychological strain and withdrawal behaviours. Again the small sample size, cross-sectional design and sample demographic characteristics limit the strength of this study.

However, the relationship between workload/demand and commitment was not restricted to affective commitment. A longitudinal survey study of 403 worker from different organisations (38% response) from Canada, France, and other countries in 2008 at time one and 220 workers (64% response) at time two, one year later, found a significant albeit weak positive relationship between normative-organisational commitment and perceived work overload[208]. One reading of this was that normatively committed individuals were more likely to acquiesce to more demands owing to a sense of obligation and take on too many tasks[208]. However, the dual language capture of the construct measures, the unsystematic recruitment process, the small response rate, and

eventual sample size may limit the strength of this otherwise robust longitudinal study. Whilst the majority of the research examining workload/demand (and its variations) and commitment have used an affective interpretation, the latter provides illustrates at least initial evidence of the added value of using the TCM in such research.

3.5.2   Commitment and Job Performance/In-role behaviour

There is emerging evidence that different facets of the TCM beyond affective commitment influence job performance or in-role behaviour. For instance, a cross-sectional survey of 126 matched pairs of employees and supervisors from the USA in 2011 found that in-role behaviour was strongly positively correlated with high-sacrifice organisational continuance commitment as was affective-organisational commitment[209]. Normative-organisational commitment was also found to be positively correlated moderately with in-role behaviour, but low-alternative continuance-organisational commitment was found to be negatively correlated with in-role behaviour[209]. However, only affective-organisational commitment and high-sacrifice organisational continuance commitment was found to be significant predictors of in-role behaviour in a stepwise regression model[209]. The strength of these findings may be limited by the cross-sectional nature of the study which cannot infer causality of the findings. Also the majority of the participants were students as well, which when coupled with the small sample size may reduce the generalisability of the findings. This said the study was less likely to suffer from inflated coefficient due to common method variance.

The benefit of all facets of the TCM above and beyond affective commitment was also illustrated in a cross-nationally invariance study using cross-sectional surveys of 940 university faculty members (29% response) from Belgium, Germany, Holland, UK, Finland, and Sweden in 2010[210]. It found that affective-organisational commitment had a positive effect on job performance whereas continuance-organisational commitment had a negative effect and normative-organisational commitment had no significant association with job performance[210]. However, despite the generalisability of the results in relation to the cross-national nature of the study, the small response rate which ranged from 18% in the UK to 40% in Belgium was still on the low side may have

introduced some bias. Moreover the cross-sectional design reduced the ability to infer causation in this study.

A cross-sectional survey study from the USA using cluster analysis to create nine different profiles from a combination of strong, moderate and weak commitments levels of affective-organisational commitment and continuance-organisational commitment was conducted in 2005[211]. Using a sample 970 energy industry workers (34.5% response) evidence was gathered for four of the profiles Allied (moderate affective commitment and moderate continuance commitment) Complacent (moderate affective commitment and weak continuance commitment) Devoted (strong affective commitment and strong continuance commitment) and Free Agents (weak affective commitment and moderate continuance commitment) and subsequently replicated in a sample 345 employed students (85.6% response)[211]. A third cross-sectional survey study, from the same authors, of another 148 employed students from the USA in 2005 found that devoted, complacent and allied profiles each scored significantly higher levels of job performance (in-role) than the free agent profile[211]. The study emphasised the added benefit of using the facets of the TCM beyond affective-organisational commitment[211]. However, the cross-sectional nature of the study does not allow for causality to be inferred and the small sample size of the final study along with the low response rate of the first survey sample also may introduce some bias. This said the replication of the findings in two further survey samples coupled with the multiple data sources employed in the third survey (using supervisor's ratings of job performance) attested to the robustness of the findings. Taken together these few studies provide an emerging optimistic picture of the benefit of using the TCM over affective commitment only.

3.5.3   Commitment and extra-role behaviours (discretionary)

Several reviews have indicated that organisational commitment had a stronger relationships with extra-role behaviours such as organisational citizenship behaviours than in-role behaviours[212]. Moreover, there are a number of studies which have illustrated the added benefit of using the TCM beyond using an affective form of commitment only. The following are examples of some recent studies in this area. A cross-sectional survey study of 545 hospital employees (18.5% response) from Canada

in 2006, it was found that employee's with high levels of affective commitment were more willing to engage in discretionary behaviours[10]. The latter was even stronger when both continuance and normative commitment were low[10]. Continuance committed individual were far less likely to engage in discretionary behaviour[10]. However, if they exhibited high levels of normative commitment as well then they would be willing to engage in higher levels of discretionary behaviour[10]. Normative commitment was found to have its best relationship with discretionary behaviour, when both continuance and affective commitment were low[10]. Continuance commitment was found to have its strongest negative relationship with discretionary behaviour when affective commitment was low and normative commitment was high[10]. The cross-sectional nature of the study reduced the chance of a causal explanation, whereas the low response rate had the potential to introduce significant bias within these results.

Similarly in a cross-sectional survey of 403 health care workers (response 45.4%) from Canada in 2012 found that high levels of affective-organisational commitment, normative-organisational commitment and continuance-organisational commitment were associated with higher levels of organisational citizenship behaviours[204]. Moreover, any combination of high affective-organisational commitment and high normative-organisational commitment with any form continuance commitment was related to higher levels of discretionary extra-role behaviour[204]. The use of multiple data sources latent profile analysis illustrated a person centred approach to the analysis and the utility of using the TCM[204]. However, the cross-sectional nature of the study coupled with the relatively small response rate meant that causality could not be inferred and there was a small potential for bias.

Continuance-organisational commitment when viewed as multidimensional was also found to be predictive of organisational citizenship behaviours beyond affective commitment. For instance in a cross sectional study of 126 matched pairs of employees and supervisors from the USA in 2011 found that when affective commitment was controlled in a stepwise regression model, high-sacrifice continuance commitment was a significant positive predictor of organisational citizenship behaviour, whereas low-alternative continuance commitment was found to be a negative predictor. The strength of these findings may be limited by the cross-sectional nature of the study which cannot infer causality of the findings. Also the majority of the participants were students as

well, which when coupled with the small sample size may reduce the generalisability of the findings.

These studies illustrated the importance of the different forms of commitment on an individual's willingness to perform behaviours which went beyond their job-roles, or required an expansion in their job-role[38,106,108,213].

3.5.4 Commitment and stress

The use of the different facets of the TCM has also provided additional insights beyond affective commitment in relation to job-stress. A robust meta-analysis of found that affective commitment was found to be associated strongly with less stress reaction, as was normative commitment, although to a lesser extent[38]. The same was not true for continuance commitment which was found to have either no association or a weak association with an increase in stress reactions[38]. A cross-sectional survey study of 288 nurses (100% response) from the USA in 2009 found that individuals with high levels of affective and normative-organisational commitment reported lower levels of psychological distress[201]. However the direction of causation cannot be inferred due to the cross-sectional design. Moreover despite the response rate the research sample was small and therefore, generalising the findings beyond similar contexts may be problematic.

A recent study of nurses in Taiwan found that organisational commitment was impacted negatively by role stress[214]. The triggers of the stress reaction appeared to be related to the work environment, experiences at work and treatment by management[214]. A cross-sectional survey of 131 mentor coordinators (100% response) from Israel in 2009 An Israeli based study found that job-stress had a negative impact on affective commitment, and little or no impact on continuance commitment (as commitment is related to perceived costs of leaving[215]. Neither did stress appear to have an impact on those individuals whom held a normative commitment (as their commitment is related to their sense of moral obligation)[215]. This study was well constructed and illustrated the additional information that can be elicited from a multidimensional construction of commitment[215].

Two cross-sectional surveys of 914 (76% response) and 336 (100% response) workers employed in a variety of sectors in Turkey in 2005[176]. The studies consistently found that individuals with high levels of affective and normative-organisational commitment reported lower levels of job-stress, even when compared to those with high levels of affective commitment mainly[176]. Comparatively, continuance commitment only, was more associated with higher levels of job-stress[176]. Taken together these studies provide a few examples of the relatively limited research which has examined the TCM with job-stress. However, what research there is appears to suggest that the use of the different facets of the TCM provide a greater explanatory value that affective commitment alone[142].

3.5.5   Commitment and satisfaction

The vast majority of work-related commitment research has examined mainly affective forms of commitment with job-satisfaction[26,37,38,99,101]. This said there is some research which examines the TCM with job-satisfaction, which suggests that the different facets of the TCM provide a greater understanding of job-satisfaction than affective commitment on its own[216]. In a cross-sectional study of 216 office workers (57% response) from Belgium in 2000, in addition to the positive correlation between job-satisfaction and affective-organisational commitment, continuance-organisational commitment was also found to be significantly correlated albeit weakly with job-satisfaction, negatively[216]. However, the study was limited by the cross-sectional design and a relatively small response rate. Moreover, a cross-sectional survey study of 182 employees associated with a university from the USA in 2011 found using regression analysis that job-satisfaction was predicted most strongly by affective commitment followed by normative commitment, high-sacrifice continuance commitment and low-alternative continuance commitment (negative predictor), all three of which were predictors of similar strengths. Interestingly in terms of predicting pay satisfaction high-sacrifice continuance commitment was the strongest predictor followed by affective commitment. This was also mirrored when predicting satisfaction with benefits. The strength of these findings may be limited by the cross-sectional nature of the study which cannot infer causality of the findings. Also the majority of the participants were students as well, which when coupled with the small sample size may reduce the generalisability of the findings.

The additional insights of examining the facets of the TCM with job-satisfaction are also evident in other cultural contexts. In a cross-cultural cross-sectional survey study of 168 nurses (100% response) from GB and 388 nurses (100% response) from Malaysia in 2010, found that normative and affective-organisational commitment were strongly correlated positively with job-satisfaction in the Malaysian sample with continuance commitment having no association[217]. In the GB sample affective commitment was very highly correlated positively with job-satisfaction, with normative commitment also strongly correlated with job-satisfaction in the same direction[217]. However, unlike in the Malaysian sample, in the GB sample continuance commitment was found to have a medium-sized negative correlation with job-satisfaction[217]. Interestingly Malaysian nurses were less satisfied with their jobs but more committed to their organisations than their GB counterparts in this study[217]. Again this study is cross-sectional, and therefore causation cannot be assumed. Moreover the sample size of the GB sample is very small and may introduce potential bias in the analysis.

Similarly, in a cross-sectional survey study of 257 private sector and 360 public sector workers (overall 69% response) from Greece in 2010[218]. It was found job-satisfaction had a stronger relationship with both affective and normative commitment in public sector workers compared to private sectors workers[218]. Moreover, affective commitment was found to have stronger positive correlations with job-satisfaction (both intrinsic satisfaction: interesting job; and extrinsic satisfaction: higher pay) than normative commitment, although normative commitment was also strongly correlated with both forms of job-satisfaction[218]. Again the cross-sectional design reduces the applicability of causality in these results. This said taken this emerging evidence base illustrates, even in a culturally diverse settings, the benefit of using the different facets of the TCM in providing a greater understanding of job-satisfaction beyond that of affective commitment only[108].

3.5.6   Commitment and perceived organisational support

Perceived organisational support has been theorised as being antecedents of both affective commitment and more recently normative commitment[41,172]. This was evidenced in a cross-sectional survey study of 249 prison workers (response 62.6%)

from Canada in 2007[219]. They found that perceived organisational support was very highly correlated with both affective and normative commitment[219]. Regression analysis illustrated that perceived organisational support significantly predicted both affective and normative commitment even when locus of control and work autonomy were controlled[219]. However, the predictive strength of perceived organisational support was moderated by both locus of control and work autonomy on affective and normative commitment[219]. Again the cross-sectional nature of the study and lower sample size may be sources of bias and reduce the generalisability of the findings. This was echoed in a cross-sectional survey of 687 employees constituting three separate samples working in offices, training agencies and high schools from Italy, in 2006 also found that perceived organisational commitment strongly predicted affective commitment and normative commitment in each of the three samples consistently[220]. Cross-sectional nature prevents inferring causality here.

In a longitudinal survey study, 403 employees (38% response rate) completed the survey at time one and 220 participants (64% response) completed the survey at time two from mainly Canada, France and other French speaking countries, in 2007 and 2008[208]. Perceived organisational support was found to effect wellbeing through the different facets of the TCM in two main ways[208]. Firstly perceived organisational support was found to increase affective commitment, which in turn elevated wellbeing[208]. Secondly, perceived organisational support was found to reduce low-alternatives continuance commitment, which was reduced the negative impact of this TCM facet on wellbeing[208]. Although perceived organisational support was found to relate positively with both normative and high-sacrifice continuance commitment, these two facets of commitment were found not to be related to wellbeing[208]. This study represented one of the few examples of longitudinal research being carried out in the TCM. However, the low response rate coupled with the complex analysis may reduce the generalisability of the study. However, despite this, the developing evidence of perceived organisational supports relationships with the different TCM facets appears to corroborate the theoretical depiction of perceived organisational support as an antecedent of affective and normative commitments[41,172].

3.5.7 Commitment and the psychological contract

Research into the relationship between the TCM and the psychological contract is growing but is still relatively small in proportion. Nonetheless the following two studies illustrate the benefit of the TCM over examining affective commitment alone. Two cross-sectional survey studies of 301 employees (15.7% response) and 147 employees (14% response) from Canada in 2008 found that the different features of the psychological contract also contributed to the prediction of affective commitment and normative commitment even when contract type and contract fulfilment was accounted for in the regression model[203]. The studies found that affective and normative commitment were positively predicted by broad, trusting, equal negotiated tangible and long term facets and negatively predicted by unequal, imposed and short-termist facets[203]. However, the cross-sectional design, and very low response rate reduces the strength of these findings.

A longitudinal survey study in the USA of 850 employees (20% response) at time one, 442 employees (52% response) at time two, and 285 employees (64.5% response) at time three, over a six month period in 2008, found that perceptions of the exclusivity of the psychological contract accounted for significant proportions of the variance of affective commitment, normative commitment, and to a very reduced extent continuance commitment[221]. Interestingly, the positive relationship between the perceived unique contract and continuance commitment was most pronounced amongst the young and early career employees[221]. However, it is middle to late career employees whom are most likely to perceive that their contract is unique[221]. One challenge to the generalisability of this robust study may be the low response rate at the initial survey prior to the subsequent attrition in the following arms of survey data collection.

3.5.8 Commitment and turnover/withdrawal

There is a substantial amount of research which has looked at the role of work-related commitment on withdrawal behaviours[26,38,99]. However, there is comparatively less research looking at how the different facets the TCM relate to withdrawal behaviour. Despite this there has been consistent evidence of the benefit of the TCM on

understanding withdrawal behaviours[26,38,99]. For instance in a recent cross-sectional survey study of 311 employees (38% response) from Canada in 2011, affective commitment, high-sacrifice continuance commitment and normative commitment were all negatively correlated with withdrawal behaviours, whereas there was no significant association with low-alternative continuance commitment[222]. However using structural equation modelling affective commitment and high-sacrifice continuance commitment were found to be negatively associated with withdrawal intentions. Interestingly low-alternative continuance commitment was found here to be positively predictive of withdrawal intentions, whereas normative commitment was now found to have no significant association with withdrawal intentions.

A Belgium based longitudinal survey study in 2005 of employed university alumni consisting of 578 participants (45% response) at time one, 486 at time two, 443 at time three and 364 at time four, was analysed using latent growth curve analysis[223]. They found that over that time frame affective and normative commitment changed far more than high-sacrifice or low-alternative continuance commitment, and was more sensitive to breaches in the psychological contract than the more transactional high-sacrifice and low-alternative[223]. Interestingly, the study illustrated those changes in affective and normative commitment over time were the dominant influence on withdrawal behaviour through withdrawal intentions[223]. However, despite the robust longitudinal trajectory analysis, the study was limited by the relatively low response rate at time one which, when coupled with subsequent attrition, may have led to further potential bias in the findings.

Finally in a cross-sectional survey study of 1143 Human Resource Managers (38% response rate) from GB in 2003, it found that affective-professional commitment was negatively associated with withdrawal intentions from the profession, whilst normative-professional commitment had a weaker negative relationship with professional-withdrawal intentions[146]. Continuance commitment was found to exhibit the weakest negative relationship with professional-withdrawal intentions[146]. However, the study also found that the influence of normative commitment on withdrawal intentions increased when continuance commitment was low[146]. This was just some of the evidence which suggested that the TCM played an influential role in withdrawal behaviour beyond that of affective commitment.

3.6   Commitment in Pharmacy

To date there have only been two peer reviewed studies examining commitment in pharmacists in GB. Only one of these studies has focused on community-pharmacists. Both studies used an affective definition of commitment. For instance in the cross-sectional survey of 905 hospital pharmacists (45% response) from GB in 2002 found that career commitment was higher in female pharmacists then males[35]. However the cross-sectional nature of the study precluded assigning causality to whether postgraduate education influenced commitment. Moreover the response rate may also potentially introduce bias. In a relatively robust cross-sectional survey study of 2018 GB community-pharmacists in 2004 (56% response), it was found that professional commitment was high in the pharmacy profession particularly amongst those whom were senior level and female[32]. Continuing professional development (CPD; see Appendix 1) was also correlated positively with professional commitment, as it was argued that pharmacists were committed to CPD not as an end in itself, but as a means to maintain their commitment to pharmacy[32]. This often took the form of workshops and conferences with females and ethnic-minority pharmacists far more likely to engage in CPD[32]. Again the cross-sectional nature reduces the strength of inference that may be made from these findings. Unfortunately, these were the only studies to date that had tackled commitment in the GB pharmacy context. Whilst the pharmacy context in the UK and US were not directly similar, although both had more liberal ownership regulations then continental Europe[44], work-related commitment research in US pharmacy to date has been the main influence of commitment research so far in GB pharmacy.

However, the majority of the pharmacy related commitment research was conducted in the 1990s[15,224-231], with less research having been conducted as recently as in the last decade. This said one such study was a cross-sectional survey study of 447 licensed US pharmacists (42.2% response) in 2003 which found that pharmacists that exhibited high levels of affective commitment were more likely to be willing to promote the profession and feel aligned to the goals of the profession[232]. Some 88% of pharmacists exhibited a more affective (wish to stay) orientated commitment whilst, 77% also reported a more

continuance (need to stay) form of commitment[232]. Finally, 60% of pharmacists also indicated that they experienced a normative (obligation) form of commitment as well[232]. This was one of the very few commitment studies in pharmacy which used the TCM. However, it was limited by its small response rate, lack of representativeness and cross-sectional design. Moreover, in a large scale cross-sectional survey of 2250 licensed pharmacists (46% response) from the US in 2008 found that role stress and work-home conflict appeared to directly affect turnover intentions without the influence of job-stress or career commitment[233]. Conversely, US Pharmacists with positive interpersonal relationships with management and colleagues exhibited greater commitment and job-satisfaction and lower turnover intentions[233]. This study used affective commitment to represent both organisational and professional commitments. The study also used a cross-sectional design and the data may have been prone to common method bias.

Another more recent cross-sectional survey study of 294 older aged pharmacists (30.2% response) from the USA in 2010 found that those whom exhibited affective-organisational commitment, and to a lesser extent normative-organisational commitment, were more likely to engage in phased retirement within the organisation or stay on full-time, whilst those pharmacists which exhibited a greater affective-professional commitment, and to a lesser extent normative-professional commitment, did not[179]. The retirement intentions of those whom were more organisationally focused were predicted more strongly by organisational commitment rather than occupational facets of commitment. This study also adopted the TCM in examining work related commitment. However, there were other limitations such as the small response rate and highly specific research sample which restricted generalisability. Also the small response rate also introduced the potential for bias. Finally, in a different very recent cross-sectional survey study of 566 pharmacists (30.2%) from the USA in 2012 found that high demanding and unpleasant encounters contributed negatively to a pharmacist's affective-organisational commitment and continuance-organisational commitment whilst, low demanding and unpleasant encounters contributed negatively to a pharmacist's professional commitment[234]. The study also found that normative commitment had the smallest influence of the three organisational commitment variables. However, whilst the TCM was used for organisational commitment, it was not utilised for professional commitment. There were a number of further limitations,

which included the low response rate, and cross-sectional design, which reduced the generalisability and reliability of the findings.

Therefore to summarise, almost all of the research (except two studies mentioned above) have been carried out in the US pharmacy context and so may be argued to not fully translate to the GB community-pharmacy context[44]. Furthermore, even the very limited number of commitment studies in pharmacy which have used the TCM, have illustrated its importance in examining and more fully appreciating the nuances and complexities at play in pharmacy workforce behaviours; which may not be captured by examining affective commitment only[41].

3.7   Conclusion

This chapter has provided a brief overview of the field of work related commitment and has presented the TCM as a viable model of commitment to use in this programme of research (see sections 3.2 to 3.4). It has evidenced by referring to the research literature, in section 3.5, the added benefit of the TCM beyond that of affective commitment alone. It is argued that the limitations of the vast majority of the studies, from section 3.5, using cross-sectional designs, having sampling issues and being prone to common method variance have been mitigated by the consistency, in a number of studies, of the differentiated effects of the different TCM facets on the antecedents and outcomes being examined. Particularly there is strong evidence to suggest that the different facets of the TCM influences variedly, and reciprocally, and are influenced variedly by a number of the workforce behaviour constructs which were evidenced in chapter two, to be of significance in community-pharmacy in GB, namely work-performance (both in-role and extra-role), and withdrawal behaviours. Therefore the TCM may be argued strongly, to be sufficiently important to understand further in community-pharmacy, if greater and more holistic understandings of the dynamics of work-performance behaviour and withdrawal behaviours' inter-relationships are to be achieved in this sector. From section 3.6, Initial studies with pharmacists have illustrated the fruitful nature of the TCM in the USA, yet no studies have assessed work-related commitment using the TCM in GB pharmacists, to date.

The following chapter will explain the choice of outcome measures which include work-performance behaviour and withdrawal behaviours in greater detail, and the theoretical underpinning of the Theory of Planned Behaviour which will act as the framework to explain how work-related commitment and outcome constructs influence and relate to each other. The following chapter shall also introduce the research questions and set out the methodological and analytical philosophy that will be followed in this programme of research.

Chapter 4: Outcome behaviours and research model plan

4.1   Introduction

Chapter two established that community-pharmacists' job-roles were now increasing in terms of variety and demand, yet often this was accommodated within the pre-existing timeframe and resources. The chapter also demonstrated that alternative modes of working such as locum and part-time working were increasing in their prevalence, along with a sizable appetite for withdrawing in some way from their current practice of pharmacy, from either a reduction-in-hours to leaving the profession of pharmacy completely. Chapter three demonstrated likewise how an individual's professional commitment and organisational commitment examined through the three component model of commitment (TCM) was found to have influenced facets of individuals' job-role performance and withdrawal intentions, in other contexts.

This chapter explores these outcomes of commitment further and is split into three main sections. The first section provides a brief examination of these outcomes, work (job) performance (i.e. in-role and extra-role behaviour) and withdrawal behaviour, which have been shown to be of potentially great significance to the on-going smooth operation of community-pharmacy in GB (see Chapter two). It shall also explain further the reasoning around these choices of outcome variables, highlighting some of the more widely used examples of the concepts. In the second section some of the key links between work-related commitments with outcome variables of interest shall be commented on in relation to what has been empirically evidenced in non-pharmacy workforce contexts and how it may relate to the current theory. It represents a culmination of the last three chapter in which the salient facets of the community-pharmacy literature have been highlighted (Chapter two) and then matched to the relevant work-related commitment literature (Chapter three) in order to identify appropriate outcome variables, which will be brought together to illustrate how they all fit within the nomological network (present chapter). This section will conclude by establishing the research questions from which the aims and hypotheses have been developed to be tested using the research model illustrated in Fig 4.1.

The final section details briefly the rationale behind the research methodology and how it was chosen. It provides a detailed description of the specific objectives of each of the two stages of this programme of research.

4.2 Work-Performance

Motowidlo in 2003, defined job performance as *"the total expected value to the organization of the discrete behavioural episodes that an individual carries out over a standard period of time."* (pp. 39)[235]. Performance therefore refers to behaviours carried out by an individual that are perceived to contribute to the effectiveness of the individual's place of work, aggregated over a period of time and in conjunction with other co-workers, where applicable[235,236]. It has often been subdivided into a number of dimensions in a variety of elaborate and engaging taxonomies[235] such as the relatively recent Campbell's Multi-Factor Model[237] which consists of eight categories (specific task competence, non-specific task competence, communication, effort expenditure, self-discipline, supporting colleagues, supervision, and administration/management) all of which did not need to be present in all jobs. Equally, another such well-established classification, split work-performance into two broad categories of in-role (e.g. prescribed tasks and activities of the job-role) and discretionary extra-role behaviour (e.g. engagement in entirely discretionary behaviour for the benefit of the workplace goals and objectives)[238].

More recently, others have also built upon the in-role and extra-role behaviour taxonomy and suggested amended classifications which include task performance (i.e. the activities that often constitute a job description, etc.) and contextual performance (e.g. discretionary behaviours, such that may positively or negatively influence others, engagement in highly positive or negative work-related behaviours, and behaviour related to the conservation or destruction of work-place resources)[239]. The latter was further split into five sub-factors, which consisted of eagerness to engage in discretionary behaviour, ensuring that activities are completed at all costs, being a team player, obeying rules and regulations even when personally disadvantageous, and protecting and promoting organisational interests[239]. This was further modified by Coleman and Borman[240] and then Borman et al.[241] whom after a substantial re-examination advocated a three sub-factor representation of contextual performance,

which comprised of personal support (i.e. positively influencing co-workers through all means in order to further workplace objectives), organisational support (i.e. protecting workplace interests and promoting workplace aims and objectives) and conscientious initiatives (i.e. willingness to adapt to changes for the benefit of the organisation even where inconvenient to do so)[241].

Along with in-role behaviour Organ and colleagues have similarly developed a widely recognised taxonomy of extra-role behaviours, which have been labelled organisational citizenship behaviours (OCBs)[242-244]. Two forms of OCB were originally identified, altruism (i.e. supporting workplace colleagues) and generalised compliance (i.e. internalising the workplaces rules, regulations and procedures, and therefore adhering steadfastly to all rules even when not observed). Following this OCB's were defined as discretionary behaviours that were not recompensed explicitly or recognised formally in the workplace remuneration structure[243,244]. However, the accumulated effects of these behaviours over a period of time, would promote workplace effectiveness[243,244]. Organ then put forward five forms of OCB, conscientiousness (i.e. going beyond what is required at own discretion, being a good citizen), altruism (i.e. supporting other workplace colleagues), civic virtue (i.e. engaging in the civic and community life of the workplace as citizen), sportsmanship (i.e. accepting personal inconvenience and unfavourable circumstances for the benefit of the workplace), and courtesy (i.e. troubleshooting potential problems concerning workplace colleagues)[243, 244].

Additionally, Podsakoff in 2000 found seven types of OCB which included helping behaviour (i.e. supporting other workplace co-workers), sportsmanship (i.e. accepting personal inconvenience and unfavourable circumstances for the benefit of the workplace), organisational loyalty (i.e. protecting and promoting the workplace's interests and objectives), organisational compliance (i.e. internalising the workplaces rules, regulations and procedures, and therefore adhering steadfastly to all rules even when not observed), individual initiative (i.e. going far beyond what is required at own discretion, being a good citizen), civic virtue (i.e. engage in the civic and community life of the workplace as citizen), and self-development (i.e. keeping up-to-date with the latest knowledge, skills and abilities)[245]. This said, Podsakoff et al. still found Organ's OCB[243,244] taxonomy to be the most widely used combination of OCBs categories out of 30 that were identified within the literature[245].

However, a subsequent refinement of the definitions advocated that OCBs represented an individual's inclination to support co-workers and meaningfully cooperate to maintain the workplace status-quo[236], aligning it further with contextual performance[235]. Similarly Williams and Anderson simplified the myriad of extra-role behaviour dimensions into two, organisational-citizenship behaviour towards the organisation (i.e. behaviours which benefit the workplace as a whole) and organisational-citizenship behaviours towards the individuals (i.e. behaviours which benefit the individual workplace colleagues)[246]. Individual orientated OCB may be viewed as encompassing such OCB categories as altruism and courtesy[243,244, 246], whilst organisation orientated OCB may be viewed as encompassing OCB categories such as sportsmanship, civic virtue and conscientiousness[243,244,246]. Therefore, William and Anderson's OCB towards the individual and OCB towards the organisation were used to represent the extra-role behaviour, which together with in-role behaviour, constituted work-performance in this programme of research, as it was a flexible option, which was well established and enduring in the literature[246].

4.2.1   In-role behaviour in the community context

An individual's engagement in in-role behaviours may be viewed as a subset of work-performance behaviour[235]. This may constitute the typical stipulations of the individual's job-description[235]. In relation to the community sector this may be typical behaviours which pharmacists perform to maintain practice in a pharmacy; and may be stipulated within an employment contract between the individual and the pharmacy workplace [166]. These may also be routine behaviours which could be generic between organisations (e.g. dispensing, stock control, managing staff, etc.) or specific to particular organisations (e.g. adherence to organisational procedures such as ordering from specific suppliers, etc.).

In-role behaviours have been included in this programme of research due to the expansion in recent years of the community-pharmacists' workload and role (see chapter 2). Therefore, it was viewed as important to ascertain those aspects of community-pharmacy that were deemed by the pharmacists to be 'in-role', and whether

there were any differences perceived by pharmacists between those who practiced in large-multiples and those who practiced in small pharmacy organisations. Another dichotomous pairing of importance in relation to in-role behaviours was between those community-pharmacists who were practicing as locums and those practicing as non-locums[63].

More importantly, it was viewed as important to see whether the combination of forms (i.e. affective, normative & continuance) and targets (i.e. organisation and profession) of commitment, community-pharmacists held, had any significant influence on their perceptions and performance of the in-role behaviour. By understanding the role of the different forms of commitment in relation to the different targets, relevant stakeholders would be able to deduce which forms of commitment were beneficial to in-role behaviour and therefore worth promoting through human resource interventions[41,247]. Equally it was observed as important to identify which combinations, if any, were found to be detrimental to the performance of in-role behaviour[248].

4.2.2 Extra-role behaviour (ERB) in the community context

Discretionary extra-role behaviours may be argued to be behaviours which are in the gift of the individual, and for which the individual will not receive any direct recompense from any explicitly recognised reward system and cannot be compelled to perform as a part of the individual's job-role or description [243,244]. In this context, extra-role behaviour may include joining non-compulsory professional associations and relevant local committees, mentoring and coaching new members of the profession, participating in professional surveys and research, lobbying on behalf of the profession, keeping updated with the profession's governance, engaging in non-compulsory continuing-professional-development, attending conferences and other professional networking events, serving on professional and organisational bodies, organising professional and organisational meetings etc.

The degree of discretion was deemed of particular salience as this was a period that had seen significant change in the community sector (see chapter two). In such circumstances it had been highlighted that a committed workforce was important if such

change was to be negotiated safely[10,161,249]. Moreover, enhanced engagement in extra-role behaviours was argued, from evidence found in other professional contexts, to increase peer support between pharmacists and their colleagues, elevate levels of support for line-managers, greater conservation and accurate targeting of valuable resources, better peer co-ordination of activities, more appealing workplaces, more consistent organisational performance, all of which had been found to boost a workplace's adaptation to change[245,250]. In addition to this, the average pharmacist is contracted for 33 hours whilst the average pharmacist actually works 37 hours[50]. Therefore here citizenship behaviour of a type appeared to play a key role in contributing the required hours to complete duties[50].

Hence, it was viewed as imperative to see which of the combinations of forms (i.e. affective, normative & continuance) and targets (i.e. organisation and profession) of commitment, a community-pharmacist held, would have any significant influence on their perceptions and performance of the 'extra-role' behaviours. The inclusion of this and the 'in-role' outcome could have also demonstrated, to what extent different types of services as detailed in the community-pharmacy contract[251] may have been incorporated into the perceptions of the in-role and which services were still deemed to be extra-role.

4.2.3   Measurement issues of In-role and Extra-role behaviour

There is mixed opinion about whether supervisors or self-report rating measures should be used for job performance, with traditional measures being rated predominantly by supervisors[252]. However, others point out that OCB performance has been found to have become confused with good leader-membership exchange[253], whilst some behaviours may only be known to the individual such as obeying rules even when no one can see[252], or else supervisors rating is effected by bias or halo effects[254,255]. Equally others have suggested that supervisors may fail to observe extra-role behaviours, particularly where there is only occasional or fleeting contact between the individual and the supervisor[252, 256]. The latter level of contact is often the case in community-pharmacy where often pharmacists are isolated and seldom come into contact with their supervisors. This would not allow the consistent level of observation

over a period of time required to rate such measures[252]. Additionally, where supervisors have adequate exposure to the individual, the individual may be disinclined to participate owing to the breach of anonymity required to pair an individual with his/her corresponding supervisors, thereby reducing and potentially distorting the respondent sample[257]. Therefore, work-performance, in the form of in-role and extra-role behaviour is well suited for this research programme using self-report scales for measurement.

4.3   Withdrawal Behaviours

Withdrawal behaviours have been investigated considerably in relation to TCM as is clear from chapter 3 and previous meta-analytic reviews[26,38]. A number of withdrawal behaviours have been identified ranging from withdrawal from the profession/occupation and organisation, to a reduction-in-hours worked and effort spent[26,38,248]. Whilst there may be argued to be two forms of voluntary turnover[258], one when the individual is dissatisfied with the workplace and withdraws labour[258] and the other when the pharmacy organisation is dissatisfied consistently, with the individual's performance, attendance, etc., and withdraws employment opportunities[258], it is individual's volitional behaviour which is salient to the present research programme. Mostly withdrawal has been viewed as negative, i.e. the loss of a valued employee[126-128,258], within the literature.

Evidenced from non-pharmacy workforce contexts, one of the strongest predictors of withdrawal behaviour was found to be intentions to quit/leave[258,259]. This was the perceived estimation of their own likelihood of permanently terminating their employment with an organisation at an undetermined point in the near future[258]. Job search had been viewed as another strong predictor of withdrawal, even more so than attitudinal, perceptual, affective and intention measures[258]. Equally, the intentions to withdraw behaviour within a specified time-frame were also seen as important factors within withdrawal behaviour[126-128,173]. Mobley in a seminal paper highlighted the key roles that each of the aforementioned factors played in his model of withdrawal which illustrated the process of withdrawal from initial evaluation and dissatisfaction with the job to eventual actual turnover[260]. Taken together all of these had the potential to create

a loss to an organisation (i.e. including community-pharmacy organisations) which could have included revenue loss, extra payments to outside staff (e.g. locums) or overtime, down-turn of performance, and additional cost of withdrawal, such as absenteeism[248]. It is argued, from evidence taken from non-pharmacy workforce contexts, such loss may become all the more likely, depending on how employee pharmacists react to the significant upheavals and changes[161,249] that have been experienced in the community sector; coupled with other socio-cultural changes that have been highlighted earlier in chapter 2. Therefore, the following variants of withdrawal behaviours were selected for the purposes of this research programme: Professional-withdrawal behaviour, organisational-withdrawal behaviour, sector-withdrawal behaviour and reduction-in-hours withdrawal behaviour.

The inclusion of professional-withdrawal behaviours is related to findings such as the significant percentage (12.8%) of community-pharmacists that were established to be actively considering leaving the profession within two years[48]. Pharmacists experiencing high work-life conflict were more likely to intend to leave the profession[63]. Organisational-withdrawal behaviours, was included due to the cost, and upheaval that the withdrawal of a community-pharmacists would have had on the workplace, other employees workloads, and the public[79, 153]. One reason for this is that 38% of pharmacists in 2004 expected to change their organisation within five years[63]. The greatest numbers of community sector vacancies are in large-multiples community-pharmacies in 2004[50], with around 54% of community-pharmacists already practicing in these pharmacy organisations in 2008[48]. In addition, Pharmacists practicing in large-multiple pharmacies perceive less control over their work and a lower likelihood of opportunities for personal growth[63]. However, large-multiple community-pharmacists viewed themselves as some of the most employable members of the profession, with plenty of choices for employment open to them[63,69,261]. Also organisational commitment appeared to moderate the relationship with withdrawal from the sector.

The inclusion of withdrawal from the sector is related to the findings in 2005 which highlighted that 14% of community-pharmacists were actively considering leaving their sector of work[49]. Over 67% of pharmacists have worked in more than one sector, with independents (41%) followed by small-chain community-pharmacists (35%) most disposed to do so[50]. Possible reasons for this may include the growth of large-multiples

and supermarket pharmacies which have reported to have had an adverse impact on independent community-pharmacies and the intentions to stay of community-pharmacists in the sector[50]. Also, again pharmacists practicing in large-multiple pharmacies perceive themselves to be the most employable pharmacists of any sector feeling that they can easily find alternative employment[69]. However, high levels of commitment tend to reduce the desire to leave the sector[63]. This would have profound implications for the largest sector of pharmacy in the UK[262], particularly owing to the rising workload in this sector, as described in section 2.4, relating to the CPCF[251], the regulation regarding responsible pharmacists[92] and the increasing volume of dispensing[263].

The inclusion of reducing hours of work, is related to the concerning findings which suggested, year on year, that a significant proportion of community-pharmacists had made it clear that they were considering reducing their hours of work[50]. Indeed in 2005, 26% of community-pharmacists were actively considering reducing their hours of work. Others had found that 45% of pharmacists intended to cut their hours, which was three times the number who were intending to increase their hours[63], whilst, over half of pharmacist had had or were intending to take a career break for six months or longer[63]. In addition, female pharmacists constitute the majority of community-pharmacists as well as pharmacy students[49,60,262]. More female community-pharmacists opted for reduced hours of work then male community-pharmacists, with such working practices consisting of approximately a third of all community-pharmacists [63,264]. Added to this, the importance of work-life balance for younger pharmacists may have an impact on the willingness of them to commit greater numbers of hours to practice[69], whilst around 40% of all pharmacists experienced conflict between their home and work responsibilities[32]. This all comes at a time in which, the workload (section 2.7) and indeed the work roles are expanding and diversifying[31,60,62,76,77], which in turn, could create a shortfall between the hours worked and the demands of the workload[50,63,78,264]. Indeed even in 2004 it was suggested that to maintain demand and meet future demand community-pharmacists would have to increase their average hours of actual practice[50].

Therefore taken together, it was viewed as important to establish which of the combinations of forms (i.e. affective normative & continuance) and targets (i.e.

organisation and profession) of commitment that may be of benefit to the retention of community-pharmacists in their profession, organisation, sector and have significant influence on a community-pharmacist's decision to reduce their hours of work. Such information could then be used in future workforce planning models as well as organisational human resources interventions and policy shifts, to boost those forms of commitment that may be of benefit in community-pharmacy[41,261].

4.4   Theoretical relationships between Commitment and Outcome Behaviours

According to the model (see Fig. 4.1), commitment is not only viewed in terms of its different types/forms (i.e. affective, continuance, normative) or its targets (i.e. profession and targets), but also as a combination of the two[10,161-163,175]. It was hypothesised, for example, that individuals with affective commitment and normative commitment are more likely to actively participate with the commitment target and indeed are more agreeable to performing behaviours which go beyond the minimum stipulations of the target[10,19,161-163,175]. However, individuals with continuance commitment are not so motivated and therefore the probability of engaging in extra-role behaviour was minimal[10,19,41,161-163,175]. This said, in relation to extra-role behaviour the relative strengths of these relationships would have been accentuated, with an increase in the level of affective commitment in these behaviours followed similarly by normative commitment[38,41,265]. Affective commitment facet would have been related with the most wide ranging behaviour (active participation and productivity), whilst both normative and continuous commitment facets would have been more narrowly manifested behaviours (e.g. in pharmacy this may be dispensing, etc.)[38,41,162, 163]. In addition, when the outcome focus of the behaviour was quite specific such as organisational-withdrawal, the pharmacist would have still retained latitude in terms of the way that the behaviour was performed[266]. If the focus of the commitment was at the organisation[41,122], the individual would have still had latitude in terms of the effort exerted, productivity, attending meetings, absenteeism, etc.[41,122].
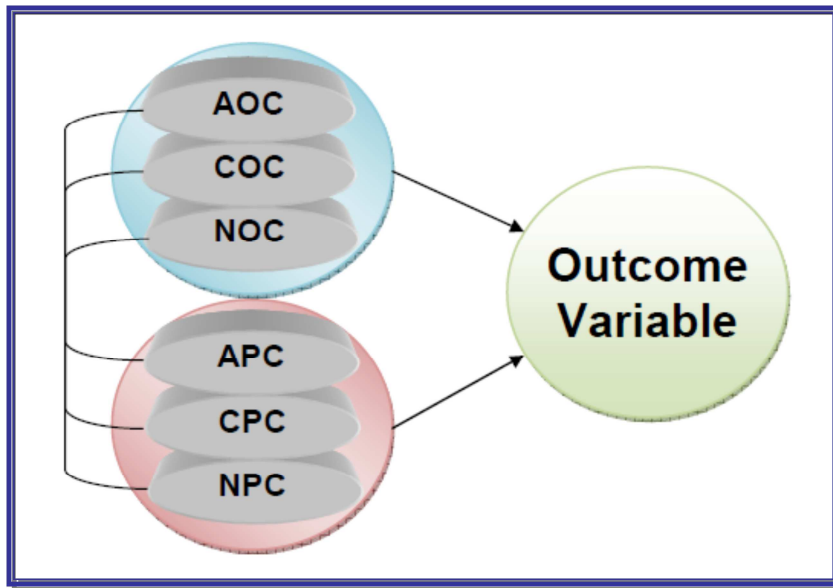
Figure 4.1 Proposed research model
(Note: See list of abbreviations)

The Theory of Reasoned Action (TRA)[135], illustrated that the intentions to perform a behaviour was the immediate determinant prior to behavioural action[117-119,259,267-270]. Intentions to perform a behaviour was determined by attitudes (both positive and negative assessments of the behaviour as well as its consequences, as a function of the person's belief) towards performing that behaviour, and the individual's subjective norms (perceived social pressures to perform or not, as well as the individual's motivation to comply, as a function of the person's beliefs) regarding the behaviour[135,267]. However, whilst the TRA (attitudes towards behaviour) most accurately predicted intentions, it was the actual different commitment facets (i.e. affective commitment, normative commitment and continuance commitment) that predicted actual behaviour[267]. One reason for this result could have been that the TRA did not have an affective-emotion component, making it less effective when having to assess prospective affect[271]. However, the different facets of commitment do not suffer from this drawback[267]. Therefore it was advocated to be used in examining extra-role behaviours [266]. As a successor to the TRA, the theory of planned behaviour (TPB)[270] was depicted in Fig 4.2, and has been used increasingly with success in the occupational behaviour research[272]. It stated that the closest predictors to behaviour could have been viewed as the actual intentions to perform the said behaviour, as well as the perception of behavioural control, which both directly and indirectly fed into the intentions[270,272,273]. These were further tempered by attitudes relating to the beliefs

about the behaviour and its consequences, along with the influences of subjective norms consisting of the perceptions of an appropriate referent evaluation, coupled with realistic personal compliance of the evaluation[270,272]. Hence as shown in Fig. 4.2, all three core elements (perceived behavioural control, attitudes & subjective norms) have been proposed to predict intention and actual behaviour[118,120,259,270,272]. Indeed a recent meta-analysis suggested that TPB correlated at 0.6 with intentions and at 0.5 with behaviours, rendering its predictive prowess fairly robust[119].
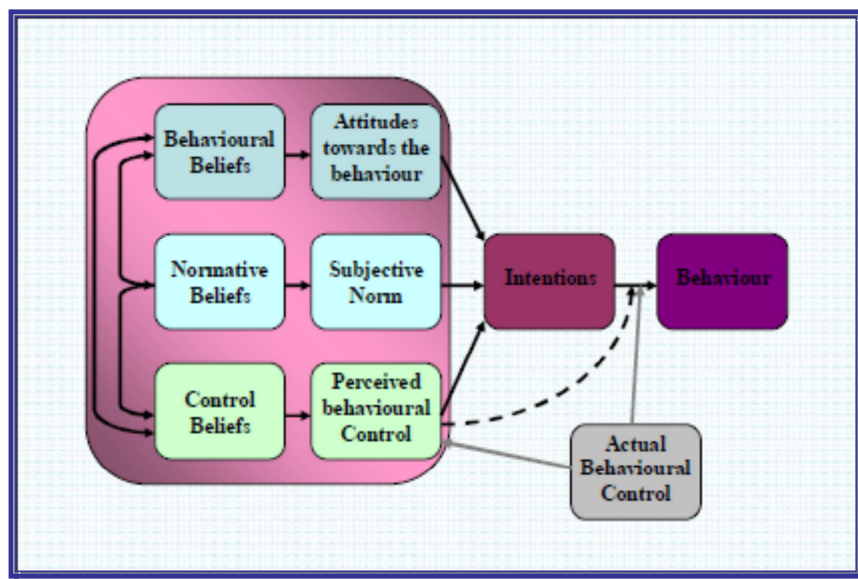
Figure 4. 2 Schematic representation of the Theory of Planned Behaviour reproduced from

A closer inspection illustrated how the TPB could be used to explain the influence of commitment[274] and more specifically, the TCM conceptualised by Meyer & colleagues, on the outcome behaviours (see Fig. 4.3)[41,259,272]. The TPB stated that previous occupational decisions were important interactions within the attitude-behaviour efficacy that lead to the creation of side-bets or investments based on these previous decisional outcomes, which bound the individual to the course of action (see Fig. 4.3)[41,272]. In addition, external influences on circumstances (e.g. loss of pension, loss of health insurance, reduction of accustomed lifestyle, etc.), may influence the level of control that the individual experiences over the behaviour[41,272]. Taken together, these are examples of the TCM's continuance commitment components, which may be argued to have influenced the TPB element perceived behavioural control (see Fig. 4.3)[41,160]. The TPB also suggested previous contextually relevant occupational experiences were consistently evaluated with normative beliefs through the social-

exchange[165] to ascertain whether increased reciprocity was required due to a perceived increase in obligations, or a violation of an unmet expectation or promise (see Fig. 4.3)[41,272]. The perception of an imbalance provided the individual with a reason for his/her attitudes whether that was an increase in commitment or not[160]. The sense of obligation or violation of expectations may also be viewed as facets of normative commitment components[41,160] (see chapter 3). The latter may also be argued to have had some bearing on the subsequent motivation to feel that the 'right' thing was done, due to the influences of the normative commitment on the subjective norm (see Fig. 4.3)[41,160]. Finally, affective commitment may also be reasoned to be influential in relation to the attitude element of the TPB (see Fig. 4.3)[41,160,272]. Therefore taken together, the TPB provides a reasoned explanation about how the different facets of the TCM may influence the intended outcome behaviours detailed in sections 4.2 and 4.3. It also illustrates that each of the three facets of the TPB are influenced by each other, as has been theorised in the TCM[41,259,272].
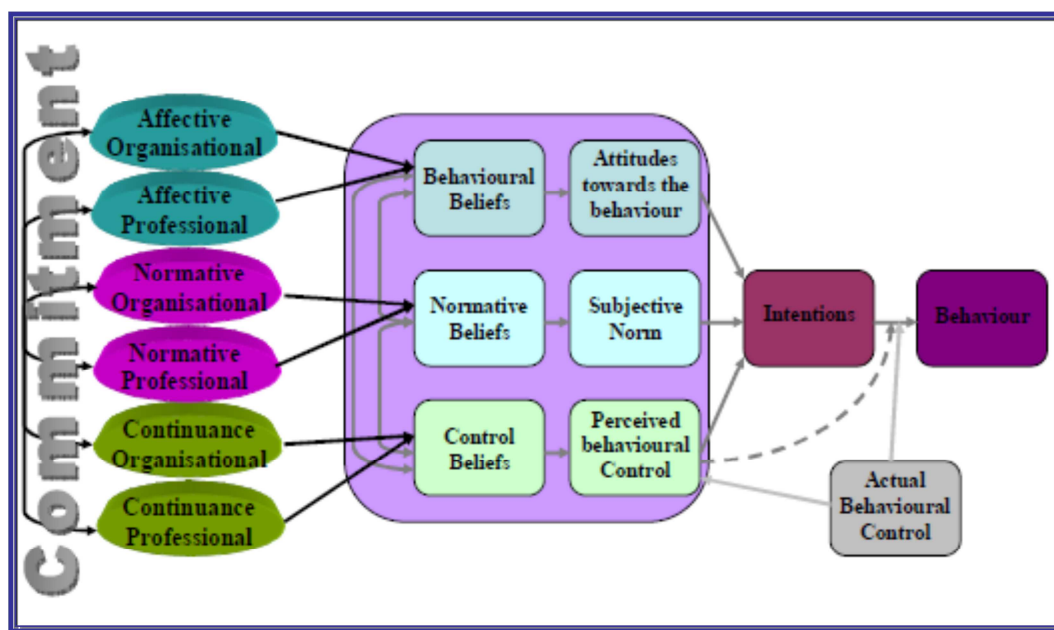
Figure 4.3 Schematic representation of the relationship between commitment and behaviour, reproduced and adapted from Ajzen (1991)

Chapter 3 provided a brief over view of some of the previous empirical research studies, albeit from non-pharmacy professional contexts, that had been conducted in relation to the different facets of the TCM and the aforementioned outcome variables (see sections 4.2 and 4.3). Evidenced from the available literature it has been argued that more than one target of commitment, in this programme of research, the profession and

organisation, may be compatible with each other[38,162,275-277]. In addition there was no evidence to suggest that the commitments towards both targets had to be necessarily of equal strength at all times[162,163]. Indeed, there is evidence to suggest that one target of commitment may be stronger than the other[162,163,276]. Other researchers have argued that the more valued that one target was to another target (e.g. profession is to an organisation, etc.) the stronger the relationship between the two targets of commitment[26,38,162,163,173], with one potentially increasing the level of commitment exhibited in the other[162]. Previous meta-analyses contend that professional commitment appeared to influence the organisational commitment relationship with turnover intentions[20,38]. Previous research found that normative-professional commitment and professional turnover intentions were found to impact on organisational turnover intentions[178]. Similarly, previous research revealed that the relationship between affective-professional commitment and organisational turnover intentions were also influenced by organisational commitment[26,178]. Finally, prior research provided evidence for what appeared to be a reciprocal relationship between professional and organisational commitment[178].

4.5   Main research aims and hypotheses

Following a review of the community-pharmacy literature (chapter 2) and the work-related commitment literature (chapter 3), two main outcome areas were identified as both relevant to community-pharmacy at this time and of significance in work-related commitment research. These two outcome areas were work-performance and withdrawal behaviours (sections 4.2 and 4.3). In addition, the TCM put forward by Meyer and Co. was chosen for the purposes of this programme of research, following a review of the literature (chapter 3). Furthermore, it was also decided that in addition to examining the role of commitment as detailed above, in the community-pharmacy population as a whole, the research programme should also focus on four different but salient subsets of the community-pharmacy population (Chapter 2). Each of these pharmacist subsets had been identified in the literature as being relevant to the wellbeing of community-pharmacy provision within GB, and included locum pharmacists, non-locum pharmacists, independent pharmacists and large-multiple pharmacists (chapter two).

Therefore, as stated in chapter one and drawn from the literature cited in chapters 2, 3 and 4, the main research questions that this research programme answered were:

- Q1:   Does normative-professional commitment and continuous professional commitment add to the understanding of how withdrawal behaviours and work-performance behaviours are explained beyond affective-professional commitment in community-pharmacists in GB?

- Q2:   Does normative-organisational commitment and continuous organisational commitment add to the understanding of how withdrawal behaviours and work-performance behaviours are explained beyond affective-organisational commitment in community-pharmacists in GB?

- Q3:   How do locum community-pharmacists differ from non-locum community-pharmacists in their professional and organisational commitments in GB? How does this affect their withdrawal behaviours and work-performance behaviours?

- Q4:   How do community-pharmacists practicing in independent pharmacies differ from non- community-pharmacists practicing in large-multiple pharmacies in their professional and organisational commitments in GB? How does this affect their withdrawal behaviours and work-performance behaviours?

Therefore in order to answer the above research questions the following aims were completed by this research programme:

- To qualitatively explore the perceptions of the TCM in relation to the profession and organisation, and the perceptions of the work-performance behaviours and withdrawal-behaviours, in community-pharmacists in GB; and how they are perceived to be related to each other.

- To evaluate the construct validity of the professional and organisational TCM measurement scales, the withdrawal behaviour scales and the work-performance scales in community-pharmacists in GB.

- To determine the levels of the different facets of the TCM in relation to the profession and organisation, and the levels of withdrawal behaviours and work-performance behaviours, in community-pharmacy and its subgroups in GB.

- To identify which facets or combinations of facets of the TCM of the profession and organisation are related to withdrawal behaviours and work-performance behaviours in community-pharmacists in GB, as a whole.
- To identify which facets or combinations of facets of the TCM of the profession and organisation are related to withdrawal behaviours and work-performance behaviours in locum, non-locum, Independent/small-chain and large-multiple community-pharmacists in GB.

Based upon the research questions and the subsequent findings of stage 1.1 (see section 6.2), the main hypotheses to be tested in this research programme were:

- HQ1.01   The levels of the TCM facets of the profession will be higher than their corresponding levels of the TCM facets of the organisation in community-pharmacists in GB.
- HQ1.02   Levels of affective and continuance-professional commitment will be higher than normative-professional commitment in community-pharmacists in GB.
- HQ1.03   Affective-professional commitment would have the strongest relationship with extra-role behavior towards the individual followed by normative-professional commitment only, in community-pharmacists in GB.
- HQ1.04   In addition to affective-professional commitment, both normative and continuance-professional commitment would have significant relationships with professional-withdrawal behaviors in community-pharmacists in GB
- HQ1.05   Continuance-professional commitment only, would have a significant relationship with sector-withdrawal behavior in community-pharmacists in GB, in addition to affective-professional commitment.

- HQ2.01   Levels of affective and continuance-organisational commitment will be higher than normative-organisational commitment in community-pharmacists in GB.
- HQ2.02   Affective-organisational commitment would have the strongest relationship with extra-role behaviour towards the organisation

followed by normative-organisational commitment only, in community-pharmacists in GB

- HQ2.03   In addition to affective-organisational commitment, both normative and continuance organizational commitment would significant relationships with organisational-withdrawal behaviour in community-pharmacists in GB

- HQ2.04   Continuance-organisational commitment only, would have a significant relationship with reduction-in-hours withdrawal behaviour in community-pharmacists in GB, in addition to affective organizational commitment.

- HQ3.01   Locum community-pharmacists would have similar levels of affective-professional commitment than non-locums in GB

- HQ3.02   Locum community-pharmacists would have significantly less normative-professional commitment than non-locums in GB

- HQ3.03   Locum community-pharmacists would have lower levels of all facets of organisational commitment than non-locums in GB

- HQ3.04   Locums community-pharmacists would have higher levels of continuance-professional commitment than non-locums in GB

- HQ3.05   None of the TCM facets of the organisation will predict withdrawal behaviours or work-performance behaviours in locums in GB

- HQ3.06   In locum community-pharmacists, affective and continuance-professional commitment would predict professional-withdrawal behaviour similarly, in GB

- HQ3.07   Affective-professional commitment more likely to predict extra-role behaviour towards the individual than the organisation in locum community-pharmacists in GB

- HQ3.08   Affective-organisational commitment is more likely to predict extra-role behaviour towards the organisation in non-locum pharmacists in GB than affective-professional commitment.

- HQ4.01 Independent/small-chain community-pharmacists would have significantly higher levels of affective, normative and continuance-organisational commitment than large-multiple pharmacists in GB

- HQ4.02 Both Independent/small-chain and large-multiple pharmacists would have similar levels of affective and normative in GB

- HQ4.03 Independent/small-chain community-pharmacists would have significantly higher levels of continuance-professional commitment than large-multiple pharmacists.

- HQ4.04 A stronger relationship between affective-professional commitment and professional-withdrawal behaviour in Independent/small-chain compared to large-multiple pharmacists.

- HQ4.05 A stronger relationship between affective-organisational commitment and organisational and sector-withdrawal behaviour in Independent/small-chain compared to large-multiple pharmacists.

- HQ4.06 In Independent/small-chain pharmacists, affective and normative-organisational commitment along with affective-professional commitment would have similar influences on the work-performance behaviours, which would be stronger than those in large-multiple pharmacists.

4.6 Rationale for methodology

Quantitative and qualitative approaches dominate the methodologies available in the social sciences. The latter approach represents an interpretivist paradigm whilst the former represents a positivist paradigm. The positivist paradigm or empiricism, contends that reality may only be known through direct measurement, objectively by a researcher[278]. From its natural science origin there is an emphasis upon the ability to replicate and verify the measurement of the reality by others[278]. However, where concepts prove intangible and unobservable directly then an operational definition detailing what would be observable to measure the phenomena is elaborated[278,279]. There is also an emphasis upon theory generation and testing whereby hypotheses, which are disprovable, are deduced from theory and subsequently tested on the data collected[278]. Collection of data is made by direct measurement, and is therefore quantifiable, allowing for the use of statistical procedures to seemingly impartially

arrive at a conclusion[278]. If the hypothesised predictions are satisfied then the theory is viewed as supported[278]. Equally support for a theory does not in itself prove the theory, but merely means that the theory was not disproved, as there may be an alternative explanation available, which is unidentified[278, 279]. However, if the hypotheses are not supported then the theory may be modified or abandoned; or the research replicated, to ensure consistency[278].

The interpretivist paradigm, on the other hand, contends that reality is known from a subjective interpretation, appreciation, constitution and experience of reality[280]. Moreover, far from the research being objective and impartial, the researcher is very much a part of the studied object as are the subjects taking part[281], and thereby affects the object of study[280]. Indeed, Banister, et al. has defined the qualitative approach as *"the interpretative study of a specified issue or problem in which the researcher is central to the sense that is made"* (pp.2)[282]. Some suggest that such paradigms are especially adept to engaging in the study of intangible ideas, meanings, experiences, construction, practices and values, exploring at greater depth and richness concepts, than would be possible in far less sensitive, standardised quantitative approaches[280,283]. Moreover the social context influences the generation of data making it more sensitive and responsive to the social context and not rigid and unhelpfully abstracted from the actual context[280]. Analyses also aims to take a holistic approach in which the subtleties, nuances and complexities may be revealed leading to fuller, more rounded explanations than more superficial trends of data that may be achieved in a quantitative approach[280].

Others still have accentuated the complementarity of the two approaches in the development of comprehensive research methodologies, where the advantages of both are properly utilised in order to maximise the benefit of doing so[281,284]. To test the hypotheses laid out above and fulfil the main aims of this research programme, it was felt that such an approach would need to be adopted. Miles and Huberman presented four such designs in which qualitative and quantitative designs linked to each other in different ways[281]. One recommendation for this which potentially complemented the requirements of research programmes was to start off with an exploratory study taking a qualitative form, followed by a survey, the analyses of which were subsequently tested with additional qualitative work[281]. However, instead a variant of the latter approach was used here.

In order to characterise and understand the roles of professional and organisational commitment in relation to the TCM and the outcome constructs, it was felt that an exploratory study should be first utilised. Based upon the aforementioned brief description of such an approach, it was felt that a qualitative approach would be most appropriate for ascertaining the contextual appropriateness of the different forms of commitment, as well as the applicability of the TCM and outcome constructs in this social context[280,285]. This was thought to establish the initial validation of the usability and applicability of the aforementioned TCM and outcome constructs in community-pharmacists in GB (stage 1.1, see appendix 4.1). It was felt that the dynamic interactive nature of focus-group methodology would be appropriate to stimulate and generate the required data[286] (see Chapter six for further details).

The testing of the hypotheses were felt most appropriately examined through the use of survey methodology[287]. However, prior to this it was deemed appropriate to conduct a study to test the construct validity of the measurement scales that would form the basis of the survey. To retain the benefit from the triangulation of methods, construct validity was assessed both qualitatively through the use of cognitive-interviews methodology (see Chapter five for further details) and quantitatively through the survey[284,288,289]. Cognitive-interviews methodology (stage 1.2; see appendix 4.2) provides a qualitative alternative to conventional construct validation and is able to capture information which the traditional forms of validation would be insensitive to identify, through the interpretation, meaningfulness and consistency of item perception[290-294]. As an in-depth structured interview, examining the TCM and outcome constructs, the cognitive-interview had a dual benefit for this programme of research. As the richness of the cognitive-interview and the in depth probing of not only the interpretation of the individual items, which measure the constructs of interest, but also how the participant would have arrived at the answer, would have been assessed[290-294].This would provide another source of qualitative data collection, which could then be analysed alongside the aforementioned focus-group study, as a contingency measure. Therefore, taken together both qualitative studies formed stage one of this research programme and the basis from which to engage in the next stage of the research programme.

The purpose of stage 2 of the research programme was to complete the aims and hypotheses established above (see appendix 4.3 for research objectives). This was done through conducting a large scale survey (see Chapter seven for further details) in which the TCM and the aforementioned outcome constructs were measured alongside demographic variables[278, 287]. As well as hypotheses testing the survey in stage 2 was used as a second test of construct validity of the TCM and the outcome constructs, in order to triangulate the sources of the validity data[284,288,289]. This was also to be achieved by examining the qualitative data of stage 1. It was also felt that the qualitative data of stage 1 would be of benefit when interpreting the findings of stage 2 in terms of both triangulation and complementarity[281,284, 288,289]. In this way an amended version of the complementarity design highlighted by Miles and Huberman was used[281,284,288,289]

4.7   Summary

This chapter presented the outcome measures used in this programme of research and tied up ends of the introduction and literature review to the start of the methodology and analyses. The chapter built upon the presentation of the relevance of these outcomes to community-pharmacy in chapter 2, as well as a snapshot of the research that has been carried out in other contexts and in pharmacy (in the US), related to workplace commitment, chapter 3. This chapter also provided an explanation for how commitment would influence behavioural intentions and likewise why behavioural intentions would influence actual withdrawal behaviours. This chapter also restated the research question and provided detailed hypotheses based upon the previous three chapters and this chapter. A rationale on the methodological approach taken in this research programme was also briefly mentioned. Detailed objectives for each of the three studies that were carried out in the two study stages of this programme of research can be found in Appendices 4.1-3. The next chapter goes much further in providing detailed information about the methodology and analyses used in stage 1 that was used to satisfy the specific objectives (see appendix 4.1 and 4.2), and the primary aims of this programme of research.

5. Chapter 5 Stage 1: Methodology and Analyses

5.1. Introduction

The previous chapter provided a rationale for exploring and understanding the relationships, based on the preceding literature, between the various theoretical constructs being examined and how they may fit within a nomological network[295]. From this the chapter then extrapolated from the research questions, a series of hypotheses which were used to formulate the specific aims and individual study objectives of this programme of research. The previous chapter also offered a reasoned appreciation of how the aforementioned aims and objectives were to be met within the proposed research design. This proposed research design split the programme of research into two broad stages, with stage one being qualitative in nature and stage 2 being quantitative in nature (see section 4.7). Finally, the previous chapter further split stage one of this programme of research into two studies, namely stage 1.1 and stage 1.2. (section 4.7).

This chapter elucidates in greater detail the practical application of the research design in achieving the aims and study objectives (see appendix 4.1 and 4.2) that were set out for stage one, in the previous chapter. It will explain the methodological strategy as well as the analytical vision employed for stage one. The chapter is divided into a number of sections with the first few sections (sections 5.2 to sections 5.6) devoted to explaining the varying and complementing methodologies used in stage one of this programme of research. These sections consist of five substantive methodological themes, namely the research sample, recruitment process, data collection, and data management. The second half of the chapter is dedicated to elaborating on the analyses that are used in stage one of this programme of research.

5.2. Sampling Procedure

5.2.1. Sampling Frame

Community-pharmacists practicing in Great Britain (GB) were recruited for the purposes of these studies as they represent the largest sector in the pharmacy

profession[296]. Research has suggested that it has undergone significant changes in recent years, and has been found to be a sector in which pharmacists are more likely to engage in withdrawal behaviours[78] (see Chapter two).

5.2.2. Sampling Strategy

In both stages 1.1 and 1.2, stratified purposive selection sampling (i.e. identifying and including groups which are typical and untypical within the sampling frame, etc.)[281,297] was used to arrive at an initial representative sample[280] identified through the Register of Practicing Pharmacists formerly maintained by the Royal Pharmaceutical Society of Great Britain (in accordance with its relevant protocols). For logistical and feasibility purposes, the sample was restricted to practicing community-pharmacists that adhere to the inclusion/exclusion criteria (see Table 5.1). From here, a combination of further purposive[281, 297], snowballing (i.e. identifying appropriate participants through networking, etc.)[281,297] and opportunistic techniques (i.e. pursuing avenues of potential interest, etc.)[281,297] were used when required.

5.2.3. Sample size rules of thumb

In qualitative research methods such as those in stage one, previous research suggested that sample size could be reasonably small as the aim of the sample was not the same as in quantitative methods whereby inferential estimates needed a sufficiently large sample size[280, 281,289,297-299]. Rather it was to be able to analyse all the data sufficiently well with equal levels of intensity and commitment that may be unmanageable in larger samples[280,281,297-299]. Equally, its composition and recruitment is very much dependent upon the research objective[281,297-299]. For stage 1.1, with the use of focus-group methodology (see section 7.2.3.1) the sample sizes in the previous literature have been found to range from 3-5 participants per focus-group[286,298,300], 6[301] to 9-12 participants[298,302,303]. Anything above twelve participants in a focus-group was found in previous research to increasingly risk de-facto problematic sub-group discussion taking place[298]. Therefore the aim of the recruitment was to achieve a minimum of four to six participants per focus-groups. The number of focus-groups to be conducted depended upon the analysis of the preliminary focus-groups, however previous research and guidance suggested that a minimum of two[304,305] to three[286,306,307] focus-groups were needed to be completed. Therefore a minimum of three focus-groups were originally

planned to be conducted. For stage 1.2 with the use of cognitive-interview methodology (see section 7.2.3.2) sample sizes in the literature have ranged from a minimum of 5-10[290,302,308-310] to 20[290,311,312] and upwards of 50[309]. This said sample size depended very much upon the sample characteristics and also the initial analysis of the completed interviews[292,313].

Table 5. 1 Research sample inclusion and exclusion criteria for stage 1

	Criteria
Inclusion Criteria	Community-pharmacist *(Largest Pharmacists Sector)*
	Registered to practice in GB *(only GB based pharmacists have experienced the nuances of community-pharmacy in GB which may differ from other pharmacy contexts overseas)*
	Practicing *(to elicit actual current Community-pharmacists' experiences)*
	North of England locale *(logistical requirement for group sessions and interviews)*
Exclusion Criteria	Retired *(no longer a Community-pharmacist)*
	Pre-reg pharmacists *(not fully fledged Community-pharmacists)*
	Pharmacy students *(not fully fledged Community-pharmacists)*
	Not practicing in GB *(only GB based pharmacists shall have experienced the nuances of community-pharmacy in GB which may differ from other pharmacy contexts overseas)*
	Not a *Community-pharmacist (only Community-pharmacists experience the nuances of community-pharmacy which may differ from other pharmacy contexts)*

5.3. Recruitment procedure

5.3.1. Recruitment promotional work

A research blog www.blogs.mhs.manchester.ac.uk/pharmacommitphd (Appendix 5.1) was setup, which was dedicated to the overall PhD research project. It detailed each stage of the PhD research and followed the research process as it unfolded. Contact details were available for Pharmacists who wished to know more about the individual

study stages. Short informal talks/presentation were also given during the recruitment period about the overall PhD and research area, at meetings of pharmacists that were regularly organised at the local level (e.g. formerly local branches of the RPSGB, Local Pharmaceutical Committees, Local Practice Forums, etc.).

5.3.2. Recruitment process

In Stage 1 invitations for participation in both stage 1.1 and stage 1.2 studies, were sent out to an initial batch of 25 prospective participants in late November 2009, followed by a second batch of 25 prospective participants in early January 2010. Each batch of invitation packs contained a Stage 1.1 participant's pack containing an invitation letter (Appendix 5.2) introducing the study and its intentions and objectives, a participant's information sheet (Appendix 5.3), a consent form (Appendix 5.4), as well as a Stage 1.2 participant's pack containing an invitation letter (Appendix 5.5), participant's information sheet (Appendix 5.6), a consent form (Appendix 5.7) and a prepaid envelope. After two weeks reminder letters (Appendix 5.8 and Appendix 5.9) were also sent. After four weeks a further set of reminders were sent with additional Stage 1.1 and Stage 1.2 participant's packs. After five weeks, snowballing and opportunistic sampling techniques were employed in order to contact and recruit further participants. Those participants who agreed to participate were sent confirmation letters (Appendix 5.10 and Appendix 5.11). Thank you acknowledgements (Appendix 5.12 and 5.13) were sent to participants by their preferred method of contact.

Of the 50 prospective participants, eight confirmed their attendance to the first focus-group in Manchester, but only four participated on the day. The second focus-group was cancelled owing to only one participant actually attending from five confirmed attenders. A further 50 invitations were sent in February, March and April 2010 for focus-groups in March to May 2010, which again elicited poor responses with only one or two participants able to commit to the available dates. Unsuccessful efforts were made to accommodate the small number of willing participants in the same focus-group. Therefore, opportunistic sampling via contacting local RPSGB branches in the North of England yielded a second focus-group conducted in May 2010 in Doncaster, with seven community-pharmacists.

Owing to the significant difficulties experienced in recruiting for focus-groups, data from cognitive-interviews were used to further supplement the findings of the focus-groups[280, 282, 284, 286, 289, 297, 307, 314-317]. Fortunately the cognitive-interviews were examining the items of the measurement scales of the constructs of interest and therefore provided a detailed narrative about the understanding and contextual appropriateness of the constructs (see section 5.5) in community-pharmacy. By the end of October 2010, 21 cognitive-interviews had been conducted using a combination of community-pharmacists recruited through the sent invitations and snowballing techniques to reach consistency and saturation. A week before each of the cognitive-interviews, a copy of the survey containing the measurement items was sent to each of the participants to be completed prior to the cognitive-interview (see section 5.5) and then used during the cognitive-interview (Appendix 5.14).

5.4. Respondent sample

In total the number of community-pharmacists that participated in stage 1 altogether was 32. As illustrated by Table 5.2, this sample of community-pharmacists may be viewed as broadly representative in terms of gender, ethnicity, locum and part-time working whilst less so in relation to size of community-pharmacy organisation in which the participants practice and tenure of practice[47,78].

5.5. Data Collection in stage 1.1: focus-groups

5.5.1. Introduction

Also known as a "group-interview"[286] this methodology allowed for a more holistic understanding and characterisation of the nature of commitment in community-pharmacy [303]. This is because it relied on a dynamic group interaction between a group of individuals to generate and stimulate discussion focused on a particular topic[286], in order to elicit insightful and qualitatively meaningful data that may have been difficult to replicate within the confines of traditional one-on-one interview situations[303]. Focus-groups may be either structured or unstructured dependent upon the research objectives[299]. Where there are particular questions that the researcher would like to have answered then the focus-group may be more structured[299]. However, where the

researcher's objectives are entirely exploratory, then a more unstructured approach may be adopted[299]. In the latter, the focus-group may be used as a creative vessel to generate ideas or new ways of thinking about something[286]. Focus-groups may also be used as the initial phase of a mixed method research process to provide a better understanding of constructs and issues in unfamiliar circumstances[286]. Hence, a focus-group is an extremely adaptable and versatile piece of research methodology which can be shortened, lengthened, span more than one session and adopt a number of different structures, as appropriate for the research context[286].

A key facet of the focus-group is the role of the moderator, who must be both approachable and professional. However, the moderator should also act the novice in that the moderator must not make assumptions, answer the research question, nor ask loaded questions[314]. Instead the moderator should encourage the group to offer the answers, provide a facilitative posture and ensure that the whole of the group is engaging meaningfully in the process at some point[314]. Another important part of the focus-group is planning; this is both in terms of the logistics and organisation of the focus-group's location, material, catering etc. However, it is also important in terms of the content of the focus-group as well, such as what will be the objectives? How will the session be arranged? What will be discussed first? How will one part of the discussion lead to another part? What form of probing question will there be used, etc.[314]. The development of a topic guide (see section 5.5.2) is often useful in managing the content of the focus-group, which can then be planned and standardised particularly if there are to be many focus-groups conducted[314].

However, there were some drawbacks noted by previous researchers in that some salient individual views risk being lost within the general discussion[287]. In addition group dynamics, group think, dominating and loud personalities, social loafers and power-imbalances, may severely distort the balance required to achieve meaningful group discussions[287]. Therefore the researcher underwent training in this methodology, as well as assisting fellow researchers in conducting their focus-groups and participating as a participant in other focus-group research, to gain experience from different vantage points of this methodology and observe best practice in minimising some of the potential aforementioned focus-group concerns.

Table 5. 2 Background of participants of the two stage 1 studies

	Gender		Ethnicity		Time in Community (years)					Locum		Hours		Job Title								Pharmacy Size			
	Male	Female	White	Non white	0-5	6-10	11-20	21-30	31-40	Locum	Non locum	Part-Time	Full-Time	Locum Pharmacist	Branch Pharmacist	Senior Branch Manager	Area Pharmacy Manager	Superintendent	Senior Pharmacy Manager	Independent Contractor	Relief Pharmacist	Independent Pharmacy	Small Multiple Pharmacy	Medium Multiple Pharmacy	Large-multiple Pharmacy
Stage 1.1	6	5	9	2	2	2	5	0	2	4	7	3	8	4	3	1	1	0	1	1	0	0	1	4	6
Stage 1.2	8	13	14	7	2	6	3	4	6	6	15	10	11	6	8	3	1	2	1	0	1	1	1	5	14
Both Stages	14	18	23	9	4	8	8	4	8	10	22	13	19	10	11	4	2	2	2	1	1	1	2	9	20

5.5.2. Procedure

The focus-group sessions were arranged to take place at about four to seven weeks after initial recruitment commenced. The focus-group was structured by the pre-prepared and standardised focus-group topic-guide (Appendix 5.15) and focus-group presentation (Appendix 5.16), which were used to focus the discussion and introduce the concepts to be discussed in the appropriate order[314]. Each group session was audio recorded with permission, so that the researcher was free to concentrate on the discussion, thereby only making minimal notes where required[314]. In all the focus-groups took approximately up to 1.5 hours, excluding a 15 minute break. Mirroring the pre-prepared topic-guide structure (Appendix 5.15), the first section was spent on discussing the types of professional commitment and organisational commitment. The discussions focused on the relevance, development and outcomes of commitment to community-pharmacy in GB. It followed a more relaxed and yet structured focus-group format. A short break afterwards and the second part of the focus-group session continued following the said topic-guide structure (Appendix 5.15), to discuss what community-pharmacists understood as in-role behaviour and extra-role behaviour and withdrawal behaviours. They were also asked to discuss whether there were any differences between the in-role behaviours and extra-role behaviours related to the employing organisation and those related to the profession.

Following the end of the focus-group session, a few participants were asked if they would be amenable to comment on the analyses of the group session. In addition, reflective remarks were made before, during and after the recruitment phases and focus-groups on the researcher's perceptions, and thoughts regarding all aspects of these processes and the participants[281].

5.6. Data collection in stage 1.2: cognitive-interviews

5.6.1. Introduction

A cognitive-interview is a cross between cognitive theory and survey methodology[292-294]. It is a particular type of semi-structured interview which shares a number of traits

with various types of qualitative interviews in terms of the in-depth level of interviewing, amongst other things[291,294]. This said, there is a plethora of techniques that may be used in cognitive-interviewing the communality of which is the verbal reporting of what the respondent is thinking[294,318]. Cognitive-interviews were designed to ascertain the way in which individuals understood, recovered, judged and provided a response to surveys items[319]. Therefore they have been used to pre-test survey items to determine construct and content validity[291,319], through the identification of item level problems[294,309] and pattern of responses[294,320]. Indeed, they are particularly useful at identifying issues relating to the comprehension of lexical and logical problems associated with the items[294,318].

At the interview the thoughts and feelings of the participants were discussed for each of the scale items[290,321]. A 'think out loud' technique was used for this, whereby each participant was asked to say what came into his or her mind and how they arrived at their answer, after each item was read out aloud[49,290,292,294,322]. This process was helped with the use of a variety of probing questions such as: (General probes) How did you go about answering this question?[290,322] (Comprehension probes) What does (phrase in item) mean to you?[290,294,322,323] (Paraphrasing probes) What would you say that question was asking of you?[290,292,294,322-324] (Recall/Judgement probes) What brought that to mind?[290,292,294,322-324] (Confidence judgement probes) How well do you remember this?[290,292,294,322-324] (Spontaneous probes based on listening) Why do you say that?[290,292,294,322-324] Subsequent probing questions will be guided by early responses[290,292,294,322-324]. This form of construct validation has been used in previous research into commitment and is viewed as giving an additional insight, which statistical tests (i.e. psychometric examinations) may not capture[292,294,325]. It also provides a barometer of how meaningful and consistent these interpretations are through its narrative format and rich detail[292,294,320,322,324].

5.6.2. Procedure

The cognitive-interviews were retrospective as the proposed survey items had already been looked at by the interviewees prior to the cognitive-interviews being completed[293]. Participants each received a copy of the survey approximately one week before they were scheduled to be interviewed. In all the interviews took about 1.5 hours

each as each interview (face-to-face & telephone) followed the same cognitive-interview topic-guide (Appendix 5.17). They were arranged to take place at the earliest possible convenience of the individual participant. This also included within the first week of recruitment. Each interview was audio recorded with the participant's consent as this allowed the researcher to pay significantly more focused attention on what the participant was saying as it required less intensive note making. Furthermore, some participants were asked to comment on the outcomes of their interviews for the purposes of validation and accuracy of the cognitive-interview analysis.

5.7. Ethical Issues/Limitations

The actual subject matter in itself was neither obviously distressing nor controversial. However, there was always a remote possibility that participation in the focus-groups or the cognitive-interviews may have provided individuals with insight relating to their own commitments to their profession and their organisations that they may not have been aware of originally. The researcher remained receptive to any query and responded appropriately along with the arrangement of further assistance should the need have arisen by directing the participant to organisations such as Pharmacist Support where required. If the participants were unsure about the research study and their participation in the study they were actively encouraged in the very first paragraph of the participant's information sheets to satisfy themselves prior to participating, by both contacting the researcher and/or others independent of the research. Each participant had the right to withdraw at any time from the research project altogether without having to offer a reason. This was made explicitly clear on the participant's information sheets. No participant requested to be removed from the study.

Both stage 1.1 (ref:09220) and 1.2 (ref:09322) studies achieved ethical clearance having been reviewed by the University of Manchester's Committee on the Ethics of Research on Human Beings.

5.8. Thematic template analysis of group and interview data

The qualitative analysis software NVIVO 8 was used. Transcriptions were made with the help of Express Scribe transcription software and MS Word 2007/2010.

The aim of the analyses here was to assess the contextual appropriateness and applicability of the constructs as outlined in the objectives in chapter 4 and Appendix 4.1. As the major themes were known a priori (e.g. affective-professional commitment, affective-organisational commitment, etc.), the analyses concentrated on identifying themes and trends within the data which provided evidence (or lack of evidence) for the applicability and contextual appropriateness of these constructs and the three component model (TCM) of commitment[41] (see chapter 3) within the community-pharmacy context. Therefore, template analysis (TA; or thematic analysis using templates) was used to achieve these objectives[316, 326], as it was more flexible than grounded theory[327] and allowed a more deductive approach[326]. Indeed, whereas the latter approach was inductive and theory generating, TA allowed for a-priori (higher-order) codes to assess the aforementioned constructs (see chapter 5) in the data[316, 326].

Initially, along with the transcription of each of the focus-groups and interviews, each individual participant's voice and narrative was articulated by the researcher in a manner which was consistent with the sentiment of its original dissemination[278,280,281,286,289,297,299, 314, 315,328,329]. This was done following repeated reading of the transcripts, to recreate a collection of stories that profiled the phenomena of interest and thereby gained a greater familiarity with the data[278,280,281,286,289,297,299,314-316,326,328,329]. The initial template for analysis was based upon the focus-group topic guide (Appendix 5.15) and contained the constructs (higher order codes) as well as probes (lower-order codes), the latter which were used as aids to coding[316,326].

From here the data was then reassessed to identify the emergence of salient categories that structured the text, and related to the definitions and descriptions of the constructs as detailed in chapter three[326]. Some of these categories were predefined owing to the semi-structured nature of the interviews[278,280,281,286,289,297,299,314,315,328,329]. As more categories emerged, so too did patterns under which categories were grouped as well as divided, deleted, merged and remerged, within each of the construct domains, defined in the template[316,326]. Some categories and segments of data were coded in multiple construct domains, or their defined scope was changed, whilst others underwent amendments in their hierarchical classifications[316,326]. This way, having been through the data a number of times, coherence was brought to the data and the interpretation of

the categories were grounded confidently in both the data and the underlying theory[278,280,281,286,289,297,299,314,315,326,328,329].

From here, additional patterns were assessed in relation to the spreads of categories between individual participants and within different groups of participants[316,326]. These were assessed in relation to the summarised narratives to provide further insights[316,326]. However, a balance was also struck between assessing codes which were salient to the scope of the study objectives and those codes which may have been potentially significant, but lay someway outside of the scope of the study objectives[316,326].

5.9. Reliability of the Focus-group

In the qualitative paradigm this has often been interpreted as 'dependability' and 'auditability'[281,286,297,300]. In this respect the focus-group topic-guide (see Appendix 5.15) was clearly designed to address the research objectives (see Appendix 4.1). In addition, both focus-groups were conducted in similar contexts and conditions, to increase 'meaningful parallelism' across conditions[281,286,297,300]. However, exact locations, days and times were dependent on the availability of participants. The facilitating researcher also remained consistent throughout both sessions. The analyses were designed to increase the likelihood of the relevant questions (see Appendix 4.1) being answered using appropriate techniques[286]. Data capture remained consistent between each group session. The recruitment was designed to elicit a full range of appropriate respondents, as far as possible.

5.10. Validity of the Focus-group

In a similar way to the latter section validity is often interpreted as both 'credibility' and 'authenticity' as well as 'transferability' and 'fittingness'[281,286,297,300]. Here the use of triangulation techniques highlighted what parts of the data were consistent throughout each form of analysis and where there was divergence[281,286,297,300]. The use of member checking (i.e. feedback on analysis, etc.) also increased the consistency of interpretation between the participants and the researcher[281,286,297,300]. The focus-group topic-guide (Appendix 5.15) and the analysis were also fixed towards deciphering whether the theoretical underpinning of the research was reflected by the participants as relevant and

therefore contextually appropriate[281,286,297,300]. The latter was used to enhance the credibility of the theory by identifying areas of divergence and convergence from the data as a whole[281,286,297,300]. The sample was, as far as practicable, largely representative of the community-pharmacy population under study. This should have increased its transferability and fittingness[281,286,297, 300].

5.11.   Assessment of Construct Validity

The analysis of cognitive-interviews for construct validity had been varied so far in the literature[293,294,319,324,330], with some advocating a robust and systematic approach to analysis[294,324,331,332] whilst others suggesting a more subjective and flexible approach to analysis[293,294,318,323]. Analysis was often carried out both within interview level and across interviews level[320]. Most had opted to base their analysis on the widely used four stage Question-Response model (i.e. comprehension processes, retrieval processes, judgement processes and response processes) which had become established as the theoretical underpinning of cognitive-interviewing[292,294,321,333-335], using a hybrid systematic and flexible approach[323,333]. They split the potential problems that an individual might have had into taxonomies[318,336-339], of which one of the more standardised versions was put forward by Conrad and Blair in 1996[318,319,321,339].

They proposed that cognitive-interviewing would not be able to distinguish between problems associated with retrieval processes and judgement processes, based upon information elicited during cognitive-interviews; as such information would have reflected working memory rather than long-term memory retrieval[339]. Therefore, a three-stage model was proposed instead in which the retrieval processes and the judgement processes were combined into one stage and represented the middle stage between comprehension processes and response processes[339]. Based upon their previous experience of cognitive-interviewing, they proposed that five different types of problems could be identified to occur in either of the three stages mentioned[339]. These five categories of problems included: lexical problems (e.g. meanings of words or phrases, use of words or phrases, etc.)[339], inclusion/exclusion problems (e.g. the scope of words of phrases being used, etc.)[339], temporal problems (e.g. contextual understanding of the time period to which the time refers, etc.)[339], logical problems

(e.g. use of connectives, false presumptions, use of tautologies, etc.)[339] and computational problems (e.g. sentence structure, syntax, etc.)[339].

Therefore in all, this represented 15 types of problems that could have been identified within the cognitive-interviews[339]. Percentages of problems per item and per problem category were used to analyse the cognitive-interviews[318,333]. Potential problematic issues identified were further considered in terms of threshold of a potential issue being recognised as a problem, with a problem being explicitly evident and expressed by the interviewee and/or interviewer (i.e. understanding: no), potential indication of an issue (e.g. changing of answer, long pauses, etc. understanding: maybe) and no issue identified at all (i.e. understanding: yes)[318,321]. Items were considered for modification or deletion where they were found to pose explicit problems for more than one individual per round of cognitive-interviewing[330] (see section 6.3).

5.12.   Reliability of the Cognitive-interview

Similarly to section 5.08, using the definition of dependability (i.e. ensuring quality control and due care is exercised) a systematic approach was adopted, in which participants' item interpretations and ratings were examined through a series of semi-structured cognitive-interviews, to address the research objectives (see Appendix 4.2). Likewise, the use of matrices-analyses illustrated clearly the extent to which the data from the participants exhibited meaningful parallelism across the different sources[281, 286, 297, 300]. This also demonstrated whether the data was consistent with the theoretical underpinning of this research. The researcher remained consistent throughout this study stage by provision of adherence to the cognitive-interview topic-guide. The auditability of the methodology was further enhanced by the use of reflexivity whereby the thoughts of the researcher regarding the research process was noted, where possible, and then examined in order to account for any influence of personal assumptions, biases etc.[281,286,297,300].

5.13.   Validity of Cognitive-interview

As noted in section 5.09 in qualitative research validity is concerned with the 'Truth Value' in relation to credibility, authenticity and whether the results make

sense[281,286,297,300]. Cognitive-interviewing methodology was successful in construct validation in previous research[290], as it provided additional information regarding interpretation that psychometric testing alone was argued to fail in capturing[290]. An inspection of the results with the participants, aided in ensuring that the researcher's interpretations of the cognitive-interviews, were consistent with the participant's interpretation.

5.14.　　Summary

This chapter provided a comprehensive and detailed explanation of how the methodological and analytical strategy of stage 1 would be implemented to achieve the research objectives detailed in chapter 4 and Appendices 4.1 and 4.2. Both the methodology and the analyses were informed by the methodological and analytical rationale introduced in chapter 4. Chapter 6 shall report on the results of the qualitative analyses detailed in this chapter.

6. Chapter 6 Stage 1: Results

6.1. Introduction

The previous chapter highlighted how the research plan, ergo, the research model was brought to fruition. It illustrated both the practical methodology and the practical application of the analyses to the constructs being examined. The chapter addressed different aspects of the objectives of the research programme as detailed in chapter 4.

This chapter therefore will detail the results of the analyses applied to stage 1 of the research programme as detailed in chapter 5. Stage 1 consisted of two distinct but connected studies. The stage 1.1 study consisted of focus-groups of community-pharmacists, which were used to explore the contextual appropriateness, and to characterise and understand the roles of Affective-professional Commitment (desire-based), continuance-professional commitment (needs-based), normative-professional commitment (obligation based), affective-organisational commitment (desire-based), continuance-organisational commitment (needs-based) and normative-organisational commitment (obligation-based), as well as the outcome constructs (see chapter four) pertinent to the research programme. The second study (stage 1.2) was to assess the face and construct validity of the survey of scales used to measure the constructs (mentioned above) using cognitive-interviews, with community-pharmacists (see chapter 5).

To prepare for both studies the researcher undertook a series of training courses on focus-groups, cognitive-interviews, NVIVO workshops and other relevant seminars, as well as attending other studies in which some of these methodology were being employed. The reason for this was to appreciate the research processes and experiences from both vantage points, so to have greater awareness of some of the issues that may be experienced by participants and also those that may be salient to the subsequent analyses conducted.

This chapter is broadly split into two main sections. The first section (6.2) details the results of the thematic analysis[278,326], which were subsequently conducted on both focus-group and cognitive-interview data. The second section (6.3) reports on the results

of the cognitive-interviews in stage 1.2 which were analysed for construct and face validity using the standardised taxonomy developed by Conrad and Blair[339].

6.2. Stage 1 Thematic analyses

This analysis followed the analytical process as laid out in chapter five and the underpinning rationale as stated in chapter 4, involving all 32 participants. It was considered that the use of data from only two focus-groups may be insufficient for saturation for analysis and so this was supplemented by the data from the cognitive-interviews. Both the focus-groups and the cognitive-interviews required the participant to discuss the constructs detailed above and how they may operate in the community-pharmacy context. The difference between the two approaches was that cognitive-interviews examined the construct through the inspection of the individual items which made up the survey scale used to measure the individual construct (see Appendix 7.4). Therefore, whereas the focus-group participants were asked if and how a particular type of commitment (e.g. affective-professional commitment, etc.) may operate in the community-pharmacy context (see Appendix 5.15 for topic-guide), cognitive-interview participants were asked to examine and consider individual items which had been validated in previous research to tap into the commitment construct (see Appendix 5.17 for interview schedule); for example, in relation to affective-professional commitment, one of the items which were viewed to tap into affective profession commitment and hence considered by the participants was "My profession is important to my self-image" (Appendix 5.17).

The template used to frame the thematic analyses consisted of the commitment constructs affective-professional commitment, continuance-professional commitment, normative-professional commitment, affective-organisational commitment, continuance-organisational commitment and normative-organisational commitment, which were discussed in both the focus-groups and the cognitive-interviews. The aim of this analysis was to explore the contextual appropriateness and applicability of the constructs within the community-pharmacy context. How the constructs may fit within community-pharmacists' nomological networks and become contextually relevant; and in so doing complete the objectives of stage 1.1 (see chapter five) as a precursor to the

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testing of the hypotheses (see chapter 4). Therefore, in this section each subsection represents a higher level theme/construct (e.g. affective-professional commitment, etc.)[326]. Each of these subsections were further subdivided into exploring some of the prominent lower level categories (see Appendix 6) identified in the community-pharmacy context data which were positively associated with the development/maintenance of the higher level theme and those which were negatively associated with the development/maintenance of the higher level theme[326]. Each of the categories were populated with illustrative quotes from the data with further explanatory detail where required.

6.2.1. Affective-professional Commitment

Affective-professional commitment was readily identifiable as the familiar and conventional perception of 'commitment', by members of both focus-groups and by interviewees. It was found to operate well in the community-pharmacy context, and there appeared to be little comment to its applicability in the community-pharmacy context. The discussions on affective-professional commitment considered how such commitment would be developed in community-pharmacy, and maintained. Equally the discussions also touched upon any perceived barriers of the development to affective commitment as well as triggers to the reduction of affective profession commitment. A number of key themes came across from the analysis of these discussions, based on data of both focus-groups and interviews.

One of the major themes that became evident during the analysis process was that to develop affective-professional commitment in the community-pharmacy context, it was considered that a community-pharmacist would need to perceive an alignment between personal values and goals with the profession. This came across in both the focus-groups' discussions on affective-professional commitment and in the interviews when affective-professional commitment related scale items were assessed; and appeared to be endorsed by the vast majority of participants (29/32). An example of this alignment was illustrated by cognitive-interview participant CI15, when asked about the affective-professional commitment scale item 'I am enthusiastic about my profession':

"I love everything that it stands for. I love the training involved, I loved the science and everything behind it. I really enjoyed training to be a pharmacist and I like to try and maintain that enthusiasm with what I'm doing, because I think it's such an important job to be doing" (CI15: Female, Large-multiple, Part-time, Locum)

This was consistent with the literature as detailed in chapter 3. It implied that individuals, who felt that their values and goals were consistent with the profession, would be enthused with the profession and exhibit attitudes and thoughts consistent with the desire to remain with the profession. Indeed the discussions suggested (22/32) that such aligned pharmacists perceived an inherent value of the profession of pharmacy to the wider society in terms of benefiting patients and customers by attending to their health. This facet of the aforementioned alignment between pharmacist and profession was illustrated by CI04, when asked about the affective-professional commitment scale item 'I'm proud to be in my profession':

"I think that pharmacy erm... provides a massive er unremunerated contribution to the NHS and erm, and I think that erm... that it is a very erm, good profession to be in" (CI04: Female, Independent, Locum)

Community-pharmacists aligned to the profession in terms of their goals and values were thought to feel more satisfied by their involvement within the profession and more enthusiastic in their practice according to the focus-group discussions (7/11). This was replicated in the interviews where individuals who expressed an alignment with the perceived values and goals of pharmacy through the course of their respective interviews also appeared to express their enjoyment and satisfaction with their membership of pharmacy (11/21). This was illustrated by CI20 when discussing the affective-professional commitment scale item 'I am enthusiastic about my profession':

"I enjoy going to work I love, I get a sense of satisfaction from helping people. I..... Read the journal, like to read new things. I get.... excited about advancements, when there are new things I get involved. We've just setup a minor ailments service, and yeah, I enjoy doing things like that" (CI20: Female, Large-multiple, Branch Manager)

Another prominent theme that came out of the analysis of the focus-group discussion and interview discussions on affective-professional commitment was the importance of 'skill utilisation and variety within the profession'. The analysis suggested that opportunities to exercise professional pharmacy skill and knowledge were associated positively with the desire to be in the profession (16/32). This view was illustrated by focus-group participant FG14 when discussing the impact of skill utilisation on affective-professional commitment in community-pharmacy in comparison to other sectors of pharmacy:

> *"But community's getting quite; it getting a lot more clinical isn't it? With all the roles and things, it's getting a bit of a blur with hospitals. So those kind of, you know people come out of pre-reg thinking, or out of university, going "I want to be, you know , I want to do all the clinical side" they can get that from community now."* (FG14: Female, Large-multiple, Locum)

Moreover, the level of variation in job content and location, skill variety, utilisation and task variety in the pharmacy profession across community-pharmacy was viewed by some in the focus-groups and some of the interviewees as positively related to affective-professional commitment. These pharmacists pointed to the increasingly *"healthcare professional"* (noted by FG11) position being adopted and championed by the profession (n=17/32). This view was illustrated by CI04 during the further probing of CI04's discussion of the affective-professional commitment scale item 'I'm proud to be in my profession':

> *"It's got an erm, postgraduate structure that erm, you know; and certainly career pathways that we're just starting to develop. That's being developed for secondary career pharmacists and they're starting to look at it for community-pharmacy as well now. Erm, so we are, we are, moving now into slight… hopefully the equivalents to the royal colleges are for the doctors. That we have got erm, you know, pharmacists coming into the professions that will be able to aspire to become, you know erm, general level, advanced consultant level pharmacist, become prescribers, become pharmacists with special interests. And*

that's equivalent to you know other professions that's got that structure. So I'm very proud to be a part of that." (CI04: Female, Independent, Locum)

Almost all participants from both focus-groups and interviews agreed that patients and the community being served were the fundamental constituents of importance and as such a patient and community centric attitude was found to be another theme which was associated positively with affective-professional commitment. An affective-professionally committed community-pharmacist was viewed as readily willing to do things in the interest of the patient even where there was no monetary gain. Helping the community and the patient tended to be the primary enjoyment and motivation here (21/32). This view was illustrated by CI05 during the discussion of the affective-professional commitment scale item 'I am enthusiastic about my profession':

"Er, enthusiastic, in that it's not just nine to five or the half past eight to half past five of it. I do a lot of looking on the internet for example, if somebody asked me something, I'll research on my own time. Erm, I have to watch every medical programme going because somebody comes in with the symptoms that I've seen at it so…. Erm, a lot of it is, is reading around the subject if you like, like you have to do when you are at school, it's not just not going in there and learning facts and regurgitating them. It's just, I love learning different things about it" (CI05: Female, Senior Branch Manager, Large-multiple)

Similarly, FG11 illustrated, during the discussion on the impact of affective-professional commitment that such committed pharmacists were willing to go that extra mile for their patients at their own cost:

"Referring things back to the doctors and all that which takes time or even now sourcing medicines because the wholesalers haven't got a lot of things. So you have to spend ages running around trying to find stuff and ending up borrowing from other pharmacies and (.) all of that is extra" (FG11: Male, Branch Manager, Large-multiple)

The analysis highlighted the perceived versatility and flexibility within the profession as a theme which was seen by some as salient towards the development/maintenance of

affective-professional commitment in both focus-grouped discussions and by interviewees. It was viewed that community-pharmacists like being in the profession because they had had the flexibility to be able to dip in and out of the profession. Indeed it was viewed as more female friendly in this regard (15/32), but also sufficiently accommodating to allow people to do other things as well and then comeback to pharmacy (14/32). This was particularly emphasised by FG26 when discussing affective-professional commitment, and similarly illustrated by CI05 when discussing affective-professional commitment scale item 'I regret having entered my profession':

> *"Well, I think it's the different phase that I'm used to, erm. When you first qualify, I was actually married when I first qualified with no children. And then you acquire (coughs), you acquire children, and my work dropped down then to two or three hours a week or whatever, and erm. As my children became older and more independent and more expensive my work then went back up again. So for me in particular it's been a very good career. For women in general I think it's a good career because you can erm either have more or less work depending on your family circumstances, and it's well paid"* (CI05: Female, Large-multiple, Senior Branch Manager).

The analysis found that participants perceived those community-pharmacists who were affectively committed to the profession of pharmacy as more likely to be motivated to engage further in pharmacy. This was put forward in both focus-group discussions and by interviewees. Participants gave emphasis to the fact (as they saw it) that a lot of unpaid work went into the then Royal Pharmaceutical Society of Great Britain and its branch systems which required a significant amount of commitment both in terms of time and energy (15/32). This and other additional non-paid pharmacy-related responsibilities were viewed by the participants as examples of community-pharmacists motivated by affective-professional commitment. This was illustrated by CI06, during the discussion of the affective-professional commitment scale item 'I'm enthusiastic about my profession':

> *"Yeah on-on the whole I try to sort of erm, help people raise profile of pharmacy. As I say I have been a member of various committee's that; that interface with a whole variety of different people. [I have] been chairman of the*

local branch so again,[ ] been sort of representative roles. [] I have also (2) [been] making speeches to mayors and chief executives of PCTs, doctors, MPs. So I suppose there has to be a certain amount of enthusiasm to, to do that, to a certain extent, (2) and try and persuade you know what pharmacy or pharmacists can do for various people, really" (CI06: Male, Large-multiple, Senior Branch Manager)

As well as highlighting themes which promoted affective-professional commitment from the focus-group and interview data, the analysis also revealed some of the broader themes which participants perceived to be detrimental to the development and maintenance of affective-professional commitment. One such theme was the level of control that pharmacists felt that they had in their work environment as highly trained and competent professionals. Opportunities for personal control were viewed as paramount to affective-professional commitment in both the focus-group discussion and the interviews. However, the analysis also highlighted that the participants perceived the recent changes in legislation regarding Responsible Pharmacists and Standard Operating Procedures to have eroded perceptions of control (13/32). Added to this, participants highlighted as also meaningful, the increasing numbers of community-pharmacists being managed by non-pharmacists, in how they should practice (7/32). This was illustrated by FG12 during the discussion of affective-professional commitment, in which the impact of the warring nature of high responsibility coupled with low control was deliberated on, in relation to affective-professional commitment:

"Yeah, you've just got too much responsibilities; if you have a technician there you still [are] responsible for whatever she does and whatever she checks. So if she makes a mistake, you are responsible as well. So I don't know how you are supposed to do all this other clinical stuff and [be] responsible for whatever the technician does, it does not added up" (FG12: Female, Large-multiple, Locum)

The analysis suggested that participants in both focus-groups and interviews felt that there was a clear distinction between affective-professional commitment to the role of the pharmacists and affective-professional commitment to the professional body (at the time this was the Royal Pharmaceutical Society of GB). Some suggested that the professional body had *"been a ball and chain round our ankles"* (FG21; Male, Medium

Multiple, Locum). Some of the participants expressed feelings of disconnection, lack of trust and being let down by the society owing to inadequate support and protection; viewed as a good regulator but not as good at being a professional body by most (18/32). Taken together these issues were viewed as significant triggers for the reduction of affective-professional commitment. This was illustrated by FG27, in the discussion of affective-professional commitment to the profession when contrasted with affective-professional commitment APC towards the then professional body:

> *"There's lots' of disharmony and a lot of anti-society feeling in some quarters in that they haven't done for us what people see they should do in the past. I personally think that the society have done a relatively good job in regulating to be quite honest"* (FG27: Male, Medium multiple, Senior Pharmacy Manager)

This was also illustrated by FG11, in a similar discussion to the latter:

> *"I think there is still the commitment to the spirit of pharmacy if you like whatever.. I don't know how we are going to name it.. But not to the professional body which I think is another separate issue"* (FG11: Male, Large-multiple, Branch Manager)

A theme which was highlighted by a sizable proportion of participants in both focus-groups and interviews was the view that some of the significant changes to the profession had been abruptly imposed from external sources such as the government, rather than naturally evolved in the profession. This linked to the idea of personal control was viewed by many as having an adverse impact on affective-professional commitment (15/32). Indeed, some participants expressed becoming overwhelmed with the sheer pace and scale of the changes in all areas (15/32). At the same time other participants, queried why it appeared pharmacy had faced the brunt of the fallout from such high profile murder cases as those involving Harold Shipman[340] (a medical doctor) and Beverly Allitt[341] (a nurse) (7/32). This was displayed by FG27, during the discussion on affective-professional commitment:

> *"Well the split came with Shipman didn't it? They said you can't do both, that's where it came from. I don't think there was anything from government that*

actually said there is a real problem with the society. It's just that they looked at it all and we had to move to a model that mirrored the nursing and the medical profession....Well it was a health thing, it was a healthcare profession, it wasn't just us.... It was Beverly Allitt who was a nurse as well, also... We got dragged in with them.... it is quite a worry that we're actually moving to a model that those to professions who have the problems" (Male, Medium Multiple Senior Pharmacy Manager)

Similar to the last theme but different in scope was the theme of bewilderment by the change in the profession. This came across in the analysis of both focus-group and interview data. The significant change in the profession was perceived to have made most pharmacists wary of what was coming next as most knew very little about the then proposed new professional body (Royal Pharmaceutical Society), proposed new regulator (General Pharmaceutical Council) and also even less about what these new institutions were going to expect from them (17/32). All this made some pharmacists rather confused and weary for the profession long-term and was felt to therefore have a negative impact on a community-pharmacist's affective-professional commitment. This was illustrated by CI01, when discussing the affective-professional commitment scale item 'I do not identify with my profession':

"It's very difficult for me for sometimes to identify with my profession simply because my profession erm at this moment is in a state of disarray. I don't know if you're aware politically where my profession stands.... But with the introduction of RP status with the introduction of the new council and so on and so forth, it is very difficult to identify with my profession. At this moment in time I do not identify because I don't know exactly what's going to happen in the future in my profession." (CI01: Male, Large-multiple, Locum)

A theme which was agreed with by a majority of participants as having a significant adverse impact on affective-professional commitment was the perception of too much unnecessary bureaucracy. There was a feeling that far too much administration had been created by new legislation such as Standard Operating Procedures & Responsible Pharmacist legislation that looked good in principle, but which were completely unrealistic in practice; for both locums and permanent community-pharmacists (17/32).

This was illustrated by both CI01 and FG26 during the discussion of the affective profession commitment item 'I am enthusiastic about my profession" with CI01 and during the discussion on affective-professional commitment in general with FG26:

> *"There's another part which says awe there's too much paper work, it's too much red tape and I'm not enthusiastic about…"* (CI01: Male, Large-multiple, Locum).
>
> *"I mean got a locum working today, (he) has never worked for me before, come in, signed as responsible pharmacists. There's no way he could have read my SOPs because they are that deep"* [in terms of thickness] (FG26: Male, Small Multiple, Contractor).

6.2.2. Continuance-professional Commitment

Some community-pharmacists felt that continuance-professional commitment did not seem like commitment as they would recognise it, but resembled being trapped or stuck in a profession. This view was expressed in both the focus-groups and interviews. A number of people felt stuck in the profession as changing professions would have meant a lot of years of study, at the end of which there was no guarantee of a commensurate level of work available in a another profession (4/32). This was exemplified by FG24, when discussing continuance-professional commitment:

> *"But as I read that to me that's not commitment, that's not commitment to me that's I am in a .… Situation where I need to maintain some status quo. So, it is almost forced upon me; but that's not a commitment. That [continuance-professional commitment definition] statement there to me implies no level of choice. Commitment occurs when your choices could make you better off or more well thought of; you still remain in the current choice so it's not all been from something better but staying where you are. That's whipping me into this position rather than me choosing to hang on to this position"* (FG24: Male, Medium Multiple, Senior Branch Manager).

During the ensuing discussions about continuance-professional commitment, one of the major themes agreed upon by both focus-group and interview participants as a potential

trigger for the development of continuance-professional commitment in community-pharmacists was that some people may only remain on the register because they need the money (18/32). The discussion touched upon motivation; whether pharmacy was seen as just a job to maintain a lifestyle or whether it was something to enjoy doing. This was illustrated by CI21 during the discussion of the continuance-professional commitment scale item 'Too much of my life would be disrupted if I were to change my profession now":

> *"…. That would definitely be a one because I would have to change pretty much everything if I changed profession and I have a lot financial commitments, I've even bought a house on my own and … horses as well and cars and I wouldn't be able to give all those up and change professions now."* (CI21: Female, Medium Multiple, Branch Manager).

In a similar fashion as above regarding maintaining a lifestyle or convenient routine, another theme that was identified from the data as an antecedent and possible maintenance motivator was the impact of the relative novelty of community-pharmacists being able to dip in and out of the profession (18/32). There was some debate about whether this was more applicable to female community-pharmacists or also sufficiently accommodating to allow people to do other things as well and then comeback to pharmacy. There was also a perception that not many other professions provided this facility. An example of this broad theme was illustrated by FG11 during a discussion on continuance-professional commitment:

> *"I think that's why a lot of people stay with pharmacy because it allows you to do that, so you may end up spending most of your working life doing something else. But you still could do that odd day a week"* (FG11: Male, Large-multiple, Branch Manager)

Another prominent theme to emerge from the data of both focus-groups and interviews, which contributed to the definition of continuance-professional commitment, and was perceived to be evident in community-pharmacy, was the opinion of little alternative but to stay in the profession owing to the perceived prohibitive costs of changing profession. This was viewed as particularly salient in some people of older age, whom

may not have felt that they were in a position to change direction, because they did not have the energy to do so. The feeling was that if there was something out there which they could have done which would have paid as much and allowed them to sit down more, then they would probably do it. A typical example of this broad theme was illustrated by CI05, in the explanation of the response to the continuance-professional commitment scale item 'It would be costly for me to change my profession now':

> *"What with the training costs and loss, loss of income when you're doing it and having to pay for your own training, you don't get a grant for it. It just wouldn't happen"* (CI05: Female, Large-multiple, Senior Branch Manager)

6.2.3. Normative-professional Commitment

On the whole both focus-group and interview participants felt that whilst exposure to pharmacy through family and friends, where applicable, may have contributed to their choosing of pharmacy, it would not compel them to stay in pharmacy through any sense of obligation or family pressure. Indeed the emphasis on such moral obligation in normative-professional commitment was viewed as being a little too strong to be prevalent, significantly in community-pharmacy (26/32). This was illustrated by FG14, during a discussion on normative-professional commitment:

> *"I don't think that anyone would be morally obliged to be in a profession"*
> (FG14: Female, Large-multiple, Locum)

This said the data collected suggested some scope for how normative-professional commitment may have been developed in the community setting. Some non-locum participants from both focus-groups and interviews thought that the subsidised nature of pharmacy training and other help that was given may have provided some basis for obligation, but this was also under threat owing to the increase in degree fees (11/32), etc. This was illustrated by CI04, during a discussion of the normative-professional commitment scale item 'I believe that people who have been trained in a profession have a responsibility to stay in that profession for a reasonable period of time':

"If you've been through the university course, er, you've past your pre-registration exam, you've got yourself onto the register you are... have signed up to a code of ethics to be part of that profession, erm... (sighs)... you have a responsibility in a way because quite a lot of that is funded by the government to help train healthcare professionals for the NHS in some way. But, you know so your pre-registration training will have been funded, so in a way you have a responsibility to try to stay within the profession you know, to erm, give back, you know, what's been given to you, in terms of getting a qualification erm, if you feel that it's not for you then obviously you're probably better making the decision to get out of it because you don't want to jeopardise patient safety, for example, you know but I think, you-you need to give yourself sufficient, reasonable period of time for that to become apparent" (CI04: Female, Independent, Locum).

One theme that was thought of as a way of triggering normative-professional commitment within community was through the development of felt obligation to the community-pharmacist's local community (16/32). Indeed, most participants of the focus-groups and the interviews felt obligated to patients, particularly where they saw themselves as health professionals e.g. pharmacist couldn't afford to be wrong owing to the effect this would have on their patients. A typical example of this theme was illustrated by CI02, in the explanation of the response to the normative-professional commitment scale item 'Even if it were to my advantage, I do not feel that it would be right to leave my profession now':

"I came into the profession to help patients, to help customers, to help the community; and I still to this day don't feel as though it's right to see if was to do anything other than what I was doing, even if there was a financial gain to me" (CI02: Male, Large-multiple, Area Pharmacy Manager)

However, an emerging theme found in both the focus-group and interview data was the perceived increase in the lack of role clarity in community-pharmacy as potentially adversely impacting upon normative-professional commitment (5/32). This said whilst the data was consistent between the focus-group and interview data, the proportion whom commented upon role-clarity in relation to normative-professional commitment

were low yet in-depth in their explanation of this position. An example of this theme was illustrated by FG11 during a discussion on normative-professional commitment:

"I think there's another factor that is starting to undermine the obligation that in fact dispensing is largely done now by dispensers not, not by pharmacists so I'm not sure pharmacists ... are clear about what their role is anymore erm... it's not like nursing where you, you know, for a lot of them anyway its erm.. close contact with the patient whereas ... we don't know what we're doing anymore, we're sometimes we are dispensing sometimes we are doing, undertaking the clinical roles doing MURs or erm doing I&R testing or emergency contraception, or whatever but,.... it's all a bit of a mess again there's no focus to the profession I don't think certainly in community-pharmacy I don't think that we know what we're doing at all except trying to make a living" (FG11: Male, Large-multiple, Branch Manager).

Finally, another consistent theme which was found in both the focus-group and interview data was the perception amongst participants that they had far too much responsibility and accountability in community-pharmacy without enough support and protection, professionally, legally and politically. This they felt had a negative impact upon the development and/or maintenance of normative-professional commitment. This was perceived to be more acutely felt by participants when a referent such as the medical profession was used for comparison purposes. This theme was illustrated aptly by FG13 during a discussion on normative-professional commitment:

"Doctor are protected to the hilt, they don't get done for errors... They've got legal representation they've parliamentary representation, they are really, really well catered for... So we've got a useless MP" (FG13: Male, Large-multiple, Locum)

6.2.4. Affective-organisational commitment

Affective-organisational commitment appeared from the focus-group and interview data as the most readily identifiable version of commitment within community-pharmacy.

This was particularly the case for non-locum community-pharmacists as well. However a number of themes emerged from both the focus-group and interview data about how affective-organisational commitment may potentially have been developed within the community-pharmacy context. One such prominent theme found in both focus-group and interview data was the perceived positive impact of the alignment of professional and organisational goals on a community-pharmacist's development and maintenance of affective-organisational commitment (21/32). Indeed, participants discussed the appeal of such a positive organisational culture (17/32), positive organisational ethics (18/32) and perceived organisational support (16/32) which led to feelings of working in a 'good' company (19/32). This theme was exemplified by CI20, in the explanation of the response to the affective-organisational commitment scale item 'I would be very happy to spend the rest of my career with this organisation':

> *"I am working for they are a good company and not (3) erm, there is nothing that I dislike about them in particular. I've got a good position they're there to support, and compared to other organisations, I think they are one of the best"* (CI20: Female, Medium Multiple, Branch Manager).

A similar theme of positive professional career outlook was also observed from the data of both focus-groups and interviews. There appeared to be a broad consensus that issues such as structured and positive career progression and the professional development of a community-pharmacist would be viewed as positive and would induce pharmacists to want to stay with the organisation as their needs were being fulfilled. This would then in turn contribute to the development and/or maintenance of affective-organisational commitment. An example of this theme was illustrated by FG27 during a discussion on affective-organisational commitment:

> *"It's-it's the opportunities that they provided ten years ago. I only came up here for a day, and I've been here ten years. They've always provided me with the next opportunity for the things I've been able to do"* (FG27: Male, Medium Multiple, Senior Pharmacy Manager)

Another prevalent theme to emerge from the data which was consistent in both focus-groups and interviews was greater perceived attachment to colleagues in the

organisation. Many argued that through perceived positive attachments to organisational colleagues both in terms of local colleagues (where applicable) and organisational colleagues in general, this may aid in the development and maintenance of affective-organisational commitment (23/32). Indeed some suggested that affective attachments to local colleagues may increase affective-organisational commitment to the overall organisation and compensate for a lack of affective attachment to more hierarchical organisational agents (24/32). A typical example of this broad theme was illustrated by FG13 whilst discussing affective-organisational commitment:

> *"And I know some locums for a number of years they have worked in the same one or two shops a week, and that's where their comfort zone is they know the staff they know... The customers very well, they know the doctor, you know they've just got a great rapport with everyone round them, so they feel comfortable working in that particular shop"* (FG13: Male, Large-multiple, Locum).

Another theme which was found to emanate from the discussion of affective-organisational commitment was whether the community-pharmacist self-perceived his/her role as either a health care professional or a business manager (14/32). In both focus-group and interview data it was found that there were perceived to be some pharmacists that had immersed themselves into the business side of community-pharmacies and were happy to work their way up the corporate ladder (business-orientated pharmacists); these were viewed as more likely to exhibit affective-organisational commitment. Therefore some community-pharmacists were viewed as happy to make money for the organisation (i.e. promote branded rather than non-branded, when both are available), with less perceived customer emphasis. An example of this was illustrated by FG14 in a discussion of affective-organisational commitment:

> *"I think looking back at my colleague who had graduated There are a few of those who might have a different opinion to erm working... you actually become business, like really into the business and they are very into these buzz terms And I don't.. I you know. That's not my cup of tea, but they they've gone down that route and maybe if we had someone here who worked for boots and ended up being area manager"* (FG14: female, Large-multiple, Locum)

A related theme which was found within the focus-group and interview data was the perceived potential negative impact on affective-organisational commitment development/maintenance of a misalignment between professional and organisational goals (14/32). Clashes between professional and organisational goals and values were perceived to create a dilemma (17/32). However, it was perceived that the majority of community-pharmacists would side with the profession because even if they left the organisation they would still remain a pharmacist (16/32). This was also the case where there were perceptions of unethical behaviour on the part of the organisation (12/32). An example of this broad theme was highlighted by FG11 when discussing affective-organisational commitment:

> *"To use a concrete example, we're specifically told, and I think it's true in all the major companies, that you don't switch sales from a brand which is usually more expensive to a generic which is usually cheaper. So if someone comes in an says, I want a pack of nurofen, we're not supposed to suggest that if they bought ibroprofen they would save themselves a huge amount of money, because we want to take as much money as we can always. Now I find that very difficult to do and I agree, I think there are some of the younger pharmacists who are probably happy with that.. Erm because the customers ask for it.. Why should we say anything different ermm..."* (FG11: Male, Large-multiple, Branch Manager).

Finally, interestingly from both the focus-group and interview data there was a relatively prominent theme which suggested that where the locum has worked consistently for a number of years in a particular organisation, affective-organisational commitment may potentially be fostered towards the staff and the regular customers/patients (15/32). However, in general it was construed that locums appeared not to engage in affective-organisational commitment as they did not engage much with senior organisational agents such as management or above (16/32). This theme was illustrated by FG14 in a discussion of affective-organisational commitment:

> *"The customers I mean definitely that's why we get.... my commitment was the fact that I enjoyed working there, I liked the staff I knew them, I could trust them and they could trust me, and I got to know the patients, but the actual pharmacy*

company their wasn't, you know the commitment wasn't there either.. on either side" (FG14: female, Large-multiple, Locum)

6.2.5. Continuance-organisational Commitment

Continuance-organisational commitment was viewed as relevant to community-pharmacy, particularly for those whom were community-pharmacy employees. This said owing to the perceived buoyancy of the then community-pharmacy job market, such form of organisational commitment was prima facie perceived as not prevalent in community-pharmacy (29/32). This was illustrated by CI01 in the explanation of the response to the continuance-organisational commitment scale item 'One of the few negative consequences of leaving this organisation would be the scarcity of available alternatives' as well as by CI02 in the explanation of the response to the continuance-organisational commitment scale item 'It would be very hard for me to leave my organisation right now, even if I wanted to.':

> *"No, that's not true there-there's so many available alternatives erm so at the moment that's not an issue it may be in the future because more and more schools of pharmacy are opening, so in the future I believe there will be a change in answering this question but at this moment in time, you know the erm, bed of pharmacy is still quite rosy"* (CI01: Male, Large-multiple, Locum)

> *"For a pharmacist it isn't, there are plenty of options out there at the moment, plenty of companies, I know that because of the job that I do and the pharmacists that I'm trying to retain here"* (CI02: Male, Large-multiple, Area Pharmacy Manager)

However, following further discussions in both the focus-groups and the interviews, a number of broad themes emerged regarding the development and the maintenance of continuance-organisational commitment in community-pharmacy.

A dominant theme that was uncovered in both the focus-group and interview data related to the concept of a work-related comfort zone, which some community-

pharmacists had created for themselves (21/32). These were to do with the perception that some community-pharmacists over a period of time became familiar with the staff, the customers, the environment, computer systems and procedures in place; which was all knowledge which would have been lost if a new organisation has been joined. Therefore continuance-organisational commitment was argued to develop and be maintained in such circumstances where a comfort zone had been developed and maintained by community-pharmacists. Particularly, it was deemed as very difficult for a pharmacist to leave a community-pharmacy where there was great staff relationship that had been built up over a number of years (18/32). This broad theme was found to be salient to locums as well as employee community-pharmacists as illustrated by FG23 during a discussion of continuance-organisational commitment and by CI12 in the explanation of the response to the continuance-organisational commitment scale item 'If I had not already put so much of myself into this organisation, I might consider working elsewhere.':

"I think... The big companies, your commitment is more to teams of people... Then the actual company.... It's the relationships.... Then er,... The actual name above the door. You know it depends on the local circumstances of the people that you interact with.... Have relationships with..... tend to stay because you are part of a team then because you are part of a particular firm. You don't want to lose that relationship and... being part of the team" (FG23: Female, Large-multiple, Area Pharmacy Manager).

"I'm used to it the set-up and the system, so that is, perhaps makes it harder for me to go to the other place where they've got totally different systems" (CI12: Female, Medium Multiple, Locum)

Another relevant theme to surface in both the focus-group and interview data related to the perception that leaving the current organisation would lead to a financial loss for the community-pharmacist (9/32). Such perceptions were deemed to bolster the development of continuance-organisational commitment. Financial implications were suggested to include pensions, shares and discounts, which may become salient in older non-locum pharmacists continuance commitment to their organisations. This was viewed by participants as a factor that potentially became stronger the longer a

community-pharmacist remained with an organisation. This theme was demonstrated by FG11 during a discussion of continuance-organisational commitment:

> *"But for me now I have worked with XXXX for fifteen years and there is a financial implication because my pension is with them (2). And now most pharmacists don't think about pensions(3) and shares. Mind you shares is something else(3) is significant, and also the.. discount you get, 10% discount on everything in XXXX which is much better than the XXXX, or the XXXX not so bad, but the XXXX say, you get 10% on everything in XXXX, but of course XXXX sells more wine and food. So it's a factor, I'm not saying it will keep you there in fact it probably wouldn't in the end, but it's a factor which becomes stronger the longer you're with them"* (FG11: Male, Large-multiple, Branch Manager)

6.2.6. Normative-organisational Commitment (NOC)

In both the focus-groups and the interview data the analysis suggested that participants did not perceive themselves to be morally obliged to their organisations (29/32). This said a small number of broad themes were identified which could potentially foster and maintain normative-organisational commitment in community-pharmacy organisations. The main broad theme which was found to be consistent in both focus-group and interview data was the perceived organisational support received by the community-pharmacist by the organisation (24/32). It was contended by the participants that a community-pharmacist may feel a little guilty of leaving if the organisation was perceived to have provided the pharmacists with relevant support. This theme was illustrated by CI06 in the explanation of the response to the normative-organisational commitment scale item 'This organisation deserves my loyalty':

> *"….again the thoughts that struck me is, is what has it done to contribute to towards your career what support has it provided for you (4). I have been in instances where incidents have occurred perhaps where they, they, they have been supportive of, of you erm, so it's when I suppose (3) when things go wrong I suppose is, is a key, key, key issue. I'm not saying things are drastically, are wrong but if things go slightly a mess how that organisation reacts and support*

you, can, can (3) I suppose (4) It can give you a picture as, as to erm, whether it deserves your loyalty or not I guess, so reciprocated they, if they support you then you'll support it I guess. It's all about this pact or promise situation really" (CI06: Male, Large-multiple, Senior Branch Manager)

Another theme identified during the analysis was the perceived sense of obligation to work colleagues and other staff such as Accuracy Checking Technicians (ACTs), more so than towards the organisation. This was illustrated by CI21 in the explanation of the response to the normative-organisational commitment scale item 'I would not leave my organisation right now because I have a sense of obligation to the people in it':

"I've said three for that because I do feel I have sense of obligation to a certain extent to the people, to the people that I work with mainly. Certainly ACT who'd been trained for a year now and I did the training with her went through all the courses with her and exams and everything so I feel like have got an obligation to her because not all pharmacists will work with an ACT and.... When it's my day off she can't always do any checking so I know she likes to work with me so yeah I do have certain sense of obligation towards her and the other staff that I've trained" (CI21: Female, Medium Multiple, Branch Manager)

The above theme was also the suggested by the participants to be the case for locum community-pharmacist as well. This said as a locum there was no support from the organisation and therefore there was little felt obligation (12/32). Participants felt that as a locum there was an understanding that the organisation had no obligation to the locum community-pharmacist and vice versa. This was illustrated by FG12, during a discussion of normative-organisational commitment:

"I mean they don't do anything for you (locums) so why should you do something for them (laughs). As a locum they don't do anything for me, I mean as XX said they can just phone you and say that we have just got someone for a cheaper rate so you're not coming to work tonight" (FG12: Female, Large-multiple, Locum).

6.2.7. Professional Turnover

The analysis of the focus-group and interview data yielded the broad dominant theme of too much perceived change and too many perceived impositions taking place within a short space of time, as a potentially important factor in professional turnover. Participants maintained the perception that older pharmacists may have left the profession due to introduction of what they saw as impositions such as the then newly instituted mandatory CPD, etc. Moreover, the data suggested that a lot of the changes may lead to a bifurcation between what community-pharmacists thought their role in community-pharmacy was and the reality of the role (13/32), which may make them question whether they wish to remain within the profession. This was illustrated by FG26 during a discussion on withdrawal behaviours:

> *"I think the ever increasing workload is pushing people ….. I mean it is becoming…. You said about volume but we've now got volume, we've now got MURs we've got EHC (Early Hormonal Contraception), we've got minor ailments, we've got all the other bits and pieces that the government want to build up and they all want to be engaged with pharmacists…. And there isn't enough money or time for a….. second pharmacist so the stress will build up erm, …. For some people…"* (FG26: Male, Small Multiple, Contractor)

6.2.8. Organisational Turnover

The analysis of the focus-group and interview data identified two broad themes which were associated with leaving practice in a community-pharmacy organisation. The major theme was the perception that turnover was perceived as more likely due to a misalignment between professional and organisational goals/values. Participant's contended that the organisation was viewed as merely the means to deliver the service of a community-pharmacist. The data suggested that if the community-pharmacists' needs were being fulfilled and they were happy with their role and job then they would remain with the organisation (16/32) and maintain their role (affective-organisational commitment). This was illustrated by FG13 during the discussion of withdrawal behaviours:

"The organisation is only there... it's just a vehicle to deliver the service that's the whole idea. And that organisation is supposed to represent a certain level or standard of healthcare provision with which the processes work and the operational standards so on and so forth with the way that things are set up the ease of access to that healthcare, the opening times whatever the case maybe.... so that's just there as a tool or vehicle to deliver the profession... that's how I see it" (FG13: Male, Large-multiples, Locum)

Another theme which emerged from the data which was perceived to reduce withdrawal from the organisation was the intangible costs of changing organisations. Continuance-organisational commitment was identified as this factor, as it was perceived that it was very hard to adapt from one organisation to another due to the use of idiosyncratic systems in different companies. It was contended that the longer a community-pharmacist stayed with an organisation the more likely the pharmacist would remain due to the knowledge that the pharmacist had built up about the company practices, systems and procedures which would be lost if the pharmacist moved to a different organisation. This would arguably occur until a suitable alternative was found or something significant changed in the relationship between the organisation and the pharmacist (15/32). This was illustrated by FG23 during a discussion of withdrawal behaviours as well as FG14 during the discussion of withdrawal behaviours:

"Yeah so again it's about relationships and being in teams isn't it if you're part of the team and several people move on then your commitments going to drop possibly" (FG23: Female, Large-multiple, Area Pharmacy Manager)
"It's more about the individual shop, the individual environment.... Yeah, and I think that is probably overrides the actual organisation you know the company, the brand you know the brand whatever the brand is Tesco Boots the Coop, whatever" (FG14: Female, Large-multiple, Locum)

6.2.9. Sector Turnover

The analysis of the data suggested that dissatisfaction with practice in community-pharmacy was broadly the greatest trigger in a community-pharmacist changing sectors. Indeed despite an increase in clinical work in community-pharmacy, hospital pharmacy and primary-care pharmacy were still perceived to be far more clinical and pharmaceutical-care orientated practice. Therefore community-pharmacists wishing to achieve a more clinical practice were perceived to be more inclined to change sector (12/32). This was illustrated by FG27 during a discussion on withdrawal behaviours as well as by FG12 during another discussion on withdrawal behaviours:

> *"I think there's a lot of frustration in community-pharmacy but things aren't advancing* [towards more clinical practice] *as originally thought perhaps when the new* [community-pharmacy] *contract came out but that's ultimately down to funding issues isn't it"* (FG27: Male, Medium Multiple, Senior Pharmacy Manager).

> *"And I think you get more satisfaction from hospital as well because you get to use all that knowledge that you've got from doing your pharmacy degree"* (FG12: Female, Large-multiple, Locum)

6.2.10. Reduction of Hours

In addition to work-life balance issues (7/32) and domestic responsibilities (13/32), similar to the previous section, the data suggested that reducing dissatisfaction with community-pharmacy practice may play a key role in a community-pharmacist's decision to reduce their hours of community-pharmacy practice. Indeed the analysis suggested that reduced hours could be associated with affective-professional commitment as pharmacists could then better focus on their roles and ensure that they were always giving their best (4/32). Equally, it was contended by the participants that working long shifts such as twelve hours long increased the risk of the community-pharmacist making a mistake and thereby risking patient safety (8/32). This was

illustrated by FG14 during a discussion on withdrawal behaviours as well as by FG12 during another discussion on withdrawal behaviours:

> *"That's a very good point. I think that P mentioned before the risks and the benefits now, of working in the.... Gone are the days when you wanted to do the long hours because there are too many risks involved, you know. Hence I think, reducing the hours means that you can really focus on what you do and do it really well, you know and I think that... that could be a reason why some of the professionals want to reduce their hours, just to ensure that they can give a 100% all the time if at all possible"* (FG14: Male, Large-multiple, Locum)

> *"Yeah, it's just too risky to work a 12 hour shift, with no break. You're just going to make a mistake and that's the end of you basically so, you're not going to"* (laughs) (FG12: Female, Large-multiple, Locum)

6.2.11. In-role Behaviour

The analysis of both the interview and focus-group data revealed a number of salient themes in relation to in-role behaviour in community-pharmacy. One such emerging theme which was identified related to the perceived blurring of the role between employee community-pharmacists and independent contractor community-pharmacists (17/32). It became blurred because most pharmacists are employees and not contractors. As employees they are paid a salary but are not paid specifically for the different facets of the NHS contract, which goes to the employer. This was illustrated by FG11 during a discussion on in-role behaviours:

> *"Erm.. as a contractor to the NHS then you're not paid to do most of those things you get paid for dispensing and you get paid specifically for each MUR. The other things are not paid for specifically, certainly all the advice and sorting out the prescriptions…. And the training and all that sort of stuff. I think it's become more blurred because we are not contractors, most of us, we are employees"* (FG11: Male, Large-multiple, Branch Manager)

Another theme which emerged from the data related to the perception of the job-role going beyond the confines of the job description. Employee community-pharmacists received a job description for what they were paid to do, but in addition to this there were perceived to be things which they were expected to do which were not in the job description (20/32). This was illustrated by FG14 during a discussion on in-role behaviours:

> *"Well as A said some of the things you don't get... paid for necessarily anyway. From, from just the, you know the sort of essential services. But then when you move on to the advanced or the enhanced you still have to do them. But there are things that you do outside of your role anyway, Such as delivering if it's an issue"* (FG14: Male, Large-multiple, Locum)

Another related theme that emerged from the data of both the focus-group and the interview data was that locum community-pharmacists were expected to do everything that was required to be done on shift (6/32), even if this meant doing things which were not on the job description but were required by a patient (e.g. dropping off medication, etc.). This was illustrated by CI01 during a discussion on in-role behaviours scale items:

> *"Because the job description says you have to do everything. It doesn't-doesn't give you an option.. Not to consider what you can do and what you can't do ... So you would have to do everything that a running pharmacy undertakes in a day to day basis"* (CI01: Male, Large-multiple, Locum)

Another theme which emerged from the data, related to the differences between organisational and professional requirements of the community-pharmacy job-role. There was a perception amongst some participants that community-pharmacy organisations expected pharmacists to comply with business targets, sales targets, customer satisfaction surveys, etc. (21/32). This led some participants to report perceptions of being treated like money making machines, and instances of corporate bullying. Community-pharmacists would have greater affective-professional commitments to professional in-role behaviours, it was perceived. Some participants also contended that some professional in-role behaviour appeared to contradict and

conflict with some of the organisational in-role behaviour (18/32). This was illustrated by FG14, FG11, FG24 and during different discussions on IRBs:

> "And they clash as well I remember when I locumed at Boots those targets at getting our prescriptions through, were like you'd be expected to take it off a patient and if they demanded it be done in five minutes you'd just have to put them at the front of the queue and you were kind of forced to do that because of the sales targets... The targets of the prescriptions which goes against your professionalism in the sense that you should be..." (FG14: Female, Large-multiple, Locum)

> "Yeah I means there's with... to go back to MURs there's conflict Because professionally we're expected to do them that is not a problem, but we're expected to do them where they're appropriate Erm but from the organisation, they're saying we want you to do four hundred in a year come hell or high water whether they're appropriate or not; And that's the professional dilemma" (FG11: Male, Large-multiple, Branch Manager)

> "The job-role for the organisation is about the managerial bit it's about doing the day to day stuff that re, that the company needs...SOPs requirements and financial considerations" (FG24: Male, Medium Multiple, Senior Pharmacy Manager)

A final theme which emerged from the data related to the blur between some of the organisational and professional requirements of the community-pharmacy job-role (17/32). Participants perceived that the idiosyncratic nature of organisational in-role behaviour was dependent upon the employing organisation, and the idiosyncratic nature of professional in-role behaviour was dependent on the primary-care trust directives etc. Such distinctions were perceived to be problematic to apply to independents that were also contractors and therefore owners. This was illustrated by FG27 and FG26 during different discussions on in-role behaviours:

"I don't think there's a distinction. I'm intrigued because I would have said that both roles, they overlap really, so both roles actually there's an overlap....It's gone

simultaneously, you couldn't almost switch out of each role. It's not two separate....and say alright I'm going to act in... because you couldn't divorce yourself from your professional role. As a professional, they employ me as a professional to carry out that activity. But I just find it difficult to divorce the two roles because you're saying doesn't do it in a certain way then I would consider myself unprofessional" (FG27: Male, Medium Multiple, Senior Branch Manager)

"What I'm saying is there are, there are pharmacists that will walk into a pharmacy.... If you're a locum they'd be I suppose they'd be different to a manager. You're likely to just do the job regardless of you know no thought to the er, organisation that you, that you're er, are employing you and whether that's going to cost money, erm... I've had situations where they've come in and they've ordered something from somewhere really obscure and it's actually cost me money to actually supply the prescription, whereas the manager would never have done that. They would have actually found out where it's got to come from and what the best option for doing it was. You know the two things are run together …. But there's times when another person may come in and it does diversify....Well it's not a co... but the thing is that they don't think about it, and no thoughts been given it was just oh well that's the easiest …. You know and we've done the job that's it, job's done…. And technically they've done what they're supposed to do" (FG26: Male, Small Multiple, Contractor)

6.2.12. Extra-role behaviour

The analysis of the interview and focus-group data revealed that participants perceived no real distinction between the professional extra-role and the organisational extra-role behaviours. Examples of these behaviours included giving out advice on the phone, bandaging individuals, sourcing medicines, repeat prescription and delivering to patients. Also participants often spent extra time unpaid and reported cases of going beyond the job description such as community-pharmacists taking home MURs to complete. This was illustrated by CI20, CI10, CI19 and FG11 during different discussions on extra-role behaviours:

"I think there are an awful lot of extra activities that are done. It's very difficult to identify, but I mean I'm thinking of going and helping people in the supermarket context

showing them where things are. Time after time people come to us and say I can't find this erm... and it may not be anything to do with medicines, but... Even when you are walking to the toilet someone might say well, you know, where you keep the readymade spaghetti Bolognese. If I know I will tell them if I don't I will also tell them I don't know. But there's that kind of thing that becomes a part of your role not as a professional, partly as your role within the organisation, but partly just on a perfectly human level if you're out in the street and someone asked you for help you'd give it And I don't think that behaviour changes when you suddenly get into a job" (CI20: Female, Large-multiple, Branch Manager)

"I think that once you step into your professional shoes there's so much you do anyway naturally And it becomes natural behaviour, and even from the company perspective you just know what you have to do because otherwise they'll get all of you together and they'll say you haven't done this you'll get a red, and you don't want a red, because that will impact your pay scale at the end of the day" (CI10: Female, Large-multiple, Part-time)

"I'll do it all, I'll drop the medication off after work" (CI19: Female, Large-multiple, Locum)

"Some people are taking home MURs. That's stupid of them. That was bonkers" (FG11: Male, Large-multiple, Branch Manager)

"Well this recently where there have been problems with erm getting hold of ordinary drugs Things like omperazol capsules have been out of stock at our wholesaler. So I arranged to go to a friend of mine and get some from him, and we swapped something else for them erm.. and I went out of my way I drove a distance to do that ermm... If I hadn't done it no one would've been particularly upset except the patients to who we are have to say look we haven't got any of this stuff erm.. so and I think.. I don't think what I did was particularly unusual I think a lot of pharmacists have done exactly the same... This kind of problem in the supply chain has brought out the best and demonstrated this kind of commitment to the profession. I think it's going on a lot so that's one example" (FG11: Male, Large-multiple, Branch Manager)

6.3. Stage 1.2 Cognitive-interviews

As noted in section 7.4.2, all of the scales used in this study (stage 1.2) were pre-validated in other contexts. These scales made up the survey (Appendix 5.14) that was used subsequently in stage 2 and included in section one, the six-item (items 1,4,7,10,13 & 16) affective-professional commitment scale[9,122,175], the six-item (items 2,5,8,11,14 & 17) continuance-professional commitment scale[9,122,175], and the six-item (items 3,6,9,12,15 & 18) normative-professional commitment scale[9,122,175], with their items mixed together. Section two of the survey consisted of the six-item (items 1,4,7,10,13 & 16) affective-organisational commitment scale[9,122,175], the six-item (items 2,5,8,11,14 & 17) continuance-organisational commitment scale[9,122,175], and the six-item (items 3,6,9,12,15 & 18) normative-organisational commitment scale[9,122,175], again with their items mixed together. Section three of the survey consisted of a three-item (items 1-3) professional-withdrawal behaviour scale[9, 126], a three-item (items 1-3) organisational-withdrawal behaviour scale scale[9,126], a three-item (items 1-3) sector-withdrawal behaviour scale[9,126] and a three-item (items 1-3) reduction-in-hours withdrawal behaviour scale[9,126], with each scale remaining separated from each other within the survey section. Section four consisted of the seven-item (items 1-7) in-role behaviour scale[246,342], the seven-item (items 8-14) extra-role behaviour scale towards the individual[246,342] and the seven-item (items 14-21) extra-role behaviour scale towards the organisation[246,342], without separation within the section. Finally, background information items were also included in section five of the survey. An initial consultation process was instituted with regards to the survey, its instructions, items and layout, with the aid of experienced pharmacy workforce researchers based at the University of Manchester. Following this consultation process certain changes were made to the instruction based on prior successful use of these instructions in previous community-pharmacy research (Appendix 5.14).

The cognitive-interviews were conducted to gauge face and construct validity of the measurements scales in this survey in the community-pharmacy context in GB. Cognitive-interviews have been used successfully to aid in ascertaining how accurately

measurement scales captured their respective constructs as described in chapter 6. In all 21 cognitive-interviews were carried out, which was above the minimum number (9-12) commonly recommended[292,294]. As mentioned in chapter six the cognitive-interviews followed a standardised interview guide in which some probes about survey items were pre-scripted whilst others were more responsive[291,292,294,322] (Appendix 5.17). Immediately after each of the interviews, the audio recording of the interview was played back and notes were made[313] in relation to the standardised analytical taxonomy (Table 6.1) presented by Conrad and Blair[339], to code and tally potential and explicit problems within each cognitive-interview[318]. These were then subsequently assessed across the interviews, as mentioned in chapter five. Where an item was considered to be explicitly problematic by one or more interviewee and there was compelling evidence even on the basis of a single cognitive-interview, then this item would have been considered for modification or deletion[318,324].

An example of a potential problem being identified with Conrad and Blair's taxonomy may be illustrated by item 12 (i.e. Even if it were to my advantage, I do not feel that it would be right to leave my profession now) in section one. Here the interviewee CI12 appeared initially to not understand what was being asked (response stage 1) and therefore unable to judge accurately what information from memory was required and should be accessed to respond to the item (response stage 2), which was demonstrated by: "*for my advantage in terms [of], maybe of time, family wise or money, monetary /erm/ because I'm not, I think(4) I'm not doing so much work that it's (4). I can pick and choose what I'm doing at the moment, so in that sense, it doesn't apply to me, you know*" (CI12). Therefore, there appeared to be a potential category G problem as well as a potential category J problem, with this item. However, after a reappraisal, the interviewee said "*you can be right in the greater sense because I would be abandoning my profession, but I don't feel that at all, there are plenty of people coming through. So I suppose that's what it [the item] means.*" (CI12). From which, the interviewee subsequently went on to respond to the item, appropriately.

Table 6. 1 Respondent Problem Matrix reproduced and amended from Conrad and Blair 1996[339]

PROBLEM TYPE	RESPONSE STAGE		
	1) Understanding (i.e. comprehending what the item requires)	2) Task Performance (i.e. retrieving the required information from memory and deciding what an appropriate answer would be)	3) Response Formatting (i.e. fitting the answer to the choice of responses available)
Lexical (e.g. meanings of words or phrases, use of words or phrases, etc.)	A	B	C
Temporal (e.g. contextual understanding of the time period to which the time refers, etc.)	D	E	F
Logical (e.g. use of connectives, false presumptions, use of tautologies, etc.)	G	H	I
Computational (e.g. sentence structure, syntax, etc.)	J	K	L
Omission/ Inclusion (e.g. the scope of words of phrases being used, etc.)	M	N	O

In section one of the survey, 14 of the 18 items upon analysis, failed to illustrate any potential problems (Appendix 5.17). However, four items did provide evidence for possible problems, although not judged to be explicitly so. Again in item 12, this time with interviewee CI21, there appeared to be a potential category M problem. Likewise, in section one item one (i.e. My profession is important to my self-image), there appeared to be a potential category B problem, as this time interviewee CI21 understood the concept but found it difficult to access relevant information to decide on a quick response. In the same way, this potential problem also appeared to affect CI14 on item 1 as well. In item two (i.e. I have put too much into my profession to consider changing now) of section one, there appeared to be a potential category E problem as interviewee CI12 appeared to understand the concept but required further time to contemplate about the appropriateness of time spent in profession and the impact of impending retirement before arriving at an answer. Finally, in section one item 14 (i.e. there are no pressures to keep me from changing profession), there appeared to be a potential category I problem as interviewee CI08 required more time to arrive at a response owing to the perceived logical structure of the item.

In section two, 15 out of the 18 items analysed did not highlight any potential problems. Item two (i.e. Right now, staying with my organisation is a matter of necessity as much as desire) appeared to require two interviewees CI13 and CI19 to reappraise their initial thoughts on the item, and thereby reappraise their response. In both cases there appeared to be a potential category H problem, prior to their respective self-prompted reappraisals. For item 14 (i.e. If I had not already put so much of myself into this organisation, I might consider working elsewhere), with interviewee CI05 there seemed to be a potential category B problem owing to the difficulty expressed in responding to the item, although after contemplation a response was reached, whilst interviewee CI21 appeared to have found it initially challenging to choose the appropriate response from those provided (potential category C problem). Finally, in item 17 (i.e. One of the few negative consequences of leaving this organisation would be the scarcity of available alternatives) of section 2, there seemed to be a potential category G problem, as interviewee CI14 required some time to understand the item's logic before ascertaining the required information to decide the appropriate answer and then provide a consistent response.

In section three, all 12 items analysed, which made up the four withdrawal behaviour scales, were unable to detect any potential problems with the items. In section four, out of the 21 items analysed, the first seven items, which constituted the in-role behaviour scale, failed to evidence any potential problems. From the next set of seven items (8-14) in section four which constituted the extra-role behaviour towards the individual, five out of the seven items did not evidence any potential problems. However, in item 8 (i.e. Helps others who have been absent) there looked as if there was a potential category M problem as interviewee CI18, hesitated whilst fathoming the scope of the referent "other", prior to giving a response. In item 10 of section four (i.e. Assists supervisors with his/her work (when not asked)) there appeared to be a potential category N problem, as interviewee CI12 appeared to understand what assisting supervisor meant. However, interviewee CI12 had to think hard to identify the examples of the item's scenarios, from which the response could be formulated. A similar obstacle required overcoming when interviewee CI20 responded to the same item. From the final set of 7 items (15-21) in section 4, five of the items did not highlight any problems. Item 15 (i.e. Attendance at work is above the norm) of section four appeared to contain a potential category B problem, as interviewee CI15, initially found it difficult to think of what the "norm" would be in relation to this item, before providing a response. Finally, in item 21 of section four there appeared to be a potential category N problem, as interviewees CI03, CI14 and CI15, all understood the item but, took time in finding appropriate examples from which to decide their responses.

Participant of the cognitive-interviews were also asked to comment on the layout and the user interface of the survey. The survey was regarded as simple to understand:

> *"No the layouts fine, yeah, I mean it's very similar to the layout, you know, of all the things that I've seen in the past, and done in the past"* (CI03, Female, Large-multiple, Full-time, Branch Manager)

> *"I thought that was okay, yeah"* (CI06: Male, Large-multiple, Senior Branch Manager)

> *"But yeah it was very easy to follow and easy layout and everything"* (CI13: Female, Large-multiple, Branch Manager)

"It's fine yeah, it wasn't too long or anything; didn't take very long to answer"
(CI14: Female, Large-multiple, Part-time Pharmacist)

"No it was alright, it didn't take too long, ten minutes maybe and I didn't have to really stretch; I mean I didn't have to really think" (CI18, Male, Medium Multiple, Locum)

Table 6. 2 Analyses of cognitive-interviews using the Conrad and Blair taxonomy

PROBLEM TYPE	RESPONSE STAGE		
	Understanding	**Task Performance**	**Response Formatting**
Lexical	**A**	**B** (CI21_s1_01) (CI14_s1_01) (CI05_s2_14) (CI15_s4_15)	**C** (CI21_s2_14)
Temporal	**D**	**E** (CI12_s1_02)	**F**
Logical	**G** (CI12_s1_12) (CI14_s2_17)	**H** (CI13_s2_02) (CI19_s2_02)	**I** (CI08_s1_14)
Computational	**J** (CI12_s1_12)	**K**	**L**
Omission/ Inclusion	**M** (CI21_s1_12) (C118_s4_08)	**N** (C112_s4_10) (CI20_s4_10) (CI03_s4_21) (CI14_s4_21) (CI15_s4_21)	**O**

The analyses therefore showed that despite the few problems detailed above no explicit or obvious problems had been identified consistently by the participants or the researcher during the cognitive-interviews. However, a number of potential problems had been identified with some of the items of the survey, which required interviewees to reappraise the survey item, or exert greater levels of concentration on the survey items, prior to providing a response. These potential problems have been summarised in Table 7.2, and show that out of a total of 19 potential problems identified, six were from section 1, four were identified in section 2, there were none identified in section 3 and seven were identified in section 4 of the survey. The greatest number of potential problems identified occurred during the task performance stages of the response process, whilst the most identified potential or consistent problem type was Omission/Inclusion error. This said, as no explicit problems were identified during the analyses process, and following the recommendations of Conrad and Blair, all survey

items were retained in their current form, as Conrad and Blair warned against the practice of treating items which may have had potential problems as if they had explicit problems[318]. This view could be argued to be further bolstered as the survey items chosen had been shown previously to have strong psychometric properties in the literature (see Chapters 3 and 4).

6.4   Use of stage 1 findings in Stage 2

Stage 1.1 illustrated a number of key themes and antecedents which provided qualitative insights into GB community-pharmacists' perceptions of the TCM facets, withdrawal behaviours and work-performance behaviours, how contextually appropriate they were and how they related to their profession and place of practice. These were used subsequently to modify, where appropriate, the hypotheses (see section 4.5) generated from the GB community-pharmacy literature, which will be tested in stage 2, as recommended by Stanton et al.[343]. This is particularly salient to the hypotheses relating to locums/non-locums and independent/large-multiple community-pharmacists, owing partly to the comparatively limited research literature in this area in GB community-pharmacy to date. In addition, Stage 1.1 findings will be used to inform, along with relevant previous literature, some of the factor structures which will be tested in the quantitative construct validity analysis in stage 2 using confirmatory factor analysis. For example, stage 1.1 suggested that perceived organisational support was an important antecedent for both affective-organisational commitment and normative-organisational commitment. Therefore, confirmatory factor analysis will be used to also test a two factor structure of organisational commitment in which affective-organisational commitment and normative-organisational commitment constitute a single factor and continuance-organisational commitment, the second factor. Another example relates to the blurring of in-role and extra-role behaviour in GB community-pharmacists as suggested by stage 1.1. Here a single factor structure will be tested in addition to the original three factor structure.

The stage 1.2 findings will also inform stage 2 of this programme of research. The stage 1.2 study found no explicit problems with the survey as it is, in terms of item content. However, stage 1.2 did note some potential problems, although these were not consistently highlighted in the interviews. Nevertheless these potential problems would

be taken into account during the quantitative construct validation analysis in stage 2, as potential sources of miss-specification to be investigated, in the event that the confirmatory factor analyses provides sub-optimal fits of the constructs in the respondents' survey data. Stage 1.2 was also used to assess the layout and wording of the instructions included in the survey. The consultation phase of stage 1.2 found that some of the wording required minor amendments to make the contextually appropriate for use with GB community-pharmacists. These limited amendments to the instructions were found to be acceptable to the interviewees in stage 1.2 and would be taken forward and included in the survey to be used in stage 2. Finally, stage 1 will also be used to interpret the findings of stage 2.

6.5   Summary

This chapter presented the results of the qualitative data analysis of stage 1. It elaborated on the main themes which were perceived by the respondents to have an impact on development and/or maintenance of the various facets of professional and organisation commitment. The analysis also highlighted the relative applicability of the different types of commitments discussed to GB community-pharmacists. To this end it was found from the analysis that all forms of commitment discussed were appropriate and applicable to community-pharmacy, although some were found to be perceived as more prevalent than others in community-pharmacy. The analysis also provided evidence for the applicability of the withdrawal behaviours and in-role/ extra-role behaviours in the community-pharmacy contexts.

Section 6.3 reported on the face validity and construct-validity of the measurement scales used to measure the constructs of interest to the present research programme. It provided initial evidence of the aforementioned properties and paved the way for the use of the measurement scales in stage two of the research programme the method and analyses of which will be detailed in the next chapter, and whose results will be reported in chapters eight, nine and ten and discussed with the results from the present chapter, in chapter eleven.

7. Chapter 7 Stage 2: Methodology and Analyses

7.1. Introduction

The previous chapter reported on the qualitative analyses carried out on the data collected from focus-groups (stage 1.1) and interviews (Stage 1.2) as explained in chapter 5. It also highlighted how the stage 1 informed stage 2 of the research programme. Following on from this and in accordance with the rationale for the research design set out in chapter 4, this chapter shall detail the methodological strategy as well as the analytical vision employed, for stage 2. The chapter is divided into two broad sections with the first section dedicated to explaining the survey methodology employed in stage 2 of this programme of research. This section is further subdivided into four substantive methodological themes, namely the research sample, recruitment process, data collection, and research methodology issues. The second major section of this chapter is focused on elaborating on the quantitative analyses that were used in this programme of research. The second section will also report on the data screening and preparation methods and the initial analyses carried out to test the assumptions necessary for the subsequent analyses that will be reported in chapters 8, 9 and 10.

7.2. Research Sample

7.2.1. Sampling Frame

Community-pharmacists practicing in Great Britain (GB) were recruited for the purposes of stage 2 as they represented the largest sector in the pharmacy profession[296]. Research suggested that it has undergone significant changes in recent years, and has been found to be a sector in which pharmacists were more likely to engage in withdrawal behaviours[78] (see chapter 6).

7.2.2. Sampling Strategy

Stratified random sampling[280,287,344] was used to identify a research sample that was representative of the sampling frame[280,345], which adhered to the inclusion/exclusion criteria reported in Table 5.1, and was sufficiently large enough for the subsequent analysis to be performed. The potential respondents were identified through the Register

of Practicing Pharmacists formerly maintained by the Royal Pharmaceutical Society of Great Britain (in accordance with its relevant protocols). However, as a contingency, additional sampling strategies (snowballing techniques and its equivalents) were also considered but not deployed.

7.2.3. Sample size

There is a great deal of debate in relation to sample sizes particularly in relation to structural equation modelling (SEM)[346-348]. Acceptable sample sizes depend upon numerous factors[346-352] standard error, variance spread, goodness of fit tests, estimation method, communality, greater factor over determination, number of parameters, etc. The latter in particular has given way to a rule of thumb for the number of participants per parameter estimated ranging from 3 to 10[346,352-354]. Jackson[352] has studied the value of the ratio of the sample size to the estimating of parameters in comparison to absolute sample sizes. He suggests that absolute sample sizes provide a better effect size with more goodness of fit indices overall[352,355]. Overall, minimum samples have been forwarded ranging from 100 to 500+[346,353]. However, the seminal review by Anderson[349] suggests that a minimum sample of 150 is needed for parameter estimates that consisted of random error values low enough to be of practical use. There is also some evidence to suggest that a minimum sample of 200 participants will be satisfactory for CFA[352,356], particularly with high communality[350] and more than 3 indicators per factor[351]. The latter is salient due to the predicted high communalities based on prior research[38,164,197] that was also expected in this study. However, others have suggested that a sample size should be as large as possible as adequacy of sample size may only be truly known post-analysis[347,354,357,358].

A sample size calculation was decided upon owing to the large population size of approximately 17,922 eligible pharmacists extrapolated from the 2008 figures[49,78]. Therefore using 3% margin of acceptable error for E[359], 95% confidence level and critical ratio of 1.96[359] for Z(c/100), population size of 17,922 for N, an overestimated response distribution of 50% for r[359], the following formula was used (fig 7.1) to calculate the sample size[360]:

$$x = Z(^c/_{100})^2 r(100-r)$$

$$n = ^{N\,x}/_{((N-1)E^2 + x)}$$

$$E = Sqrt[^{(N-n)x}/_{n(N-1)}]$$

Figure 7. 1 Sample Size Calculation

This provided a minimum sample size of 1008 respondents. Therefore using a conservative estimate of the response rate of 40% gave a research sample size of 2523 which was used for stage 2. As this sample was very large there were no issues relating to the inability of the SEM to achieve a solution owing to sample size[346,349,352,353,356].

7.2.4. Response rate

A Total of 804 responses were received, between the start of the survey data collection period from the beginning of January 2011 when all the surveys were initially sent to the end of the survey data collection period, four months later at the end of April 2011. From the 804 responses, 91 were unusable for data collection with 34 returned as undelivered or having been posted to the wrong address, 44 returned unusable owing to retirement, one returned due to death and 13 declined to help citing a number of reasons ranging from lack of time to feeling stressed and unhappy with their practice. Of the 713 respondents that completed the surveys satisfactorily, 565 (79.24%) returned completed surveys corresponding to the initial 2523 survey packages sent in round one. A further 148 (20.76%) completed surveys were returned from the second round, consisting of 1932 survey packages, sent in late February 2011. This provided an overall response rate of 31.87% and an effective usable response rate of 29.02%.

The sample size fell short of the 1008 anticipated sample size calculated above. However, this was a highly conservative estimate and as sample sizes in structural equation modelling vary depending primarily upon parameters/degrees of freedom[358] amongst other attributes, it was deduced [348,349,361-363] that the sample size of 713 would be sufficient (minimum 200+ [348,349,361-363]) for the descriptive analyses, univariate

analyses, confirmatory factor analyses and the structural model analyses that will be reported in chapters 8, 9 and 10.

7.2.5. Representativeness of respondent sample

To assess how representative the respondent sample was a comparison was made between the socio-demographic characteristics of the research sample and the latest census data for community-pharmacists in Great Britain. Using binomial tests, Goodness of fit χ^2 tests and a bonferroni-adjustment of p≤0.05/6=0.0083 in Table 7.1 and Pearson's χ^2 tests and a bonferroni-adjustment of p≤0.05/4=0.0125 in Table 7.2 a significantly larger proportion of female community-pharmacists were found to have responded to the survey than males, when responses were compared to both the census data and those that did not respond. Similarly, significantly greater proportions of part-time community-pharmacists responded to the survey compared to both the census data and those that did not respond. In contrast, there was no difference in the proportion of locums that responded to the survey than those that did not, but a significantly smaller proportion responded compared to the census data. In terms of geographic location with Great Britain, there was no significant difference between those that responded and those that did not. However, there were significantly larger proportions of respondents from Scotland and Wales compared to the population of pharmacists in Great Britain. There was a significant difference in age between those that responded and the community-pharmacy census data with a greater proportion of older respondents (older three age categories). There was also a significant difference in the ethnic make-up of the respondents compared to the community-pharmacy population with a greater proportion of white responders and smaller proportions of ethnic minorities responding to the survey.

Table 7. 1 A Comparison between responders and community-pharmacy population as a whole using self-reported socio-demographic data and the latest published census data

	Responder	Population	Difference (%)	P-Value
Gender^ - (%)				
Male	40.75	46.0	-5.25	0.005
Female	59.25	54.0	+5.25	
Age^ - (%)				
29 years old or younger	9.65	20.1	-10.45	0.0001
30-39 years old	16.08	24.2	-8.12	
40-49 years old	30.85	24.3	+6.55	
50-59 years old	31.58	20.7	+10.88	
60 years old or older	11.84	10.7	+1.14	
Ethnicity* - (%)				
White	77.20	61.3	+15.9	0.0001
Asian	17.60	26.9	-9.3	
Black	1.73	5.4	-3.67	
Chinese	1.73	3.7	-1.97	
Mixed / other	1.73	2.8	-1.07	
Job-role^ - (%)				
Owner	10.75	12.26	-1.51	0.008
Manager	30.30	29.19	+1.11	
Relief	9.85	8.07	+1.78	
Second	8.36	9.16	-0.8	
Locum	32.99	35.87	-2.88	
Non-store	2.39	2.33	+0.06	
Other	5.37	3.11	+2.26	
Type of hours^ - (%)				
Part-time	40.96	32.3	+8.66	0.0001
Full-time	59.04	67.7	-8.66	
Country of practice* - (%)				
England	83.15	85.4	-2.25	0.005
Scotland	10.68	9.6	+1.08	
Wales	6.17	5	+1.17	

^2008 RPSGB Census. *2011 GphC register data

Table 7. 2 A Comparison between responders and non-responders from the sample frame using census data supplied with sample from RPSGB

	Not completed N=1825 (71.91%)	Completed N=713 (28.09%)	P-Value*
Gender - n (%)			
Male	955 (52.33)	413 (58.58)	0.005
Female	870 (47.67)	292 (41.28)	
Type of working - n (%)			
Locum	575 (31.51)	256 (36.51)	0.018
Non-locum	1250 (68.49)	448 (63.55)	
Type of hours - n (%)			
Part-time	689 (37.75)	296 (42.11)	0.002
Full-time	1136 (62.25)	407 (57.89)	
Country of practice - n (%)			
England	1402 (83.16)	550 (83.08)	0.651
Scotland	184 (10.91)	67 (10.69)	
Wales	100 (5.93)	45 (6.8)	

*Pearson Chi Squared test

On the whole whilst the general socio-demographic trends between the respondents and the non-respondents and between the respondents and the community-pharmacy population appear to be similar (e.g. greater proportions of female community-pharmacists, white community-pharmacists and part-time community-pharmacists in the respondents sample, non-respondent sample and the community-pharmacy population), there are several significant differences which may possibly introduce potential bias.

7.2.6 Respondents sample description

The respondents sample was stratified by subgroups of interest in an attempt to reveal additional idiosyncrasies of the respondent sample using a bonferroni-adjustment of p≤0.005. According to Appendix 7.1 when the respondent sample is stratified by gender, it was found that a greater proportion of females were younger, with around 30% under 40 years old compared to around 20% of males, with over half of male respondents over 50 compared to around 38% of females. By far the vast majority of male pharmacists, over 80%, considered themselves to be the main bread winner in their house hold yet only a third of female pharmacists considered themselves to be the main bread winner. Almost 40% of male pharmacists had been in community-pharmacy over

40 years whilst less than 20% of females had been in community-pharmacy for the same number of years. Almost 20% of females had been in community-pharmacy for less than 10 years whilst only around 12% of males had been in community-pharmacy for 10 years or less. This trend was similar in terms of number of years qualified when stratified by females and males. There were almost four times as many male owners (17.31%) than female owners. However, there were also almost three times as many female second (24.63%) and relief pharmacists compared to male equivalents (7.4%) in the respondent sample. There were similar proportions of manager and locum community-pharmacists between males and females. There were considerably more female community-pharmacists (64.39%) compared to male community-pharmacists (48.06%). The majority of female pharmacists worked in large-multiples whilst only 38.7% of males worked in large-multiples. Twice the proportion of males worked in more than one type of organisation compared to females. Almost half of all males worked 41 hours whilst less than 25% of females worked over 41 hours. In addition, three times as many males worked over 50 hours compared to females. Half of all female pharmacists worked part-time hours whilst less than 30% of males worked part-time hours

When the respondent sample was stratified by being either a white respondent or being an ethnic-minority respondent, Appendix 7.2 found the proportion of ethnic-minority respondents who were below thirty were twice as large as white respondents. Almost half of white respondents were over 51 whilst only 26.75% of ethnic-minority respondents were 51 years old or over. Greater than 40% of white respondents had no dependents compared to around a quarter of ethnic-minority respondents. Over twice the proportion of ethnic-minority respondents had both younger and older dependents compared to white respondents. Almost 30% of ethnic-minority respondents had been qualified for less than 10 years compared to around 11% of white respondents. Around 15% of ethnic-minority respondents had been qualified for more than 40 years compared to over 40% of white respondents. Approximately 46% of ethnic-minority respondents worked over 41 hours per week compared to around 29% of white respondents, with around 28% of ethnic-minority respondents working part-time compared to almost 45% of white respondents.

From Appendix 7.3 the proportion of full time respondents below the age of 40 was twice the size of part-time respondents below the age of 40. This said the proportion of part-time respondents over the age of 60 was four times the proportion of full-time respondents. Almost two third of full-time respondents were the main breadwinners compared to only a third of part-time respondents. Part-time respondents were over four times more likely to be not the breadwinner than full-time respondents. A greater proportion of part-time respondents were also joint breadwinners compared to full-time respondents. Four times the proportion of full time respondents had been qualified for less than 10 years than part-time respondents, whereas over 45% of part-time respondents had been qualified for over 30 years compared to only about 25% of full-time respondents. Interestingly the numbers were less variable in relation to years in community-pharmacy between part-time and full-time respondents. The single largest proportion of full-time respondents was managers (42.01%) compared to part-time respondents (10.95%). However, almost half of all part-time respondents were locums, whereas only a fifth of full-time respondents were locums. In addition the proportion of independents was four times higher in full-time respondents compared to part-time respondents. Indeed, the proportion of full-time employees (64.62%) is far higher than part-time employees (47.35%).

According to Appendix 7.4, almost 60% of all respondent locums were aged over 50 years old whilst only around 36% of non-locums respondents were over 50 years old. A greater proportion of non-locum respondents (29.18%) were aged below 40 compared to locums (17.67%). Over 46% of locums respondents had no dependents compared to around 35% of non-locum respondents. More than half of non-locums had young dependents compared to around 38% of locum respondents. Greater than 50% of locums respondents had been qualified for over 30 years, compared to just over 25% of non-locum respondents, whereas 25% of locum respondents were qualified for less than 20 years compared to over 38% of non-locum respondents. Over 55% of non-locum respondents worked in a large-multiple compared to less than 30% of locum respondents, with over a quarter working in independents compared to around about 17% of non-locums. More than 40% of non-locums worked over 40 hours with around 10% working over 50 hours compared to 17.5% of locums working over 40 hours with only about 3% working over 50 hours. Greater than 60% of locums worked part-time whilst around 70% of non-locums worked full-time hours. Twice the proportion of

locums (18%) had a job outside of community-pharmacy compared to non-locums (9%).

Appendix 7.5 details the final stratification of the respondents sample by status as independent/small-chain pharmacy respondent or large-multiple pharmacy respondent. It revealed that two thirds of large-multiple respondents were female compared to just over half of independents/small-chain respondents. Around 35% of large-multiple respondents were under the age of 40 compared to only around 14% of independents/small-chain respondents. About 55% of independent/small-chain respondents were over the age of 50 compared to around 34% of large-multiple respondents. Twice the proportion of large-multiple respondents (24.68%) was minor-breadwinners compared to independents/small-chains respondents (12.75%). Independent/small-chain respondents tended to be older with less than 20% being qualified for less than 20 years compared to over 40% of large-multiple respondents. Twice as many respondent managers worked in large-multiples (36.11%) compared to independent/small-chains (14.76%). Approximately, 28% of large-multiple respondents were relief or second-pharmacists compared to only around 6% of independent/small-chain respondents. Around 40% of all independent/small-chain respondents were locums whilst only around 19% of large-multiple respondents were locums. Finally, around 80% of large-multiple respondents were employees whilst over 70% of independent/small-chain respondents were non-employees.

7.3. Recruitment procedure

7.3.1. Recruitment Promotional Work

In stage 2, in addition to the recruitment promotional work described in section 5.3.1, online pharmacy forums such as the Pharmaceutical Journal Online Forum and www.pharmacy-forum.co.uk, etc., were posted on, about the PhD research progress. Online social networks such as twitter and Facebook were used to disseminate and discuss the progress of the PhD research as a whole.

7.3.2. Recruitment process

Some pharmacists were able to self-select (i.e. visited the research blog and became interested in the research, etc.). Those pharmacists who self-selected onto the study (if satisfying the inclusion/exclusion criteria) were provided with a web-link (Appendix 7.6) from which they were able to complete the survey online, or an alternative hardcopy. Community-pharmacists identified by the sampling strategy (see section 7.2.2) were sent a Stage 2 participants' pack by post containing an invitation letter (Appendix 7.7) introducing the study and its intentions and objectives, a participant's information sheet (Appendix 7.8), a copy of the survey entitled "Characterising and understanding professional and organisational commitment in CPs" (Appendix 7.9) and a freepost return-addressed envelope. The Stage 2 participants' pack also contained information on how to complete the survey online at www.mhs.manchester.ac.uk/surveys. After approximately four to six weeks, a reminder letter (Appendix 7.10) and a second stage 2 participants' pack was sent to those potential participant identified that had not yet replied. This mail out was determined by the initial response to the original survey packs sent, to determine that the final sample was representative and sufficient for the purposes of analyses.

7.4. Data Collection

7.4.1. Introduction

In research it is almost always a necessary requirement to collect data in order to achieve the research objectives[278,287,364,365]. Cross-sectional self-report surveys are one of the simplest and most time efficient forms of data collection available, and used widely in the vast majority of disciplines[235,287,301,345,365]. They also provide, if well-constructed, the least amount of manual data entry on to a database for analysis[278,287,364]. Surveys are very flexible and can take many different forms of composition and response; the latter which can be broadly split into closed and open-ended response formats[278,287,364,365]. They have also traditionally been paper based, and sent by post to the research sample of interest[365]. However, recently with greater accessibility of the internet in developed economies, surveys are now hosted online and sent via email in addition to by post[343,366].

However, as with many data collection methodologies there are some drawbacks to consider[278,287,364]. There is no real recourse to verify the veracity of the responses[278,287,364]. There is no guaranteed way of knowing whether the survey was understood sufficiently when it was completed[278,287,364]. However, such concerns may be minimised through the use of cognitive-interviewing as reported in chapter six. Responses themselves may not necessarily provide the full picture owing to the restrictive response format required in many survey items[278,287,364]. Most surveys are not always completed on time or completely[278,287,364]. Those who did not reply, there is no guarantee that they would have responded similarly to those who did respond to the survey[278,287,364]. Despite this, surveys are still considered to be the most effective way of gathering information from a large number of individuals in a relatively short period of time[287]. A number of the aforementioned issues can be minimised through the use of appropriate and psychometrically sound survey scales, improved recruitment practices and the use of sophisticated statistical analyses, which have been built up over several decades[291,293,301,321,337,343,367-378].

One pertinent issue of the present methodology is the cross-sectional nature of the survey which traditionally precludes the presumption of causality[287,379]. Whilst there is a significant body of evidence which suggests that professional and organisational commitment may have an impact upon the chosen outcome measures such as professional-withdrawal or organisational-withdrawal[10,15,38,103,127,128,150,152,192,201,271,380-385], the cross-sectional nature of the survey design adopted here would be unable to provide categorically evidence for this.

7.4.2. Choice of constructs

Chapters 4 and 5 have illustrated the extensive nomological network of work-related commitment, withdrawal behaviours and work-performance behaviours. There are a number of constructs which have been found to be related, differentially to work-related commitment and withdrawal behaviours or work-performance behaviours. For instance, as illustrated in chapter 3, job-satisfaction and job-stress have been found to be outcomes of work-related commitment, whereas perceived organisational support and psychological contract have been found to be both antecedents and outcomes of work-

related commitment in other contexts. It may be argued as useful to control for the influence of such constructs in the subsequent analysis. However, within the current programme of research a number of restrictions influenced the number of factors that could be accommodated. One such constraint was the size of the survey, previous research in community-pharmacy in GB has found that the average response rate is often relatively low (see chapter 2) owing to a variety of dynamics such as community-pharmacists not having the time to complete them, being put off by the length of the survey, etc. Therefore, the survey was thought of being most likely to receive the largest response with the minimum feasible number of constructs being surveyed. Another restriction was the finite resources available for this programme of research, as a larger survey would have meant additional cost of producing the survey. Related to this, additional numbers of constructs would potentially require larger sample sizes to accommodate the larger and theoretically more complex models in the analyses, thereby increasing costs further. However, the use of only the central constructs as detailed in section 7.4.3 and the exclusion of the aforementioned control-constructs represent a limitation of this programme of research, the implications of which will be addressed in chapter 11

7.4.3. Survey Package

The survey package consisted of the following sections as detailed in chapter 3 and 4:

- The TCM professional and organisational scales appear to display strong construct validity and reliability in relation to the profession and organisation[38,145]. In addition both the TCM organisational and professional scales had different item constructions between the forms of commitment (e.g. between the two affective scales, etc.), rather than substituting the target from one scale form to the other[145]. Professional Commitment[9, 122], contained 3 scales of Affective Commitment (6 items), Normative Commitment (6 items) & Continuance Commitment (6 items), (see chapter two & Appendix 7.9). Organisational Commitment[9,122], contained 3 scales of Affective Commitment (6 items), Normative Commitment (6 items) & Continuance Commitment (6 items), (see chapter two & Appendix 7.9)

- The measurement of the withdrawal behaviours took the form of a 3 item scale based on Mobley's 1977 theory[260] relating to withdrawal cognitions. Blau in

1985 & Meyer, et al. in 1993 have successfully used the three item scale in measuring organisational-withdrawal and professional-withdrawal, as well as other withdrawal constructs by changing the referent/focus of the items. The studies have shown strong validity and reliability[9,15,126-128,233,370,386]. Therefore, the present research included Professional-withdrawal, Organisational-withdrawal, Sector-withdrawal, and Reduction of hours each containing 3 items (see chapter four & Appendix 7.9)

- The Anderson and Williams developed a seven item measure of job in-role behaviour, seven item scale of individual orientated extra-role behaviour and seven item scale of organisation orientated extra-role behaviour; rated on a five-point likert scale[246], were included in the present research. An amendment by Jepsen et al was used to improve contextual relevance, in which the original item 16 (i.e. A great deal of my time is spent on personal phone calls)[246] of organisation orientated extra-role behaviour, was replaced by "A great deal of my time is spent on personal phone/email/other communications"[342]. Whilst, the original scales were rated by managers[246,387], self-rating has also been used successfully[342,388-394]. It was the latter which was of interest here, ascertaining how community-pharmacists perceived themselves, how they felt about their profession and workplaces as well as how they felt, perceived and responded to their jobs.

- A demographic survey which contained 14 items (see Appendix 7.9)

7.4.4. Ethical Issues/Limitations

The actual study subject matter in itself is neither obviously distressing nor controversial. The Stage 2 (ref:10273) studies achieved ethical clearance having been reviewed by the University of Manchester's Committee on the Ethics of Research on Human Beings. As stated in chapter five should the participants have been unsure about the research study and their participation in the study they were actively encouraged in the very first paragraph of the participant's information sheet to satisfy themselves prior to participating, by both contacting the researcher and/or others independent of the research. Also each participant had the right to withdraw at any time from the research project altogether without having to have offered a reason. This was made explicitly

clear on the participant's information sheet. This would have been immediately acted upon and the individual's data removed from the study should the individual have requested this.

7.5. Analysis Software

SPSS 16, SPSS 19, SPSS 20 and STATA 11.2 were used for the purposes of data entry, descriptive statistics and initial univariate analyses. AMOS 16 & AMOS 19 were used for confirmatory factor analysis and structural equation modelling. MS Excel spreadsheets were used for additional calculations of divergent and convergent validity[395], comparison of correlational analysis[396] and pooling of multiply-imputed datasets for the structural equation models[397].

7.6. Testing of Assumptions (Initial Analyses)

7.6.1. Accuracy of Data file

It is argued by some that the ideal would be to have the survey double-entered by at least two separate individuals, which can then be compared, and the errors eliminated[398]. However, others have found that there appears to be no substantial added value, which is not within the margin of error, between using single-entry and double-entry[371,399]. Owing to time constraints and cost, a balance may be struck, whereby each survey is entered and then the same survey immediately compared (post-entry) with the corresponding survey entry in the dataset, to check for errors (Entry-check 1)[400,401].

Following the initial round of data input (Entry-check 1), a 10% sample was then randomly selected and checked against the corresponding entries in the data file (Entry check 2)[402]. The rule of thumb states that should there be more than one per-cent of errors, then another 10% should be randomly selected and checked by sight[402]. This yielded 72 surveys that were then checked. In addition, frequency tables were also used to identify where there may have been an entry of data which could be considered to be beyond the acceptable entries for the individual items (Entry-check 3)[364,403-408]. The post-entry data-checks suggested that there were 8 errors (0.01%), which were below

the 1% error threshold to trigger a further round of data-entry checking (using entry-check 2). Entry-check 3 did not add not reveal any further errors (see Appendix 12).

7.6.2. Missing Data

The pattern of missing data was examined first (see Appendix 7.11 for discussion) and it revealed that the vast majority of the observed variables contained at least one missing value in the dataset (see Appendix 12). Furthermore, almost a quarter of cases contained at least one missing value. However, the missing values accounted for only 1.5% of the total values imputable in the dataset. Overall, the dataset did not appear to be completely missing at random (MCAR) as the Little's MCAR test resulted in a significant χ^2 value of 4699.381 with 4020 degrees of freedom[409]. This, added to the broadly equal variation in percentage of missingness between the different individual observed variables, along with the fairly consistent occurrences of the most frequent patterns of missingness, (except for no missing values), together indicated that the data may be viewed as missing at random (MAR). There was also evidence of the more non-monotone nature of the missingness as well[409]. As a result multiple imputations were conducted using the Fully Conditional Specifications method in order to arrive at five complete multiply-imputed datasets, which could then be used in the subsequent analyses[409](see Appendix 7.11 and Appendix 12).

Univariate correlations using the five multiply-imputed datasets were conducted in SPSS 19, whereas the linear regression analyses were conducted in STATA11.2. Following the testing of the subsequent SEM models in all five datasets in AMOS 19, the regression (both standardised and unstandardised), covariance, variances and correlation coefficients from the five multiply-imputed datasets were combined along with their corresponding standard errors in order to provide pooled estimates for the SEM models[410,411]. This was done by utilising a pre-prepared MS-Excel file created by Tufis[397], in which the formulas[412,413] cited by Arbuckle[410] were implemented.

7.6.3. Outliers

As the main quantitative analysis of the present research involved multivariate analysis, it was deemed appropriate to assess the prevalence of any multivariate outliers in the

dataset as recommended by Tabachnick and Fidell. This was done primarily by inspecting the Mahalanobis distances calculated using AMOS[408,410,411,414]. An inspection of professional commitment, organisational commitment, withdrawal behaviours and work-performance behaviour revealed eight multivariate outliers whose Mahalanobis distances were sufficiently different from the other Mahalanobis distance values as to be considered for omission[408,410, 411,414] (see Appendix 12). Therefore, observations 80, 342, 422,627, 504,126, 209 and 317, which correspond to the order in which the cases were inputted in the dataset, were omitted from the dataset and any further analyses.

7.6.4. Normality

As recommended by Tabachnick and Fidell, multivariate normality (i.e. the distribution of each linear combination of each variable with each other follows a normal distribution) is an important assumption in SEM[408,410,411,414]. Whilst, Tabachnick and Fidell offer transformations of the dataset as ways of increasing the normality of the dataset they also acknowledge that the Central Limits Theorem suggests that issues of normality will be more immune to the effects of violations in larger samples sizes[408,410,411,414]. In addition, as kurtosis has a greater impact on variance and covariance testing, ergo SEM, then skewness, multivariate kurtosis was assessed instead, using the Mardia's normalised estimate to assess multivariate normality[410, 411]. None of the variables professional commitment, organisational commitment withdrawal behaviour or work-performance behaviour consisted of Mardia's normalise estimate values of less than 5, as would be indicative of a multivariate normal distribution[410,411] (see Appendix 12). Therefore, consistent with section 7.7.3 bootstrapping techniques were used in the SEM to compensate for this violation of multivariate normality in the dataset.

7.6.5. Linearity and Homoscedasticity

Both Linearity (i.e. linear relationship between each variable pair) and Homoscedasticity (i.e. spread of observations are similarly and consistently distributed for a pair of variables) are related to multivariate normality[408,410,411,414]. For instance to ascertain evidence of linearity in a simple scatterplot graph both variables must be

normally distributed[408, 410, 411, 414]. In a similar way, to ascertain evidence of homoscedasticity both variables tend also to be normally distributed[408,410,411,414]. However, little evidence of this was ascertained in the series of scatterplots carried out on each pair of variables (see Appendix 12). Only paltry evidence for Linearity and Homoscedasticity was found for affective-professional commitment with normative-professional commitment, affective-professional commitment with affective-organisational commitment, continuance-professional commitment and normative-professional commitment, continuance-professional commitment with continuance-organisational commitment, normative-professional commitment with affective-organisational commitment, normative-professional commitment with normative-organisational commitment; with only adequate evidence found for affective-organisational commitment with normative-organisational commitment[408,410,411,414]. This is consistent with section 7.6.4 in which the assumption of multivariate normality was found to be violated.

7.6.6. Multicolinearity

As recommended by Tabachnick and Fidell the Multicolinearity (i.e. the extremely high correlations between two observed variables, etc.) would be a threat to any subsequent analysis[408,410,411,414]. In addition, Tabachnick and Fidell also highlight the problematic nature of a singularity to the data as well, which suggests that out of the two observed variables, one is a combination of the other observed variable plus one other observed variable[408,410,411,414]. Tabachnick and Fidell suggest that a bivariate correlation of above 0.9 is indicative of Multicolinearity and thus one of the offending variables may be considered for deletion [408,410,411,414]. Therefore correlations were estimated between each of the variables in SEM using AMOS-19. Owing to the issues relating to violations of normality, the analysis was bootstrapped (see section 7.7.3). Pooled correlations of the five multiply-imputed datasets revealed that the only correlation which raised concerns in this context was between affective-organisational commitment and normative-organisational commitment with a value of .907, although there were also other very large correlations such as that between in-role behaviour and sector-withdrawal behaviour with a value of 0.868 (see Appendix 12). These were addressed further in chapter 9 and discussed further in chapter 11.

7.6.7. Common Method Variance

Another issue is that of common method variance, as the entire survey is self-reported including the independent and dependent variables. However, it may be argued that issues relating to perceptions and subsequent actions based upon those perceptions would be difficult to be determined accurately by anyone other than the individual. Therefore, whilst a single method of data collection, at this stage is always considered a limitation, it may be viewed that it is still the best alternative available in the interests of the research outcome. This said it is still important to ascertain the level of potential impact that common method variance may have on any subsequent analysis, if at all[378,415-420]. To ascertain this, a common latent factor test[378,415-420] was conducted in which all of the latent variables were covaried with each other, in a confirmatory factor analysis using bootstrapped parameters, and each of their indicator variables were regressed on to by an additional single variable (see Appendix 12). The latter unstandardised regression coefficients were all constrained to equality, and the resultant coefficient estimates were then squared to provide an estimate of the shared common variance associated with all of the latent variables within the model; ergo all self-report measurement scales used[378,415-420]. A pooled unstandardised regression value of .264 revealed a relatively comfortable shared common variance of approximately 7%[378,415-420]. The implications of this were addressed further in chapter 11.

7.7. Descriptive Univariate Analyses

Descriptive analyses in the form of the Kruskal-Wallis tests of various socio-demographic background variables were performed and reported for each of the independent commitment variables and dependent outcome variables, along with their corresponding means and standard deviations. This would reveal if there was any significant difference in the means of the independent or dependent variables of community-pharmacists based upon their socio-demographic sub-group memberships. In addition spearman's correlational analysis was also performed for the research sample to ascertain the relationships between the independent and dependent variables, as well as by sub-group to ascertain whether subgroup membership influenced the strength and direction of the relationship between the variables. Fisher's r-z

transformations were used to assess significant difference between correlations of interest .

A series of linear regression models were performed for each of the outcome variables individually, to assess the unadjusted predictive value of each of the independent commitment variables, followed by an assessment of the predictive value separately for all professional commitments variables, all organisational commitments, and for all professional and organisational commitment variables. Starting with all commitment variables as predictors a series of linear regression models were performed for each of the outcome variables, in which all commitment variables were subsequently adjusted by each socio-demographic background variable. This was done to ascertain the predictive value of each of the commitment variables once they had been adjusted for the other commitment variables and the socio-demographic variable. A final 'fully adjusted' multivariable linear regression model was tested to ascertain which of the commitment variables were predictive of the outcome variable when all of the background socio-demographic variables were taken into account. This univariate modelling was carried out for each of the outcome variables separately. For each commitment variable an unstandardised coefficient (B) was reported for each of the models as well as a standardised coefficient (β) for each of the fully adjusted models. Adjusted r-squared values (compensating for number of independent variables) were also reported for each model to indicate the percentage of the outcome variable that was explained by the model. Five multiply-imputed datasets were used for the regression analysis using pooled coefficients and parameters calculated and analysed in STATA 11.2 SE.

Bonferroni-corrections[408] were used in the interpretation of the Kruskal-Wallis tests and correlational analysis in order to compensate for the increase in the potential for type-one errors or false-positive associations being significant. However, the bonferroni-correction is very conservative and imposes a stringent p-value which may result in a potential increase in false-negatives or type-two errors. This said the bonferroni-adjustment ensures that the actual $p \leq 0.05$ threshold is preserved in the face of multiple significance testing[408]. The bonferroni-corrections were calculated by dividing the p-value by the number of tests for the same population. For example, the comparison of means of the independent and dependent variables by age category, using

the Kruskal-Wallis tests, resulted in 15 separate tests being performed. Therefore, the adjusted bonferroni p-value was 0.05/15=0.003. Hence, the value of 0.003 was used as the largest p-value acceptable to indicate a significant difference amongst the age categories.

7.8. Structural Equation Modelling

Structural Equation Modelling (SEM) is an extremely powerful and yet simple set of techniques[353,411,421,422]. Instead of focusing on the individual case level of a dataset, in the examination of independent and dependent variables, SEM focuses instead on the patterns across the research sample in terms of its covariance (i.e. unstandardised) coefficients in the covariance-matrix and its correlation (i.e. standardised) coefficients in the correlation-matrix[422]. Fundamentally, SEM is concerned with assessing the pattern of covariance/correlation coefficients within the research sample with the pattern of implied covariance/correlation coefficients specified by the a-priori model being tested in the research sample[422]. Where the model is good and fit's the data of the research sample very well, the patterns of covariance coefficients and correlation coefficients between the research sample and the a-priori model would be practically the same as would be illustrated in their respective covariance-matrices and correlation-matrices[353,411,421,422]. However, in a lot of instances finding a perfect match between the matrices of the research sample and the implied matrices of the a-prior model is difficult to achieve, particularly in real world applied research[408,411,423]. The discrepancies between research sample and the implied a-priori model matrices are termed the residual coefficients[353,411,421,422].

Broadly speaking there are two types of model in SEM, the measurement model which assesses the linear (regression coefficients) relationships between the indicator/observed variables (e.g. individual items of a measurements scale) and their latent variables (i.e. the theoretical construct upon which they load, e.g. affective-professional commitment, etc.), as well as unmeasured covariance coefficients between the latent variables themselves[353,361-363, 379,408,411,421,422]. In essence this type of model, which can also be viewed as a Confirmatory Factor Analyses (CFA) model, assesses how well the latent variables' underlying construct domains have been represented by their respective indicators[353,361-363,379,408,411,421,422]. The second type of SEM model is the structural

model which assesses the relationships between the variables including both exogenous (independent) and endogenous (dependent) variables, that are connected via direct effects linear regression coefficients[353,361-363,379,408,411,421,422]. In the current context all of the variables being assessed in the structural model are latent variables (unobserved).

Several researchers have commented upon the advantages of SEM over other forms of statistical analyses such as conventional multiple-regression owing to the greater flexibility of its assumptions, the modelling of error terms, the use of multiple indicators to reduce measurement error, the modelling of mediating variables, the testing overall model fit, as well as testing across numerous samples and comfortably accommodating problematic datasets (e.g. non-normal data, missing data, etc.)[353,361-363,379,408,411,421,422]. In addition, the pictorial representations of the models in the current crop of SEM software means that researchers are able to actually visualise how the variables in their models connect to each other[410,424].

Some other important aspects of SEM that are worth further elaboration in relation to its application in this thesis include: Estimation methods, model fit indices, bootstrapping for non-normal data and model modifications.

7.8.1. Estimation Method

The coefficients of the SEM model can be estimated using a variety of methods that are available in SEM programs such as AMOS[410] and in general provide similar results[379,408]. These include Maximum Likelihood Estimation (ML), Generalised Least Squares Estimation (GLS), Unweighted Least Squares Estimation (ULS), Scale-Free Least Squares Estimation (SFLS) and Asymptotically Distribution Free Estimation/Weighted Least Squares (ADF/WLS) amongst others[361-363,408,410,411,421,424-426]. However, by far the most commonly used, recommended, and robust is the ML method[354,379,411,424-428], even though it requires the condition of the data being multivariate normal, to be satisfied[361,362,374,408]. Violations of this condition may bias and distort the ML and GLS standard errors elicited[362,374,411]. Thus, some researchers opt for ADF as an alternative as it does not require the input data to be multivariate normal in distribution[357,379,411]. However, ADF requires substantially large sample sizes for its estimated coefficients to

attain adequate dependability[357,379,411,429]. However, the ML estimation method was used in this programme of research, owing to its superior performance[354,379,411,424-428].

7.8.2. Model Fit Statistical Indices

Fit statistics are one of the main ways in which the strength and acceptability of the a-priori SEM models are assessed against the research sample data[361-363,379,408,410,411,429,430]. There are several fit statistics to choose from (see Appendix 7.12 for discussion) with programs such as AMOS reporting upwards of 25 different fit statistics for any single SEM model[379,408,410,411,430]. However, despite the voluminous amounts of literature dedicated to the subject there is only little consensuses about which are the best fit statistics to use and report[379,411,430]. This consensus revolves around the use of the Standardised Root Mean Squared Residual (SRMR), the Tucker-Lewis Index (TLI), the Comparative Fit Index (CFI), the Root Mean Squared Error of Approximation (RMSEA), and the x^2/df as the most widely advocated and reported fit statistics, owing in part to the seminal work of Hu and Bentler[425,426]. As such these were used as the fit statistics this analysis, along with the Expected Cross-Validation Index (ECVI) to compare fit between models[379,411].

7.8.3. Bootstrapping for non-normal data

Bootstrapping (see Appendix 7.13 for discussion) is a highly useful method that can be used amongst other things to provide robust estimates when the condition of multivariate normality has been violated[356,362,379,411,431-435]. The Bollen-Stine bootstrap (BSB) p-value is considered as an alternative to the ML x^2 p-value as it mitigates the influence of non-normal data when using bootstrapping techniques[433,435-437]. As recommended a combination of the ML estimation and bootstrapping techniques with the generation of around 500 bootstrapped samples were used[379,410,411,431,438]; with the bootstrapped standard errors and p-values for the parameter estimates reported in the places of the ML equivalents[379,410,411,431,438].

7.8.4. Model Modification

Model modification is viewed as an indispensable tool to aid in the improvement of a seemingly miss-specified SEM models. It can be employed in both the measurement model and the structural model and can take a number of different forms focusing on different information which would aid in the identification of a potential misspecification (i.e. less than optimum values for the selected fit statistics). Schumacker and Lomax[363], along with Loehlin[361], Arbuckle[410], Byrne[411], Kline[362] amongst others have provided detailed and largely consistent guidance on this subject (see Appendix 7.14 for a discussion of model modification). Therefore, in accordance with the aforementioned researchers, the theoretical underpinnings of the model was key to any subsequent modification of the model made as otherwise the modification may be potentially spurious as it may only have held in this particular research sample. In addition as has been advocated where both measurement and structural models were tested, the measurement model was examined separately first, in the assessment of model miss-specification, prior to the re-assessment of the structural model. Moreover, all modifications were cross-validated as previously recommended by splitting the existing sample randomly in half, performing the appropriate re-specification of the model until satisfactory, in one half, and then assessing whether the model still holds in the other half[414].

7.9. Assessing the Psychometric Properties of the measurement scales

The psychometric properties of the measurement scales were assessed in order to validate the measurement scales detailed in section 7.4.2, in the community-pharmacy context in GB (see Appendix 7.15 for longer discussion). This was done by assessing construct validity (i.e. the degree to which a construct is measured satisfactorily by a scale designed specifically for its measurement)[414] using CFA. Section 6.3 detailed the qualitative assessment of content validity (i.e. the level of consistency between the item content and construct definition) and construct validity[414]. Using the guidance recommended by Hair and colleagues[414] Construct validity was also assessed quantitatively by examining convergent validity (i.e. the degree to which the construct is populated by converging indicators which share a substantial proportion of common variance together)[414] through the inspection of the standardised regression loadings of

the indicators of the latent variable, and an inspection of the average variance extracted (AVE), or the averaged variance of the indicators explained by the indicators' latent variable. Finally, composite-reliabilities were also calculated using bootstrapped standard-errors to account for the non-normality.

Hair and colleagues[414] also recommended examining discriminant (or divergent) validity (i.e. the degree to which it does not correlate positively with dissimilar constructs and the degree to which its indicators do not cross load on other constructs)[414] as well. Therefore, for each latent variable a number of different factor structures were assessed to ascertain whether the a-priori factor structure associated with the latent variable fitted the data better than a non-conventional alternative. This method was also used with the measurement model as a whole. In addition discriminant validity was assessed by assessing the potential for cross-loading of standardised regressions of each of the latent variables. A Final way used to assess discriminant validity was to assess the aforementioned AVE of two latent constructs of interest and compare them with their squared correlation estimate (SC) between the two latent variables. Where required and theoretically sound to do so, modifications were made to improve model fit as detailed in section 7.7.4.

The convergent validity and discriminant validity indicators, composite-reliability, AVE and SC were all calculated by the utilisation of an MS-Excel file created by Gaskin[395], in which the formulas provided by Hair and Colleagues[414] were implemented.

7.10.   Hypotheses Testing

As is recommended by Anderson and Gerbing[349] and subsequently advocated by various stalwarts of SEM, the two-step approach (i.e. examine the measurement model separately and prior to the assessment of the structural model) is used in the hypotheses testing phase of the analyses[357,361-363,374,379,408,411,421]. This is acknowledged as a superior method to handling SEM for hypotheses testing then a single step method in which both the measurement and structural model are examined simultaneously from the start[357,361-363,374,379,408,411]. However, as Kline points out there is no "gold standard" (pp. 268) in SEM, when it comes to hypotheses testing[362]. The hypotheses were tested in the overall respondent sample along with the four respondent sub-samples of interest

namely: locum pharmacists, non-locum pharmacists, independent pharmacists and large-multiple pharmacists.

7.10.1. Measurement Model

Following the psychometric analysis of the measurement scales in section 7.8, the measurement model was prepared for hypotheses testing. As is mentioned in section 7.9 the measurement model examines the relationship between the latent variables and their respective indicators[353,361-363,379,408,411,421,422]. The focus is upon how well the indicators approximate the latent variable domain[353,361-363,379,408,411,421,422]. The primary way this is achieved is to inspect the selected fit statistics (see section 7.2.2), as well as the standardised residual matrices and standardised regression loadings, for evidence of misspecification as detailed in section 7.7.4. Bootstrapped robust standard-errors and p-values were used to attenuate the potential bias of violating the condition of multivariate normality and the measurement models were also fitted to each of the five multiply-imputed datasets separately, prior to the results being pooled (see section 7.6.2).

7.10.2. Parcelling

Parcelling is a much debated and useful technique which is used in SEM[347,439-441]. In essence it allows for indicators to be suitably aggregated by reducing the number of parameters to estimate in the measurement model[347,440]. This has some advantages such as potentially improving the sampling distribution of the data to more acceptable normality[439-442], simplifying the measurement model without altering structural relationships[347,440,441], increasing the probability of a better fit to the data[439,440], a better level of reliability[441,442], and reducing the number of parameters to sample size[347,439,440,443]. Parcelling was used here as it is mainly recommended when the relationships within the structural model are of interest rather than where the relationships within the CFA or measurement model are of primary focus[411,439-441].

7.10.3. Structural-Model

Following the successful specification of the measurement-model, the structural-model can now be examined with relative confidence[357,361-363,374,379,408,411,414,421]. As

mentioned in section 7.9 the structural-model represents the structural relationships expounded in the structural theory[414], whilst the measurement model represents the measurement theory for all constructs, without considering the relationships between them[414]. The construct may now be split into exogenous (independent) variables and endogenous (dependent) variables[411]. The specified structural-model was assessed for satisfactory fit with the research sample data, using the selected fit statistics (see section 7.7.2), as well as the standardised residual matrices and standardised and unstandardised regression loadings, for evidence of misspecification as detailed in section 7.7.4. Once all modification have been made (see section 7.7.4) and the structural-model is deemed to have a satisfactory fit with the research sample data the squared multiple correlation (SMC) statistics of the endogenous variables were used to ascertain the amount (percentage) of each endogenous variable's variance which was explained by the variables (both exogenous and endogenous) hypothesised to predict it[379,408,410,411 430].

Following this, standardised parameters estimates were compared with the magnitude of the hypothesised structural relationships between the exogenous and endogenous variables within the SEM model[379,408, 410,411,430]. Standardised-parameters such as standardised direct-effects, standardised indirect-effects and standardised total-effects were used for this as they were based on standardised data (i.e. correlation matrices), which were particular to the research sample under investigation[379,408,410,411,430]. However, unstandardised parameter estimates (i.e. based on covariance-matrices) were recommended and used when comparing a specific hypothesised structural relationship between two variables across research sub-samples, as the unit of measure here was particular to the individual structural relationship between the variables, rather than the specific research sample[379,408,410,411,430].

7.11.   Summary

This chapter has provided the comprehensive details of how the methodological and analytical strategy of stage 2 was implemented to achieve the research objectives detailed in chapter 4 and Appendix 4.3. Both the methodology and the analyses were informed by the methodological and analytical rationale introduced in chapter four. This chapter also reported on the preliminary examination of the data in terms of an

exploration of the characteristics of the respondent sample, as well as recommended data preparation procedures and testing assumptions appropriate for the subsequent analyses. Chapter eight will report on the psychometric analysis of the scales of which some preliminary investigations were reported in this chapter. It will seek to minimise some of the issues that have been flagged in the present chapter by assessing the construct validity of the measurement scales and making theoretically justifiable adjustments, where appropriate. Finally some the issues that have been reported in this chapter will be raised again in the discussion in chapter eleven.

8. Chapter 8 Stage 2 Results: Psychometric Analyses of Scales

8.1. Introduction

The previous chapter described the quantitative methodology and plan of analyses used to satisfy the objectives of stage 2. It also elaborated on the characteristics of the full community-pharmacist sample in terms of its socio-demography as well as a more detailed inspection of the statistical characteristics of the sample. This involved a comparison of the community-pharmacist responders with non-responders as well as a comparison of the socio-demographics of the community-pharmacist responders with the community-pharmacy population in GB. The chapter also detailed the testing of relevant statistical assumptions and data preparation prior to the further descriptive analysis, univariate analysis in chapter 9 and structural equation modelling (SEM) in this chapter and chapter 10. The focus in the current chapter is the reporting of the findings of the psychometric evaluation of the measurement subscales affective-professional commitment, normative-professional commitment continuance-professional commitment, affective-organisational commitment, normative continuance commitment, continuance-organisational commitment, the aforementioned withdrawal Behaviours (see chapter four) and the work-performance behaviours' in-role behaviours, extra-role behaviours towards the individual, and extra-role behaviours toward the organisation, for the purposes of this research (see chapters four and seven).

Previously, a qualitative evaluation of construct validity was reported in Chapter six. However, in the present chapter, the construct validity of the measures is assessed (quantitatively) in terms of both convergent and divergent validity as detailed in section 7.9[295,414]. Divergent validity is partly assessed through the examination of confirmatory factor analysis of various a-priori models which were derived from the literature and the findings of stage 1, for each of the four survey scales measured[178,444,445] (section 7.9). The better fitting models for each of the four survey scales, are examined further for divergent validity by assessing the Average Variance Extracted, Maximum Shared Squared Variance, and Average Shared Squared Variance as well as assessing convergent validity in terms of their Standardised Regression factor loadings, Composite Reliabilities, and Average Variance Extracted[414] as detailed in section 7.9.

Where it is deemed that the scales need amending, Loehlin's recommendations are followed whereby the community-pharmacist respondents sample is randomly split into two samples, and any theoretically justified amendments (via further exploratory factor analysis techniques) are made in the first sample and then subsequently validated in the second sample[361-363,446].

Following any potential amendments a number of full measurement-models involving different combinations and factors as evidenced from the literature and stage 1, are tested in the full community-pharmacist sample[178,179]. These a-priori models will be tested to provide further evidence for convergent and divergent validity, using the assessments highlighted above and in section 7.9.

8.2. Construct Validity of Professional Commitment

Table 8. 1 A comparison of the different models of professional commitment using naive pooling (median) of the multiply-imputed datasets (see Appendices 12)

Model	$X^2(df)$	X^2/df	B-S P-Value	SRMR	TLI	CFI	RMSEA	ECVI
One-Factor Model (all indicators load onto one latent variable)	2673.774 (135)***	19.806	.002	.1445	.456	.520	.139***	3.900
Two-Factor Model (APC & NPC both load onto one latent variable & CPC loads onto the second latent variable)	1682.121 (134)***	12.553	.002	.1119	.666	.707	.128***	2.494
Three-Factor Model (APC, NPC & CPC each load onto three separate latent variables)	760.364 (132)***	5.769	.002	.0869	.862	.881	.082***	1.191

APC=Affective-professional Commitment, NPC=Normative-professional Commitment, CPC=Continuance-professional Commitment *** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1

As discussed in chapter seven, to assess the discriminant validity aspect of construct validity[295,414] a comparison was made between a one-factor model (all indicators load onto one latent variable), a two-factor model (affective-professional commitment and normative-professional commitment both load onto one latent variable and continuance-professional commitment loads onto the second latent variable) and the three-factor model (affective-professional commitment, normative-professional commitment and continuance-professional commitment each load onto three separate latent variables). Table 8.1 revealed that the three factor model appeared to have the best fitting model of

the three with a smaller averaged expected cross-validation index (ECVI) value of 1.191 as well as better fit according to the comparative-fit index (CFI; 0.881), the standardised root mean square residual (SRMR; 0.0869), root mean square error of approximation (RMSEA; 0.082) and Tucker-Lewis index (TLI; 0.862) when compared to the other factor structured professional commitment models. Therefore, the model fit of the three-factor model of professional commitment appeared to provide evidence of divergent validity in comparison to the alternative models.
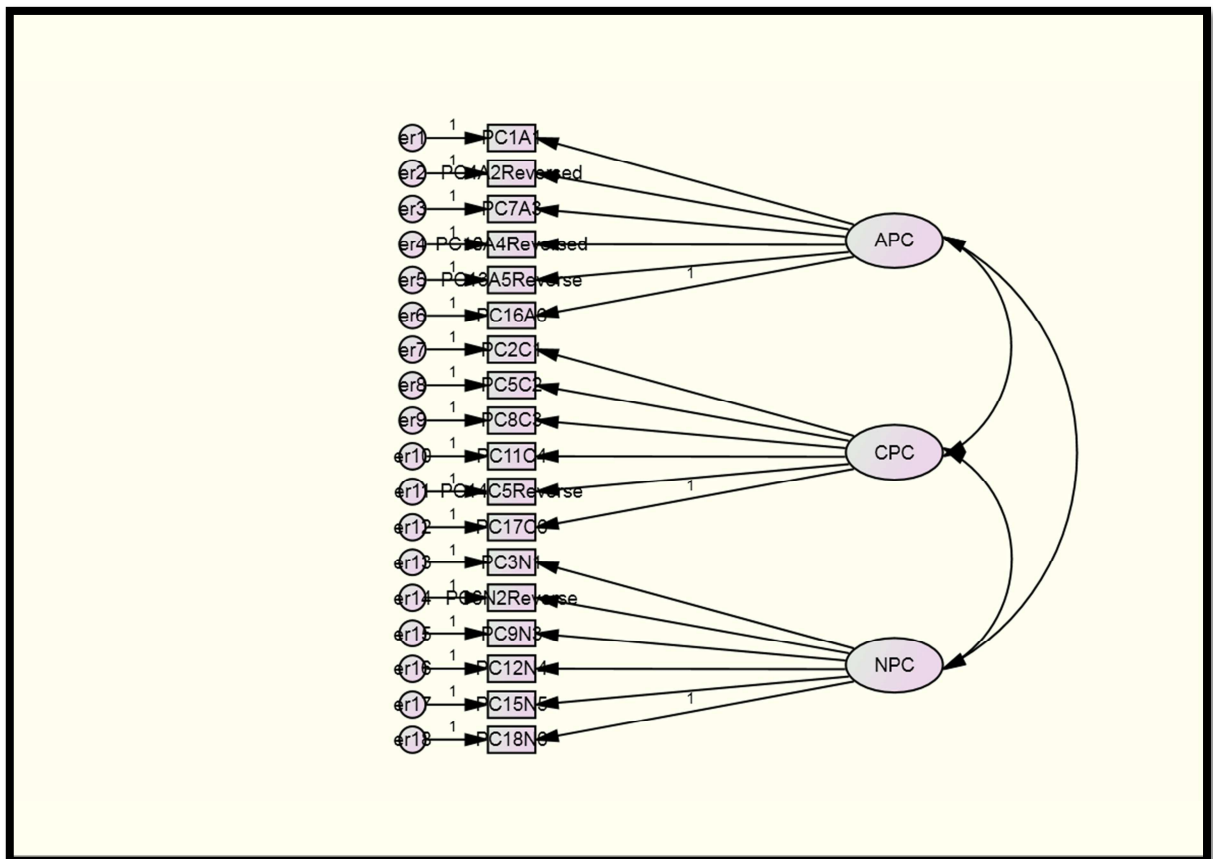
Figure 8. 1 The three-factor model of Professional Commitment

However, the three-factor model (Figure 8.1) had less than satisfactory levels of model fit and so was examined further. The sample was randomly split into two, Sample 1 containing 350 respondent pharmacists, and Sample 2 containing 355 respondents pharmacists[361, 446, 447]. Following an examination of the standardised regression factor loadings, the modification-indices and standardised-residuals (see Appendix 12), it was decided that the low scoring affective-professional commitment item (PC1A1: My profession is important to my self-image) would be dropped as it may be viewed as a little unclear owing to the potential ambiguity of the words self-image. The latter was

also flagged by one participant in chapter 6, although this was not corroborated by any other participant. The continuance-professional commitment item (PC14C5Reverse: There are no pressures to keep from changing professions) was also dropped owing to its poor standardised-regression loading and its problematic sentence construction (as commented upon by a participant in chapter 6). Finally, the continuance-professional commitment item (P2C1: I have put too much into my profession to consider changing now) was dropped due its poor standardised-regression loading possibly due to the vagueness and varied interpretability of the phrase "too much". These three items also appeared to have possessed excessively large standardised-residuals and large potential modification-indices (see Appendix 12).

Appendix 8.1 provides the fit statistics of the subsequent modifications to the model, made based upon the modification indices (see Appendix 12). Appendix 8.2 illustrates that whilst model 2 is an improvement on the original model, with acceptable CFI values of 0.908, along with an improved SRMR value of 0.0643 and RMSEA value of .082 further improvements may be had. However, the potential follies discussed earlier in modifying the model without theoretical justification must be borne in mind [361-363, 374, 411] (section 7.8.4). With this in mind the following modifications as detailed in Appendix 8.1 were made, incrementally, and then the analysis subsequently repeated, for each modification [361-363, 408]. Firstly, a covariance path was added from error-8 (i.e. continuance-professional commitment item PC5C3; Changing professions now would be very difficult for me to do) to error-9 (i.e. continuance-professional commitment item PC8C3; Too much of my life would be disrupted if I were to change my profession now). It may be argued that that one item is essentially a reworded version of the other items and therefore both items could be viewed as holding a theoretical rational for correlating together [411]. Again studying the available information, a covariance path was then added from error-2 (i.e. affective-professional commitment item PC4A2; I regret having entered my profession) and error-4 (affective-professional commitment item PC10A4; I dislike being in my profession). Again these two items are very similar in meaning and therefore hold a theoretical rationale for correlating together [411]. The latter is also true with the final modification that was theoretically justified and deemed appropriate based on the available information. Therefore, a covariance pathway was added between error-17 (i.e. normative-professional commitment item PC17N5; I would

feel guilty if I left my profession) and error-18 (normative-professional commitment item PC18N6; I am in my profession because of my sense of loyalty to it).

As revealed in Appendix 8.1, the final model in sample 1 was a good improvement on model 1 in Sample 1, with all the fit statistics showing an improved level of fit, of the proposed modified model, with the data (Figure 8.2). Appendix 8.2 also reveals that the standardised-regression loadings for model five in sample 1 were also relatively strong with one slight exception. However, in such circumstances, as per recommendations [411], and without any further theoretically justifiable amendments to be made, the final model in sample 1 was tested in sample 2 and reported in Appendix 8.2 [361-363]. The fit statistics appeared to provide more encouraging support for the stability of the theoretically justifiable modifications which contributed to the final model, in an independent sample. This was further bolstered by the relatively robust and significant standardised-regression loadings of the final model of professional commitment in sample 2 (Appendix 8.2).
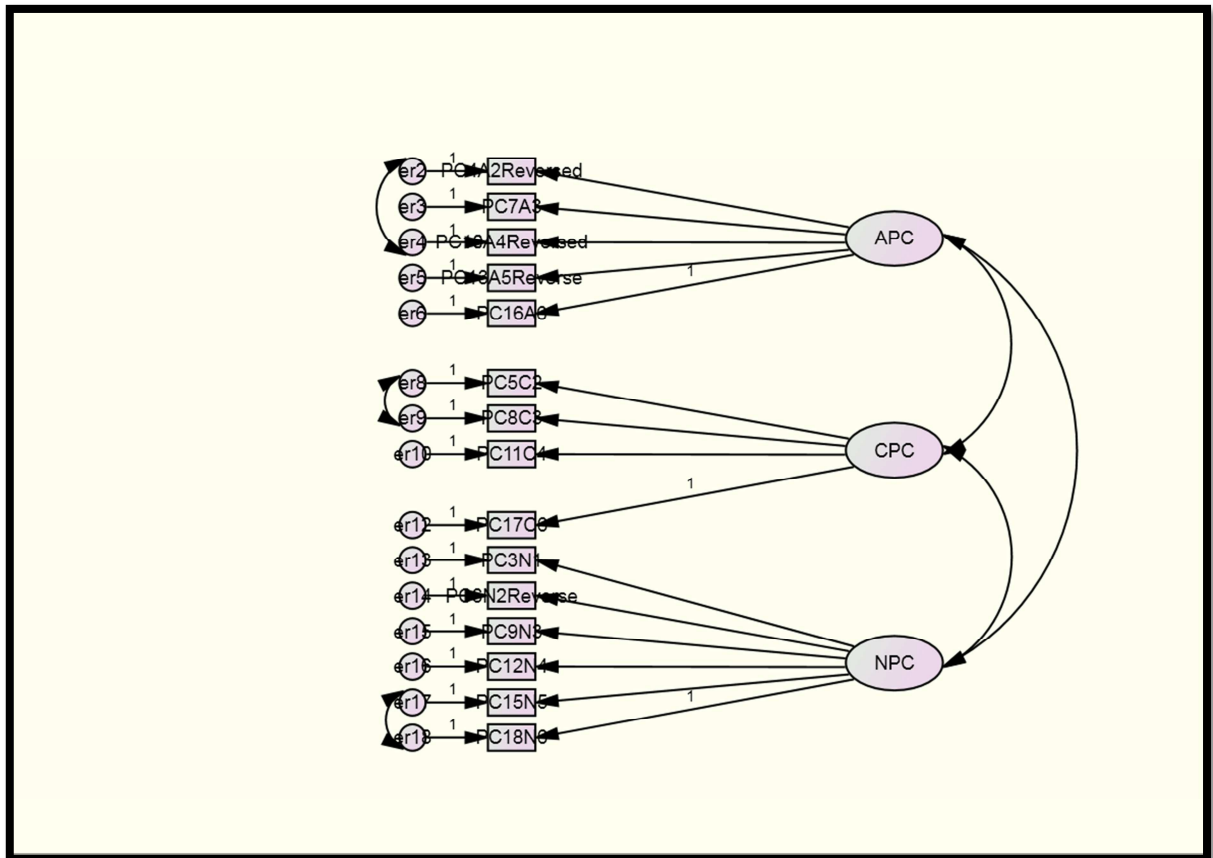
Figure 8.2 3 factor model of Professional Commitment (final model)

As discussed earlier, the construct validity of the final model was further assessed in sample 1 and sample 2 in terms of its convergent and discriminant validity (see section 7.8). According to Appendix 8.3, in terms of convergent validity, the final model of professional commitment exhibited robust composite-reliabilities in both samples [379,414], The latter was also found to be greater than their respective Average Variance Extracted, both in Samples 1 and 2, which also bolstered the case for convergent validity [379,414,448] (see section 7.8). However, continuance-professional commitment in Sample 1 and normative-professional commitment in sample 2 narrowly failed to attain the threshold of 0.5 required for robust convergent validity which may indicate a potential convergent validity issue [379,414,448] (section 7.9). However, there appears to be robust evidence of discriminant validity, according to Appendix 8.3, as the Averaged Variance Extracted values of the latent variables are greater than their respective Maximum Shared Squared Variance values for both samples 1 and 2 [414,448]. Furthermore, the Averaged Variance Extracted values of the latent variables are also greater than their respective Averaged Shared Squared Variance values for both samples 1 and 2 [414,448]. Therefore, there is sufficient support for the construct validity of the professional commitment final model in a sample of community-pharmacists in GB.

8.3. Construct Validity of Organisational Commitment

Table 8.2 revealed that the four-factor model was the best fitting model of the five models with a smaller averaged ECVI value of 1.290 as well as better fit according to the CFI (0.893), the SRMR (0.0752), RMSEA (0.087) and TLI (0.873) when compared to the alternative models. It is noted that the four-factor model was not the original incarnation of the organisational commitment factor structure[7,23,157]. However, the four-factor structure model of organisational commitment has been accumulating greater evidence of its existence[38,122,160,174,181,189]. Hence, the model fit of the four-factor model of organisational commitment appeared to provide superior evidence of discriminant validity in comparison to the alternative models. Interestingly, the three-factor model two, also provided a better fit then the original three-factor model, which may indicate a particular closeness of affective-organisational commitment with normative-organisational commitment. However, the three-factor model two exhibited a worse fit to the data than the four-factor model.

This said, the four factor model (Figure 8.3) had less than satisfactory levels of model fit and so was examined further. Splitting the sample randomly into two samples as before the standardised-regression factor loadings, the modification-indices and standardised-residuals (Appendix 12) indicated that the low scoring continuance-organisational commitment item OC2C1 (Right now, staying with my organisation is a matter of necessity as much as desire) should be omitted as it loaded weakly on the latent variable and was more ambiguously worded then the other two low-alternative continuance-organisational commitment indicators. The continuance-organisational commitment item OC14C5Reverse (If I had not already put so much of myself into this organisation, I might consider working elsewhere) was also dropped owing to its poor standardised-regression loading and the capture of the latent variable satisfactorily by the remaining indicators[361]as advised by Stanton et al[343]. It was also dropped owing to its problematic sentence construction[343] (as one participant commented upon in chapter six). These two items also appeared to have possessed excessively large standardised-residuals and large potential modification-indices (Appendix 12).

Table 8. 2 A comparison of the different models of organisational commitment using naive pooling (median) of the multiply-imputed datasets (see Appendices 12)

Model	$X^2(df)$	X^2/df	B-S P-Value	SRMR	TLI	CFI	RMSEA	ECVI
One-Factor Model (all indicators load onto one latent variable)	1959.441 (135)***	14.514	.002	.1327	.678	.716	.139***	2.886
Two-Factor Model (AOC & NOC both load onto one latent variable & COC loads onto the second latent variable)	1177.110 (134)***	8.769	.002	.1127	.816	.839	.105***	1.774
Three-Factor Model (AOC, NOC & COC each load onto three separate latent variables)	1034.072 (132)***	7.834	.002	.1070	.838	.860	.099***	1.580
Three-Factor Model 2 (AOC and NOC both load onto one latent variable whilst COC_HisSac and COC_LoAlt loads onto the second and third latent variables)	962.3623 (132)***	7.295	.002	.0823	.851	.871	.095***	1.479
Four-Factor Model (AOC, COC_HisSac, COC_LoAlt, & NOC all loaded on four separate latent variables)	823.912 (129)***	6.387	.002	.0752	.873	.893	.087***	1.290

AOC=Affective-organisational commitment, COC=Continuance-organisational commitment, COC_HiSac=High-sacrifice organisational commitment, COC_LoAlt=Low-alternative organisational commitment, NOC=Normative-organisational commitment. *** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1
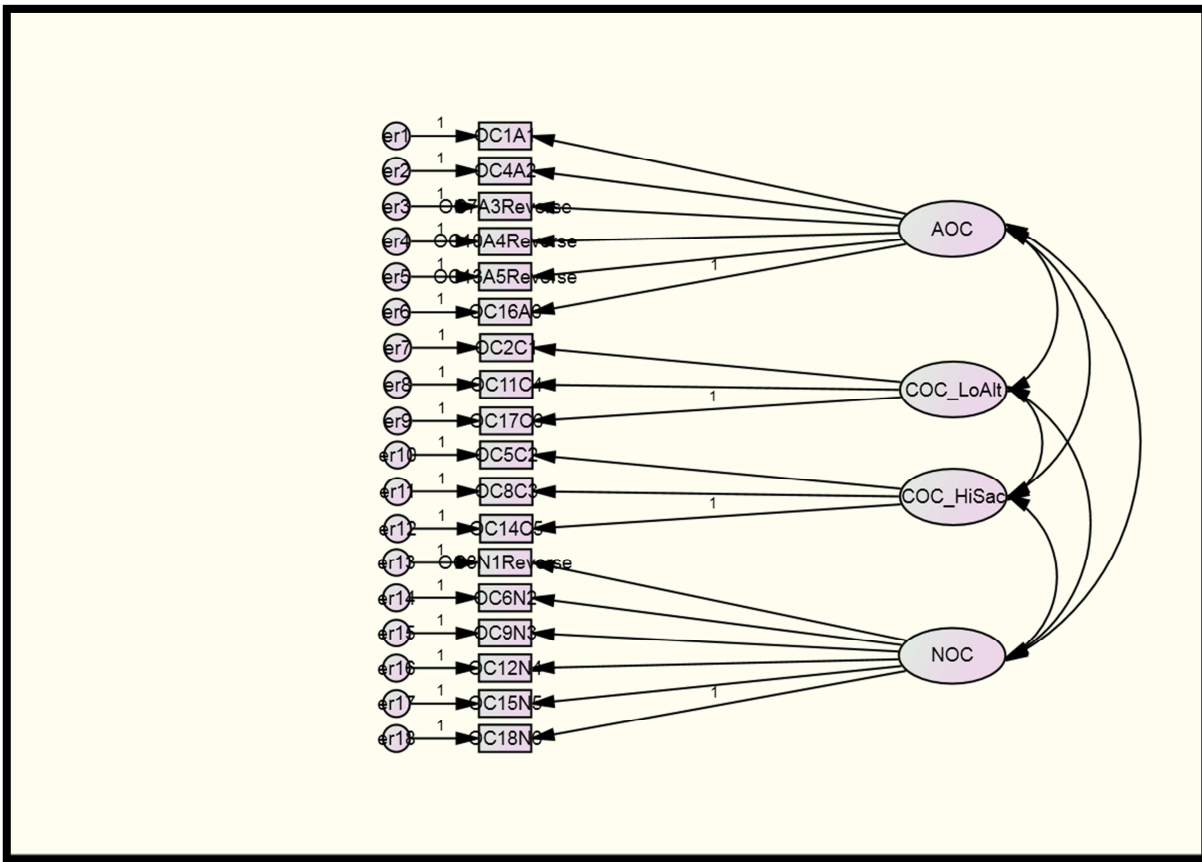
Figure 8. 3 The 4 factor model of Organisational Commitment

Appendix 8.4 illustrated that whilst model 2 was an improvement on the original model, with acceptable CFI values of 0.898, along with an improved SRMR value of 0.0705 and RMSEA value of 0.095 further improvements may be had (Appendix 12). The following modifications as detailed in Table 8.6 were made, incrementally, with the subsequently analysis repeated, for each modification[361-363,408]. Firstly, a covariance path was added from error-14 (i.e. normative-organisational commitment item OC6N2; Even if it were to my advantage, I do not feel it would be right to leave my organisation now) to error-15 (i.e. normative-organisational commitment item OC9N3; I would feel guilty if I left my organisation now). It may be argued that that one item is essentially a reworded version of the other item, in that both raise feelings of duty to stay and discomfort at the prospect of leaving. Therefore both items could be viewed as holding a theoretical rational for correlating together [411]. The three error terms considered in Models 3 to 6, namely error-3 (i.e. affective-organisational commitment item OC7A3Reverse; I do not feel a strong sense of "belonging" to my organisation), error-4

(i.e. affective-organisational commitment item OC10A4Reverse; I do not feel "emotionally attached" to this organisation) and error-5 (i.e. affective-organisational commitment item OC13A5Reverse; I do not feel like "part of the family" at my organisation) are all very similar in meaning and therefore hold a theoretical rational for correlating with each other, as well as deemed appropriate based on the modification-indices (Appendix 12).
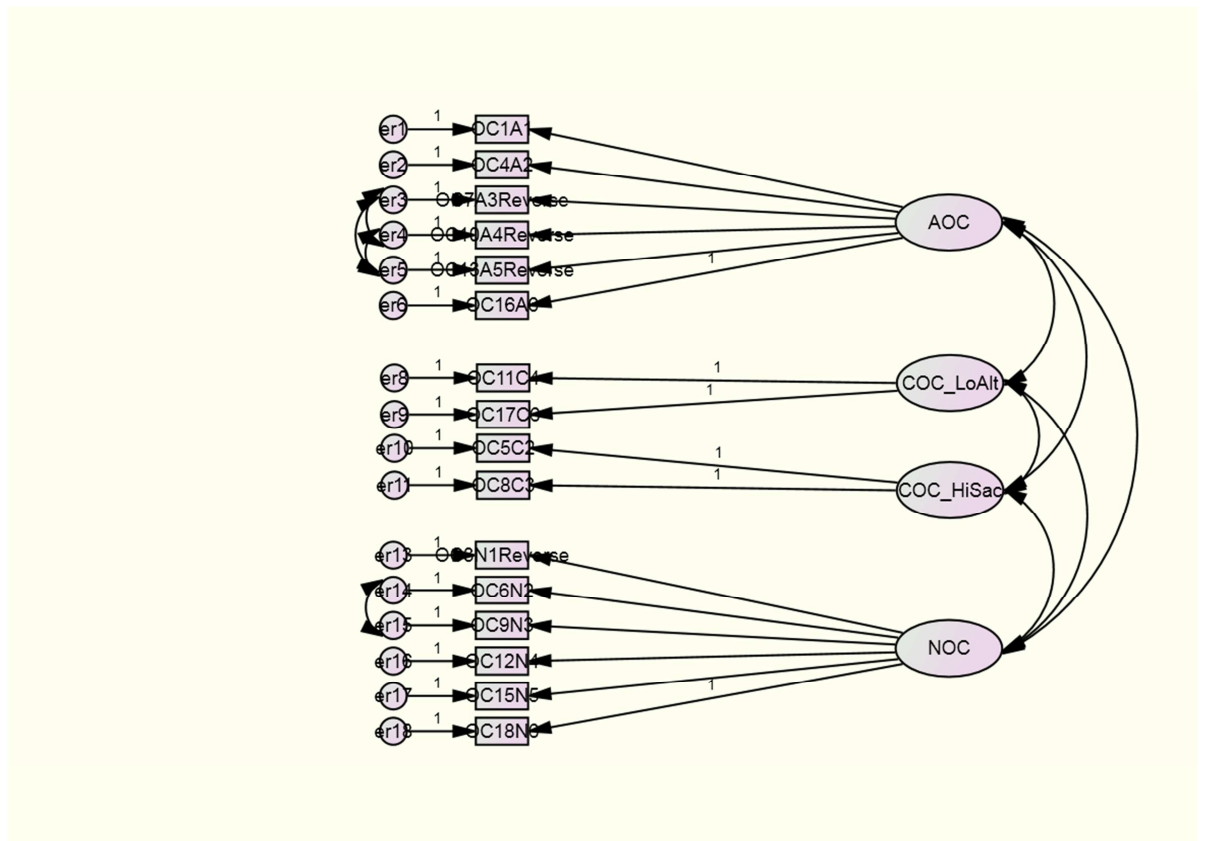
Figure 8. 4 four factor model of Organisational Commitment (final model)

As revealed in Appendix 8.4, final model for sample 1, was a good improvement on model 1 in Sample 1, with all the fit statistics showing a better level of fit, for the proposed modified model, with the data (Figure 8.4). Appendix 8.4 also reveals that the standardised-regression loadings for the final model in sample 1 were also relatively robust. Therefore the final model in sample 1 was tested in sample 2 and reported in Appendix 8.4[361-363]. The fit statistics provide support for the stability of the theoretically justifiable modifications of the final model (Figure 8.4), in this independent sample. This was further bolstered by the robust and significant standardised-regression loadings of the final model of professional commitment in sample 2 (Appendix 8.5).

Using the same strategy as in section 8.2 the construct validity of the final model of organisational commitment was further assessed in sample 1 and sample 2 in terms of its convergent and discriminant validity (see also section 7.8). According to Appendix 8.6, in terms of convergent validity, the final model of organisational commitment exhibited robust composite-reliabilities in both samples, except for low-alternative organisational commitment, which narrowly failed to reach the cut-off point of 0.7 in sample 2[379,414] (section 7.9). The potential convergent validity issues for affective-organisational commitment were also found as its Average Variance Extracted was found to be less than the cut-off of 0.5.[379,414] (See section 7.8). However, the overall case for convergent validity was bolstered by the fact that the Composite-Reliabilities were found to be greater than their respective Average Variance Extracted, for the latent variables in both samples[379,414,448] (section 7.9).

Whilst there were some apparent discriminant validity issues in both samples (see Appendix 8.6) in relation to affective-organisational commitment and normative-organisational commitment[38] the four-factor model in which affective-organisational commitment and normative-organisational commitment load onto separate latent variables provided a better fit to the data then did the 3 factor model[26,38]. There was also a further potential discriminant validity issue as the Square Root of the Average Variance Extracted for low-alternative continuance-organisational commitment was less than one of the correlations with another factor (section 7.9). There was also some robust evidence of discriminant validity, according to Appendix 8.6, as the Averaged Variance Extracted values of the latent variables were greater than their respective Maximum Shared Squared Variance values for both samples 1 and 2[414,448] (section 7.9). Added to this, the Averaged Variance Extracted values of the latent variables were also greater than their respective Averaged Shared Squared Variance values for both samples 1 and 2[414,448] (section 7.9). Therefore, again there was some encouraging support for the construct validity of the organisational commitment final model in the sample of community-pharmacists, whilst highlighting similar issues that have been reported elsewhere in the commitment literature[26,38,178].

8.4. Construct Validity of Withdrawal behaviour

Table 8.3 illustrated that the four-factor model appeared to have the best fitting model of the two with a smaller averaged ECVI value of 1.542 as well as better fit according to the CFI (0.785), the SRMR (0.0743), RMSEA (0.171) and TLI (0.705) when compared to the alternative models. This said, the four-factor model (Figure 8.5) had a far less than satisfactory level of model fit and so was examined further.

Table 8. 3 A comparison of the different models of Withdrawal Behaviour using naive pooling (median) of the multiply-imputed datasets (see Appendices 8.13)

Model	$X^2(df)$	X^2/df	B-S P-Value	SRMR	TLI	CFI	RMSEA	ECVI
One-Factor Model (all indicators load onto one latent variable)	1859.430 (54)***	34.434	.002	.1172	.515	.603	.218***	2.709
Four-Factor Model (PWB, OWB, SWB, and RHWB each load onto four separate latent variables)	1025.361 (48)***	21.362	.002	.0743	.705	.785	.171***	1.542

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1
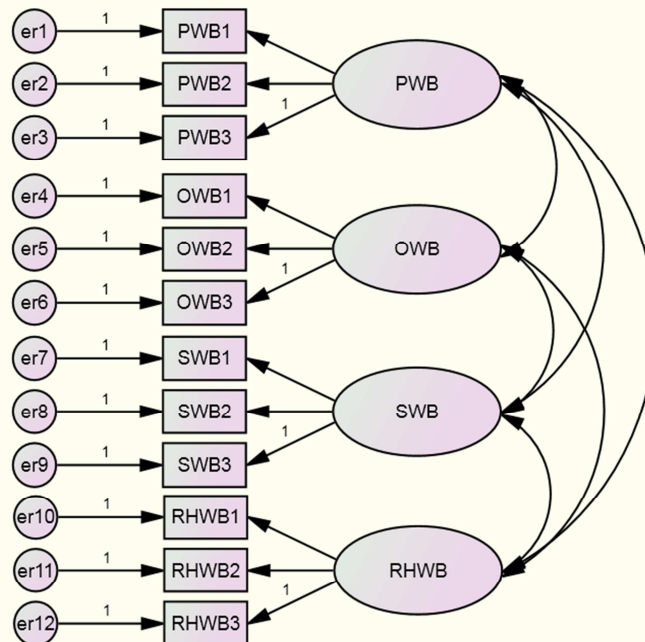
Figure 8. 5 The 4 factor model of Withdrawal behaviour

To remedy this situation the same procedure as section 8.2 was followed. Appendix 8.7 provides the fit statistics of the subsequent incremental modifications to the model made based upon the modification-indices available in Appendix 12. Whilst no indicator was deemed worthy of omission[361-363,408] a covariance path was added from error-5 (i.e. organisational-withdrawal behaviour item OWB2; How likely is it that you will search for a job in another organisation?) to error-8 (i.e. sector-withdrawal behaviour item SWB2; How likely is it that you will search for a job in another sector?). It may be argued that it indicates an artefact of the population under study[411]. Searching jobs in a different sector would require in the majority of cases, jobs to be searched in another organisation as well. Therefore, both items could be viewed as holding a theoretical rational for correlating together[411]. For similar reasons, a covariance path was added from error-6 (i.e. organisational-withdrawal behaviour item OWB3; How likely is it that you will actually leave the organisation within the next year) to error-9 (i.e. sector-withdrawal behaviour item SWB3; How likely is it that you will actually leave the sector within the next year?), as actual withdrawal from the sector would require in most cases actual withdrawal from the organisation as well; in addition to it being deemed appropriate based on the modification-indices (Appendix 12). Therefore in the same way, all the subsequent modifications reported in Appendix 8.7 may be viewed within the context of a population specific artefact which is prevalent in these interrelated latent variables[411].

As reported in Appendix 8.7, final model for sample 1, was a good improvement on model 1 in Sample 1, with all the fit statistics showing a better level of fit, for the proposed modified model, with the data (Figure 8.6). Appendix 8.7 also reveals that the standardised-regression loadings for the final model in sample 1 were also robust. Therefore, as per recommendations[411] (section 7.9), and without any further theoretically justifiable amendments to be made, the final model in sample 1 was replicated in sample 2 and reported in Appendix 8.7 [361-363]. The fit statistics provide support for the stability of the theoretically justifiable modifications which contributed to the final model of withdrawal behaviour (Figure 8.6), in an independent sample. This was further bolstered by the relatively robust and significant standardised-regression loadings of the final model of withdrawal behaviour in sample 2 (Appendix 8.8).
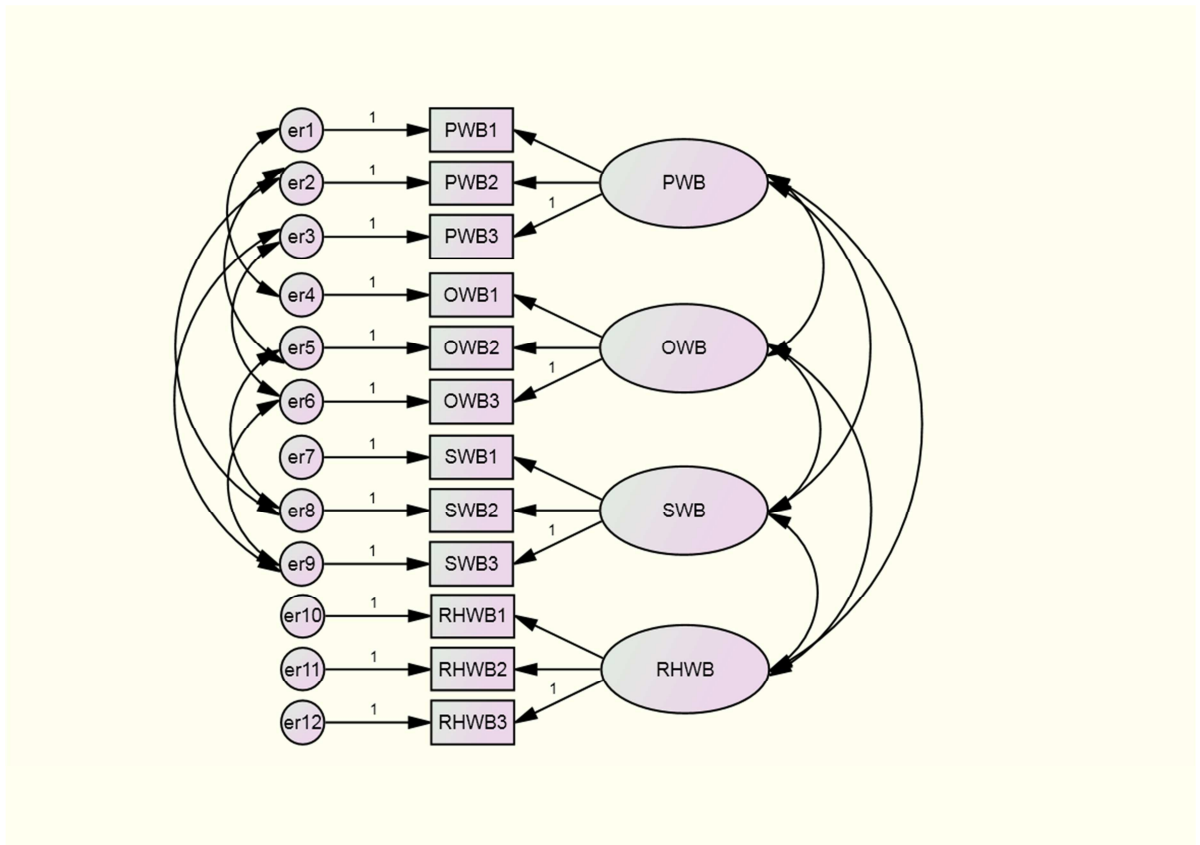
Figure 8. 6 four factor model of Withdrawal Behaviour (final model)

According to Appendix 8.9, in terms of convergent validity, the final model of withdrawal behaviours exhibited robust composite-reliabilities in both samples[379,414]. There were some convergent validity issues found for professional-withdrawal behaviours in both samples as their respective Average Variance Extracted were found to be less than the cut-off of 0.5.[379,414] (section 7.9). However, the overall case for convergent validity was bolstered by the fact that the composite-reliabilities were found to be greater than their respective average variance extracted, for the latent variables in both samples[379,414,448] (section 7.9).

A Potential discriminant validity issues seemed to be apparent in sample 2 in relation to sector-withdrawal behaviour and professional-withdrawal behaviour, as their respective square root of the average variance extracted values were less than one of their respective correlations with another factor (section 7.9). However, despite this there was also some robust evidence of discriminant validity, according to Appendix 8.9, as the averaged variance extracted values of the latent variables were greater than their respective maximum shared squared variance values for both samples 1 and 2[414,448] (section 7.9). Added to this, the averaged variance extracted values of the latent

variables were also greater than their respective averaged shared squared variance values for samples 1 and 2, with the exception of professional-withdrawal behaviour in sample 2[414,448] (see also section 7.8). Therefore, again there is support for the construct validity of the withdrawal behaviour final model in the sample of community-pharmacists in GB.

8.5. Construct Validity of Work-Performance Behaviour

Table 8.4 showed that the three-factor model had the best fitting model of the three with a smaller averaged ECVI value of 1.746 as well as better fit according to the CFI (.870), the SRMR (.0621), RMSEA (.085) and TLI (.854). This said, the three-factor model (Figure 8.7) had less than satisfactory levels of model fit and so was examined further.

Table 8. 4 A comparison of the different models of organisational commitment using naive pooling (median) of the multiply-imputed datasets (see Appendices 8.20)

Model	$X^2(df)$	X^2/df	B-S P-Value	SRMR	TLI	CFI	RMSEA	ECVI
One-Factor Model (all indicators load onto one latent variable)	3080.664 (189)***	16.300	.002	.1272	.563	.606	.147***	4.495
Two-Factor Model (ERBI and ERBO both load onto one latent variable and IRB loads onto the second latent variable)	1402.258 (188)***	7.542	.002	.0732	.816	.835	.096***	2.114
Three-Factor Model (IRB, ERBI and ERBO each load onto three separate latent variables)	1138.967 (186)***	6.123	.002	.0621	.854	.870	.085***	1.746

IRB=In-role behaviour; ERBI=Extra-role behaviour-individual; ERBO=Extra-role behaviour-organisation; *** $p < 0.001$, ** $p<0.01$, * $p<0.05$, + $p \geq 0.05$, ++ $p \geq 0.1$

Following an examination of the standardised-regression factor loadings, the modification-indices and standardised-residuals (Appendix 12), it was decided that as advocated by Stanton et al.[343] the following poor loading and problematic items should be dropped as their omission would not adversely affect the balance of the measurement scale within the community-pharmacy context: Work-performance behaviour items IRBfive (I engage in activities that will directly affect my performance evaluation), IRBsix (I neglect aspects of my job I am obligated to perform), IRBseven (I fail to perform essential duties), ERBIten3 (I assist my supervisor/line-manager with his/her work when not asked) and ERBOnineteen4 (I complain about insignificant things at

work). These items also appeared to have possessed excessively large standardised-residuals and large potential modification-indices (Appendix 12).
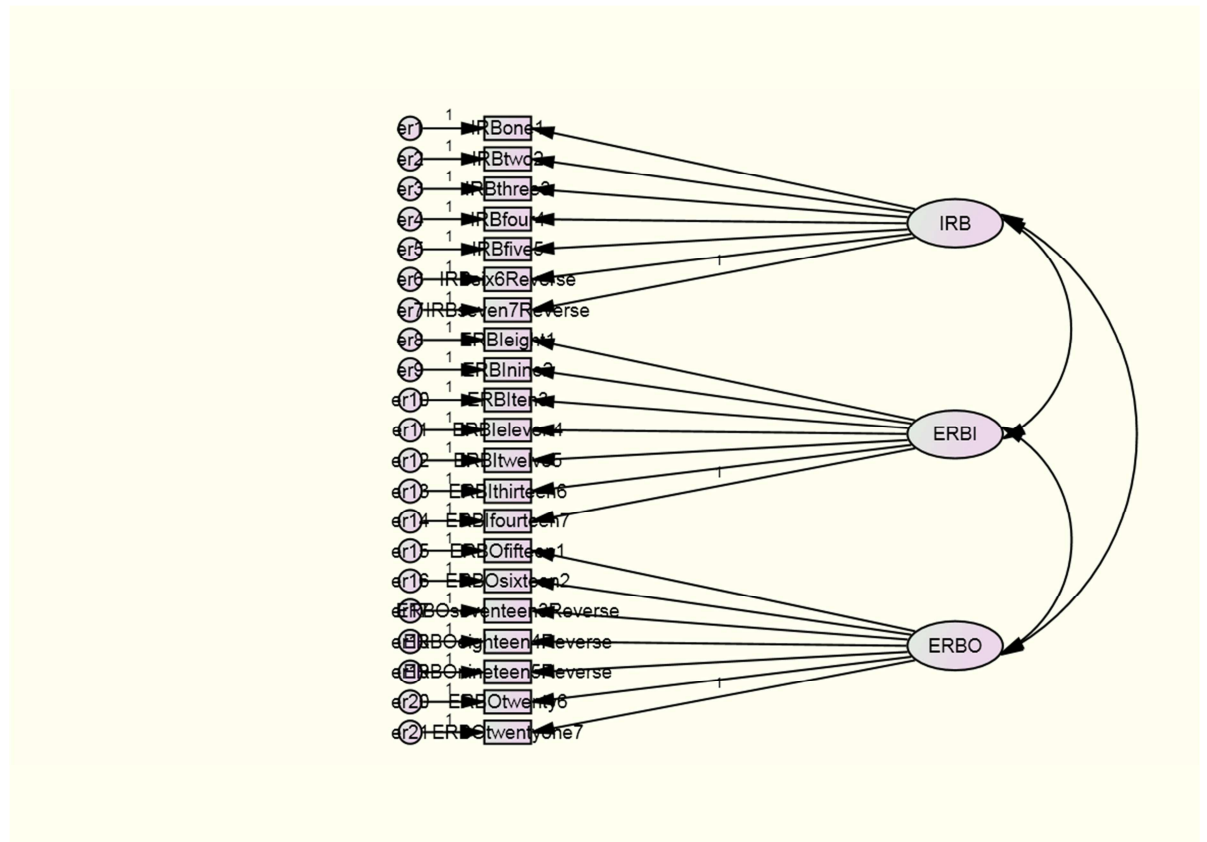
Figure 8. 7 The 3-factor model of Work-performance Behaviour

Appendix 8.10 provided the fit statistics of the subsequent modifications to the model made based upon the modification-indices (see Appendix 12). Table 8.4 illustrated that whilst model 2 was an improvement on the original model, with acceptable CFI values of 0.895, along with an improved SRMR value of 0.0638 and RMSEA value of 0.096 further improvements were possible (Appendix 12). Changes reported in Appendix 8.10 were made, incrementally, with the subsequent analysis repeated, for each modification[361-363, 408]. Firstly, a covariance path was added from error-8 (i.e. Work-performance behaviour item ERBIeight1; I help others who have been absent) to error-9 (i.e. Work-performance behaviour item ERBInine2; I help others who have a heavy workload). It may be argued that these two items are similar in scope, in that both their domains appear to overlap. A second covariance path was also added from error-20 (i.e. Work-performance behaviour item ERBOtwenty6; I conserve and protect organisational property) to error-21 (i.e. Work-performance behaviour item ERBOtwentyone7; I

adhere to informal rules devised to maintain order), similarly to the previous covariance these two items could also potentially occupy, broadly speaking, similar domains.

As revealed in Appendix 8.10, final model for sample 1, was a very good improvement on model 1 in Sample 1, with all the fit statistics showing excellent levels of fit, for the proposed modified model, with the data (Figure 8.7). Appendix 8.11 revealed that the standardised-regression loadings for the final model in sample 1 were more robust, although there were still some lower loadings. However, in such circumstances, as per recommendations[411] (section 7.8.4), and without any further theoretically justifiable amendments to be made, the final model in sample 1 was tested in sample 2 and reported in Table 8.10[361-363]. The fit statistics appeared to provide strong initial support for the stability of the theoretically justifiable modifications which contributed to the final model of work-performance behaviour (Figure 8.7), in an independent sample. This was further bolstered by the comparatively robust and significant standardised regression loadings of the final model in sample 2 (see Appendix 8.11). However, there were still some issues regarding the few less optimum standardised-regression loading of items in the first sample.

The final model of work-performance behaviour exhibited robust composite-reliabilities in both samples[379, 414]. There appeared to be some possible convergent validity issues for extra-role behaviour towards the organisation in both samples as its Average Variance Extracted was found to be less than the cut-off of 0.5 in both samples[379,414], whilst extra-role behaviour towards the individual narrowly missed the cut-off of 0.5, in terms of its Average Variance Extracted[379,414] (section 7.9). However, the overall case for convergent validity was bolstered by the fact that the composite-reliabilities were found to be greater than their respective Average Variance Extracted, for the latent variables in both samples[379,414,448] (section 7.9).
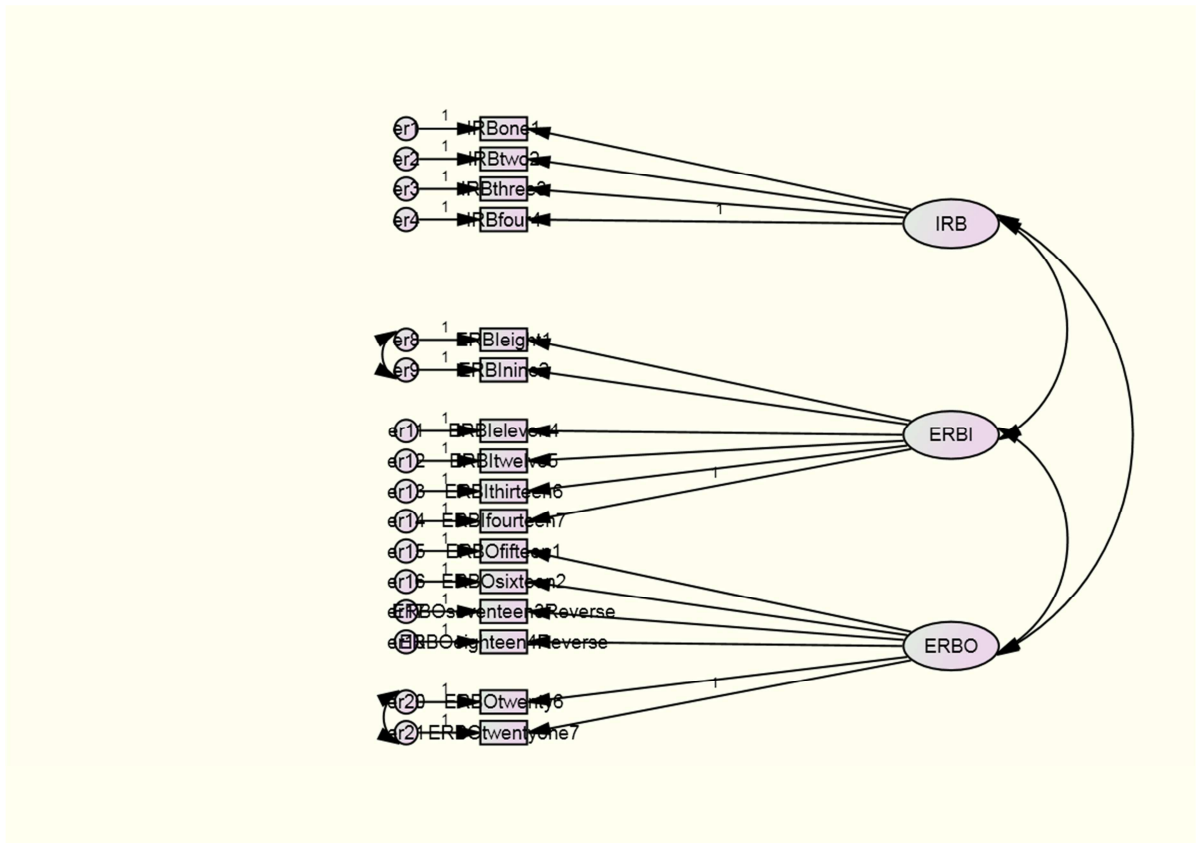
Figure 8. 8 3 factor model of Work-performance Behaviour (final model)

It should be noted that as illustrated in Table 8.4, the three-factor model provided a better fit to the data then did the two-factor model in which extra-role behaviour towards the organisation and extra-role behaviour towards the individual loaded onto the same latent variables. A potential discriminant validity issue was the Square Root of the Average Variance Extracted for extra-role behaviour towards the organisation and extra-role behaviour towards the individual was less than one of their respective correlations with another factor[379,414,448]. However, despite this, there was support found for the construct validity of the work-performance behaviour final model in community-pharmacists[411].

1.8   Construct validity of the measurement model

Appendix 8.13 revealed that the fourteen factor oblique model appeared to have the best fitting model to the data of the six models tested, with a smaller averaged ECVI value of 5.688 as well as better fit according to the CFI (0.914), the SRMR (0.0509), RMSEA (0.043) and TLI (0.905) when compared to the alternative models. According to

Appendix 8.14, the full measurement model exhibited robust composite-reliabilities[379,414]. There were a relatively few convergent validity issues found for professional-withdrawal behaviour, extra-role behaviour towards the organisation, extra-role behaviour towards the individual and normative-professional commitment; and similarly, there were potentially minor discriminant validity issues relating to extra-role behaviour towards the organisation, extra-role behaviour towards the individual, affective-organisational commitment, normative-organisational commitment and professional-withdrawal behaviour. However, overall, Appendix 8.14 illustrated that the vast majority of the construct validity indicators provide support for the construct validity of the full measurement model in this sample of community-pharmacists in GB.

2.8. Summary

This chapter reported on the psychometric evaluation of the measurement scales used to gauge each of the different latent variables (i.e. professional commitment, organisational commitment, withdrawal behaviour and work-performance behaviours). It has presented a series of principled modifications to the original measurement scales, which have resulted in improved construct validity across each scale, which were validated in an independent sample. Lastly, the modified scale factor structures were examined together in the measurement model against alternative factor structures for the measurement model, albeit this time in the full community pharmacists sample. Additional statistical analyses was carried out which replicated the levels of convergent and discriminant validity prevalent in the individual latent variable analyses, in the full measurement model. The next chapter will follow up the results of this chapter and report descriptive and univariate analysis of the data using the measures validated in this chapter and chapter 6.

9 Chapter 9 Stage 2 Results: Descriptive analyses

9.1 Introduction

The previous chapter reported the analysis of the construct validity and the modification warranted to improve construct validity in a community pharmacy population. The modifications were subsequently validated in an independent sample. The psychometric properties of the scales were also reported for each of the scales. The focus in the current chapter is the reporting of the findings of the descriptive and univariate analysis. This will include a comparison of the mean and standard deviations of the different Three-Component Model (TCM) facets affective-professional commitment, normative-professional commitment, continuance-professional commitment, affective-organisational commitment, normative-continuance commitment, continuance-organisational commitment, the withdrawal behaviours (see chapter four) and the work-performance behaviours' in-role behaviour, extra-role behaviour-individual, and extra-role behaviour-organisation, using the Kruskal-Wallis tests stratified by a variety of salient socio-demographic background variables. Where appropriate, following the Kruskal-Wallis, post-hoc analysis will be performed to ascertain the relationships between the categories of the aforementioned background variables.

Inter-correlational analysis will also be reported, using multiply-imputed datasets, to assess the relationships between the aforementioned variables for the research sample as a whole and also for a number of subgroups of interest, as well. Again using multiply-imputed datasets a series of univariate linear regression-models will be reported for each of the outcome variables mentioned above, in which the commitment variables will be adjusted for each of the salient background variables, leading to a final fully-adjusted model for each outcome variable. Finally, bonferroni-corrections will be applied to adjust for multiple significance tests in the comparisons using the alpha of $0.05/15=0.003$, and correlational analysis using the alpha of $0.05/156=0.0003$. Additional bonferroni-corrections will also be used in the post-hoc analysis.

9.2 An assessment of the levels of commitment and outcome variables in the respondent community-pharmacists

In the community-pharmacist sample, using the Wilcoxon matched-pairs signed-rank test and the bonferroni-adjusted p-value ≤ 0.5/26=0.0019, affective-professional commitment (mean=5.17/s.d.=1.21) was found to be significantly higher than normative-professional commitment (mean=3.63/s.d.=1.38), affective-organisational commitment (mean=4.03/s.d.=1.54), continuance-organisational commitment (mean=4.03/s.d.=1.29), high-sacrifice organisational commitment (mean=3.9/s.d.=1.4), low-alternative organisational commitment (mean=4.2/s.d.=1.5) and normative-organisational commitment (mean=3.45/s.d.=1.47). However, it was not found to be significantly different from continuance-professional commitment (mean=5.15/s.d.=1.18). Likewise, continuance-professional commitment was also found to be significantly higher than normative-professional commitment, affective-organisational commitment, continuance-organisational commitment, low-alternative organisational commitment, high-sacrifice organisational commitment and normative-organisational commitment. Normative-professional commitment was found to be significantly lower than affective and continuance-organisational commitment, as well as lower than low-alternative organisational commitment and high-sacrifice organisational commitment; but higher than normative-organisational commitment. Interestingly, there were few significant differences in rating between the organisational commitments, with low-alternative organisational commitment being significantly higher than high-sacrifice organisational commitment. All other organisational commitments were significantly higher than normative-organisational commitment, only.

In terms of the outcome variables, professional-withdrawal behaviour (mean=2.56/s.d.=1.53) was found to be significantly lower than organisational-withdrawal behaviour (mean=3.16/s.d.=1.68) and reduction-in-hours withdrawal behaviour (mean=3.26/s.d.=1.86) in the respondent sample. However, professional-withdrawal behaviour was found to be significantly higher than sector-withdrawal behaviour (mean=2.32/s.d.=1.60). Additionally, organisational-withdrawal behaviour was found to be significantly higher than sector-withdrawal behaviour as was reduction-in-hours withdrawal behaviour. However there was no difference found between

organisational-withdrawal behaviour and reduction-in-hours withdrawal behaviour. In terms of the work-performance behaviour in-role behaviour (mean=4.38/s.d.=0.68) was found to be higher than extra-role behaviour-individual (mean=4.08/s.d.=0.65) and lower than extra-role behaviour-organisation (mean=4.49/s.d.=0.55). Furthermore, extra-role behaviour-individual was significantly lower than extra-role behaviour-organisation.

9.2.1 A comparison between first round and second round respondents.

All respondents in the research sample were contacted in round one and only those respondents that had yet not responded were contacted in round two. It may be argued that the likelihood of respondents that responded in round two responding to the survey without being sent a second round of surveys with a reminder was remote. In this way it may be considered that a response to a round two survey reminder could be viewed as a proxy for non-respondents. Therefore, the means and standard deviations (s.d.) for commitment and outcome variables (mentioned above) were stratified by round of response to ascertain whether there were any significant differences between the two sets of community-pharmacists.

Using the bonferroni-adjustment there was found to be no significant difference between the respondents in round one and round two in terms of differences in independent or outcome variables in Table 9.1. One potential reason for this may be due to the possibly overly conservative p-value that the bonferroni-adjustment used in the analysis. This may have resulted in the two groups appearing to be more similar than they were. Conversely not accounting for multiple testing may elicit spurious significant difference by chance. This said, there appeared to be no difference in the aforementioned variables between the respondents and the proxy non-respondents.

9.2.2 A comparison by age category of the commitment and outcome variables.

As Table 9.2 illustrated, using the bonferroni-adjustment, only high-sacrifice organisational commitment exhibited a statistically significant difference in means scores between the age categories. Post-hoc analysis suggested that using a bonferroni-

adjustment of p≤0.0026 there was only a significant difference in high-sacrifice organisational commitment between community-pharmacists whom were 31 to 40 years old (mean=4.2/s.d.=1.3) and those whom were 61 years old and above (mean=3.6/s.d.=1.5). This seems to suggest that there was only minor variability between the age groups in their levels of commitment and no significant variability in outcome behaviours.

Table 9. 1 A Comparison of means and SDs of the independent and dependent variables by round in which surveys were returned

Variables	Round in which survey was sent		
	Round One N=558 Mean(SD)	Round Two N=147 Mean(SD)	*P-Value
Professional Commitment			
Affective(1-7)	5.2(1.23)	5.1(1.14)	0.365
Continuance(1-7)	5.1(1.75)	5.2(1.2)	0.386
Normative(1-7)	3.6(1.37)	3.8(1.4)	0.219
Organisational commitment			
Affective(1-7)	4.0(1.56)	4.2(1.46)	0.178
Continuance(1-7)	4.0(1.29)	4.2(1.30)	0.076
High-sacrifice(1-7)	3.8(1.4)	4.1(1.5)	0.027
Low-alternative(1-7)	4.2(1.4)	4.3(1.4)	0.588
Normative(1-7)	3.4(1.46)	3.7(1.51)	0.048
Withdrawal Behaviour			
Professional(1-7)	2.6(1.53)	2.4(1.51)	0.155
Organisational(1-7)	3.2(1.69)	3.0(1.67)	0.248
Sector(1-7)	2.3(1.61)	2.3(1.55)	0.693
Reduction-in-hours(1-7)	3.3(1.87)	3.3(1.84)	0.784
In-role Behaviour(1-5)	4.37(0.66)	4.4(0.72)	0.395
Extra-role Behaviour			
Individual(1-5)	4.1(0.64)	4.0(0.72)	0.473
Organisation(1-5)	4.5(0.51)	4.5(0.70)	0.308

*Kruskal-Wallis equality-of-populations rank test

Table 9. 2 A comparison of commitment and outcome variables by age category and gender

Variable	Age Category						Gender		
	Below 30 years old	31 to 40 years old	41 to 50 years old	51 to 60 years old	61 years old and above		Male	Female	
	N=66 Mean(SD)	N=110 Mean(SD)	N=211 Mean(SD)	N=216 Mean(SD)	N=81 Mean(SD)	*P-Value	N=284 Mean(SD)	N=413 Mean(SD)	*P-Value
Professional Commitment									
Affective(1-7)	5.3(1.3)	5.1(1.0)	5.2(1.3)	5.5(1.2)	5.4(1.4)	0.128	5.0(1.2)	5.3(1.2)	0.002
Continuance(1-7)	5.1(1.4)	5.2(1.1)	5.2(1.2)	5.2(1.1)	5.1(1.1)	0.816	5.2(1.2)	5.1(1.2)	0.245
Normative(1-7)	3.5(1.4)	3.7(1.3)	3.6(1.3)	3.6(1.4)	3.9(1.5)	0.500	3.6(1.5)	3.7(1.3)	0.447
Organisational commitment									
Affective(1-7)	4.0(1.4)	4.0(1.5)	4.2(1.5)	4.0(1.5)	4.0(1.7)	0.592	4.0(1.6)	4.0(1.5)	0.983
Continuance(1-7)	4.3(1.2)	4.4(1.1)	4.1(1.3)	4.0(1.3)	3.7(1.4)	0.006	4.1(1.3)	4.0(1.3)	0.373
High-sacrifice(1-7)	4.1(1.4)	4.2(1.3)	3.9(1.4)	3.8(1.4)	3.6(1.5)	0.001	4.0(1.5)	3.8(1.4)	0.236
Low-alternative(1-7)	4.5(1.4)	4.4(1.4)	4.2(1.5)	4.1(1.5)	3.8(1.6)	0.041	4.2(1.5)	4.2(1.5)	0.980
Normative(1-7)	3.5(1.4)	3.5(1.4)	3.6(1.5)	3.4(1.5)	3.3(1.5)	0.420	3.5(1.6)	3.5(1.4)	0.749
Withdrawal Behaviour									
Professional(1-7)	2.7(1.8)	2.5(1.6)	2.4(1.5)	2.6(1.5)	2.8(1.5)	0.199	2.7(1.5)	2.4(1.3)	0.003
Organisational(1-7)	3.5(1.8)	3.2(1.7)	3.1(1.7)	3.2(1.7)	3.1(1.5)	0.508	3.2(1.6)	3.1(1.7)	0.609
Sector(1-7)	3.0(1.9)	2.2(1.7)	2.2(1.5)	2.2(1.5)	2.4(1.5)	0.011	2.4(1.6)	2.3(1.6)	0.048
Reduction-in-hours(1-7)	3.5(1.9)	3.0(1.8)	3.0(1.8)	3.4(1.9)	3.5(1.9)	0.065	3.5(1.8)	3.1(1.9)	0.001
In-role Behaviour(1-5)	4.3 (0.8)	4.4(0.7)	4.4(0.7)	4.4(0.7)	4.5(0.5)	0.562	4.3(0.7)	4.4(0.6)	0.050
Extra-role Behaviour									
Individual(1-5)	4.0 (0.7)	4.0(0.7)	4.0(0.7)	4.1(0.6)	4.3(0.5)	0.032	4.0(0.7)	4.2(0.6)	0.001
Organisation(1-5)	4.4 (0.7)	4.4(0.6)	4.5(0.7)	4.6(0.4)	4.6(0.4)	0.061	4.5(0.6)	4.5(0.5)	0.422

*Kruskal-Wallis equality-of-populations rank test

9.2.3 A comparison by gender of the commitment and outcome variables

According to Table 9.2 using the bonferroni-adjustment affective-professional commitment appeared to be the only commitment variable that differed significantly by gender, with female respondents (mean=5.3/s.d.=1.2) exhibiting higher levels compared to males (mean=5.0/s.d.=1.2). Interestingly males were found to exhibit significantly higher levels of professional-withdrawal behaviours and reduction-in-hours withdrawal behaviours compared to females. This pattern was consistent with the further findings that females (mean=4.2/s.d.=0.7) scored significantly higher for extra-role behaviour towards the individual, compared to males (mean=4.0/s.d.=0.6).

Table 9. 3 A comparison of commitment and outcome variables by ethnicity

Variable	Ethnicity Category					
	White	Black	Mixed ethnicity	Asian	Others	
	N=535	N=12	N=9	N=122	N=15	
	Mean(SD)	Mean(SD)	Mean(SD)	Mean(SD)	Mean(SD)	*P-Value
Professional Commitment						
Affective(1-7)	5.2(1.19)	5.5(0.85)	4.7(0.87)	5.3(1.28)	5.4(1.02)	0.262
Continuance(1-7)	5.2(1.18)	4.3(0.92)	5.1(1.30)	5.1(1.20)	5.3(0.72)	0.136
Normative(1-7)	3.5(1.31)	3.3(1.11)	3.9(0.98)	4.1(1.62)	3.8(1.58)	0.007
Organisational commitment						
Affective(1-7)	4.0(1.51)	3.5(1.61)	3.5(0.83)	4.2(1.58)	5.0(1.64)	0.071
Continuance(1-7)	4.0(1.28)	3.8(1.31)	4.2(1.03)	4.3(1.49)	4.3(0.81)	0.159
High-sacrifice(1-7)	3.8(1.1)	3.4(1.7)	4.0(1.3)	4.2(1.67)	4.2(1.2)	0.107
Low-alternative(1-7)	4.2(1.5)	4.0(1.1)	4.3(1.1)	4.4(1.6)	4.6(1.0)	0.283
Normative(1-7)	3.4(1.44)	2.9(1.32)	3.2(1.18)	3.7(1.58)	4.3(1.57)	0.065
Withdrawal Behaviour						
Professional(1-7)	2.5(1.46)	3.3(2.17)	3.3(1.88)	4.2(1.68)	2.6(1.84)	0.516
Organisational(1-7)	3.1(1.65)	3.4(1.83)	3.7(1.47)	3.2(1.83)	3.0(2.04)	0.803
Sector(1-7)	2.2(1.49)	3.4(2.09)	3.3(1.50)	2.6(1.85)	2.3(1.93)	0.022
Reduction-in-hours(1-7)	3.2(1.83)	3.9(1.94)	3.6(2.20)	3.6(1.96)	2.9(1.52)	0.197
In-role Behaviour(1-5)	4.4(0.66)	4.3(0.42)	4.4(0.55)	4.4(0.70)	4.4(0.61)	0.214
Extra-role Behaviour						
Individual(1-5)	4.1(0.65)	4.3(0.40)	3.9(0.39)	4.0(0.72)	4.0(0.53)	0.213
Organisation(1-5)	4.5(0.53)	4.4(0.49)	4.7(0.30)	4.4(0.66)	4.4(0.57)	0.667

*Kruskal-Wallis equality-of-populations rank test

9.2.4 A comparison by ethnicity of the commitment and outcome variables

It seems that there was no variability due to ethnicity as categorised in Table 9.3 in relation to the different commitment and outcome variables using the bonferroni-adjustment; with only normative-professional commitment approaching significance (p=0.007).

9.2.5 A comparison by status as breadwinner on the commitment and outcome variables

As Table 9.4 shows, using the bonferroni-adjustment, only high-sacrifice organisational commitment and reduction-in-hours withdrawal behaviour provided significance differences by status as breadwinner. Post-hoc analysis suggested that using the bonferroni-adjustment of $p \leq 0.0083$ there was a significance difference between those respondents that were the main-breadwinners (mean=12.1/s.d.=4.1) and those that were not (mean=10.6/s.d.=3.9) in terms of levels of high-sacrifice organisational commitment . Interestingly, post-hoc analysis also found that there was a significance difference between those community-pharmacists that were the main-breadwinners (mean=3.5/s.d.=1.84) and those that were not (mean=2.5/s.d.=1.90), as well as between those community-pharmacists that were the joint-breadwinners (mean=3.3/s.d.=1.78) and those that were not in terms of levels of reduction-in-hours withdrawal behaviour.

9.2.6 A comparison by living arrangements on the commitment and outcome variables

It is clear from Table 9.4 that whether a community-pharmacist was living with a partner/married, living alone or living in other arrangements appeared to have no significant bearing on their levels of commitment or outcome variables.

9.2.7 A comparison by type of dependents on the commitment and outcome variables

Table 9.4 also revealed that using the bonferroni-adjustment the difference in continuance-professional commitment was significant by responsibility for dependents. Post-hoc analysis using the bonferroni-adjustment of $p=0.0042$ revealed a significant difference in continuance-professional commitment between those community-pharmacists whom did not have any dependents (mean=5.0/s.d.=1.15) and those community-pharmacists that had responsibility for young dependents (mean=5.13/s.d.=1.17).

Table 9. 4 A comparison of commitment and outcome variables by breadwinner role, living status and dependents status

Variable	House Hold - Breadwinner				Living status				Dependents				
	Main-No N=128 Mean (SD)	Main-Yes N=350 Mean (SD)	Joint N=190 Mean (SD)	P-Value	Living Alone N=67 Mean (SD)	Married/ partner N=582 Mean (SD)	Living other N=36 Mean (SD)	P-Value	No dependents N=265 Mean (SD)	Young dependents N=326 Mean (SD)	Older dependents N=45 Mean (SD)	Both N=50 Mean (SD)	P-Value
Professional Commitment													
Affective	5.2(1.12)	5.1(1.25)	5.3(1.18)	0.119	5.1(1.09)	5.2(1.23)	5.3(1.15)	0.737	5.2(1.21)	5.2(1.14)	4.7(1.45)	5.2(1.32)	0.115
Continuance	5.0(1.20)	5.3(1.13)	5.1(1.23)	0.024	4.9(1.10)	5.2(1.19)	5.1(1.08)	0.165	5.0(1.15)	5.3(1.17)	5.2(1.31)	5.3(1.17)	0.001
Normative	3.5(1.33)	3.7(1.42)	3.6(1.39)	0.726	3.6(0.97)	3.6(1.43)	3.6(1.40)	0.977	3.6(1.37)	3.7(1.36)	3.5(1.53)	3.5(1.55)	0.604
Organisational commitment													
Affective	3.8(1.43)	4.1(1.57)	4.2(1.55)	0.075	4.2(1.39)	4.0(1.56)	3.8(1.49)	0.422	4.0(1.58)	4.2(1.48)	3.9(1.50)	4.3(1.73)	0.617
Continuance	3.8(1.23)	4.2(1.32)	4.0(1.28)	0.011	3.9(1.28)	4.0(1.31)	4.2(1.27)	0.420	3.9(1.31)	4.2(1.27)	4.2(1.34)	4.1(1.38)	0.085
High-sacrifice	3.5(1.3)	4.0(1.5)	3.8(1.4)	0.002	3.9(1.4)	3.9(1.4)	4.1(1.5)	0.649	3.7(1.4)	4.0(1.4)	3.8(1.5)	4.0(1.5)	0.035
Low alternate.	4.0(1.5)	4.2(1.5)	4.1(1.5)	0.340	3.9(1.4)	4.2(1.5)	4.4(1.5)	0.284	4.0(1.5)	4.3(1.5)	4.5(1.6)	4.2(1.5)	0.111
Normative	3.2(1.38)	3.5(1.52)	3.6(1.45)	0.063	3.6(1.24)	3.5(1.50)	3.3(1.49)	0.313	3.4(1.46)	3.5(1.45)	3.3(1.55)	3.8(1.56)	0.373
Withdrawal Behaviour													
Professional	2.5(1.64)	2.6(1.49)	2.5(1.55)	0.766	2.5(1.39)	2.6(1.55)	2.4(1.57)	0.683	2.6(1.56)	2.5(1.47)	2.9(1.64)	2.7(1.64)	0.313
Organisational	3.3(1.93)	3.2(1.63)	2.9(1.56)	0.086	3.3(1.57)	3.1(1.69)	3.7(1.70)	0.086	3.2(1.63)	3.1(1.71)	3.5(1.66)	2.9(1.86)	0.159
Sector	2.4(1.78)	2.3(1.51)	2.3(1.60)	0.894	2.3(1.53)	2.3(1.59)	2.8(1.82)	0.412	2.4(1.64)	2.2(1.56)	2.5(1.55)	2.3(1.58)	0.352
Reduce-in-hours	2.5(1.90)	3.5(1.84)	3.3(1.78)	0.001	3.6(1.77)	3.2(1.87)	3.3(1.93)	0.259	3.4(1.80)	3.0(1.87)	4.1(1.94)	3.4(1.85)	0.005
In-role Behaviour	4.4(0.68)	4.4(0.67)	4.4(0.67)	0.565	4.3(0.57)	4.4(0.69)	4.6(0.52)	0.177	4.4(0.71)	4.4(0.63)	4.3(0.63)	4.3(0.72)	0.294
Extra-role Behaviour													
Individual	4.1(0.59)	4.1(0.66)	4.1(0.68)	0.333	4.1(0.52)	4.1(0.68)	4.0(0.48)	0.067	4.0(0.67)	4.1(0.63)	4.1(0.63)	4.2(0.73)	0.186
Organisation	4.5(0.57)	4.5(0.54)	4.5(0.54)	0.740	4.5(0.38)	4.5(0.58)	4.4(0.48)	0.111	4.5(0.57)	4.5(0.54)	4.5(0.51)	4.5(0.63)	0.238

*Kruskal-Wallis equality-of-populations rank test

9.2.8 A comparison by actual hours of work on the commitment and outcome variables

It is highlighted in Table 9.5 that when adjusted for the bonferroni-correction, only continuance-organisational commitment, high-sacrifice organisational commitment and normative-organisational commitment differed significantly in their levels by averaged actual hours of work. Post-hoc analysis found, using a bonferroni-adjustment of $p=0.0012$, a significant difference in continuance-organisational commitment between community-pharmacists working between 11 and 20 hours per-week (mean=3.7/s.d.=1.28) and those working between 41 and 51 hours per-weeks (mean=4.2/s.d.=1.28), as well as between respondents working 11 and 20 hours per-week (mean=3.7/s.d.=1.28) and those working 61 hours or more (mean=4.5/s.d. =1.33).

Post-hoc analysis on high-sacrifice organisational commitment using the aforementioned bonferroni-adjustment found significant differences between those community-pharmacists working less than 10 hours (mean=10/s.d.=4.02) and those working 41 to 50 hours (mean=12.5/s.d.=4.39); between those working up to 10 hours (mean=10/s.d.=4.02) and those working 51 to 60 hours (mean=13.8/s.d.=4.50); between those working 11 to 20 hours (mean=10.2/s.d.=4.09) and those working 41 to 50 hours (mean=12.5/s.d.=4.39); between those working 11 to 20 hours (mean=10.2/s.d.=4.09) and those working 51 to 60 hours (mean=13.8/s.d.=4.50); and between those working 31 to 40 hours (mean=11.2/s.d.=4.09) and those working 51 to 60 hours (mean=13.8/s.d.=4.50). Finally, post-hoc analysis on normative-organisational commitment using the aforementioned bonferroni-adjustment found significant differences between respondents working up to 10 hours (mean=2.9/s.d.=1.33) and those working 41 to 50 hours (mean=3.7/s.d.=1.49), those working 51 to 60 hours (mean=4.0/s.d.=1.81) and those working 61 hours and over (mean=4.6/s.d.=1.0).

Table 9. 5 A comparison of commitment and outcome variables by actual hours of work

Variable	Average actual hours of work								Part-time		
	Up to 10 hours N=46 Mean(SD)	11 to 20 hours N=100 Mean(SD)	21 to 30 hours N=137 Mean(SD)	31 to 40 hours N=178 Mean(SD)	41 to 50 hours N=173 Mean(SD)	51 to 60 hours N=48 Mean(SD)	61 and over N=9 Mean(SD)	*P-Value	Actual hours part-time N=283 Mean(SD)	Actual hours full-time N=408 Mean(SD)	*P-Value
Professional Commitment											
Affective	5.3(1.20)	5.2(1.13)	5.1(1.31)	5.2(1.16)	5.2(1.26)	5.4(1.01)	4.8(1.39)	0.847	5.2(1.23)	5.2(1.19)	0.728
Continuance	5.2(1.08)	5.0(1.24)	5.2(1.20)	5.1(1.14)	5.3(1.17)	5.3(1.17)	4.4(1.10)	0.022	5.1(1.20)	5.2(1.16)	0.323
Normative	3.5(1.37)	3.7(1.28)	3.6(1.42)	3.6(1.37)	3.7(1.48)	3.5(1.39)	3.6(1.13)	0.811	3.6(1.36)	3.6(1.41)	0.974
Organisational commitment											
Affective	3.7(1.57)	3.9(1.42)	4.0(1.52)	3.9(1.46)	4.1(1.53)	4.6(1.96)	5.4(1.07)	0.008	3.9(1.49)	4.1(1.57)	0.081
Continuance	3.8(1.27)	3.7(1.28)	4.1(1.33)	3.9(1.22)	4.2(1.28)	4.5(1.33)	3.7(1.73)	0.003	3.9(1.31)	4.1(1.28)	0.012
High-sacrifice	3.3(1.4)	3.4(1.4)	3.9(1.4)	3.7(1.4)	4.2(1.5)	4.6(1.5)	3.7(1.8)	0.001	3.6(1.4)	4.0(1.5)	0.001
Low-alternative	4.1(1.5)	3.9(1.5)	4.2(1.6)	4.2(1.5)	4.3(1.4)	4.6(1.7)	3.7(1.8)	0.338	4.1(1.5)	4.3(1.5)	0.104
Normative	2.9(1.33)	3.3(1.26)	3.4(1.54)	3.3(1.37)	3.7(1.49)	4.0(1.81)	4.6(1.0)	0.001	3.3(1.42)	3.6 (1.50)	0.012
Withdrawal Behaviour											
Professional	2.8(1.62)	2.8(1.64)	2.5(1.52)	2.6(1.48)	2.3(1.48)	2.7(1.69)	2.7(1.35)	0.299	2.6(1.58)	2.5(1.50)	0.312
Organisational	3.4(1.80)	3.3(1.57)	2.9(1.66)	3.2(1.71)	3.2(1.69)	3.1(1.76)	3.1(1.50)	0.269	3.1(1.66)	3.2(1.70)	0.489
Sector	2.9(2.00)	2.4(1.51)	2.1(1.53)	2.3(1.56)	2.3(1.59)	2.3(1.60)	2.6(1.33)	0.139	2.3(1.63)	2.3(1.57)	0.910
Reduced hours	2.9(1.99)	2.8(1.98)	3.2(1.98)	3.4(1.70)	3.4(1.74)	3.8(2.04)	3.3(1.79)	0.013	3.0(1.98)	3.4(1.76)	0.001
In-role Behaviour	4.5(0.62)	4.4(0.59)	4.4(0.70)	4.4(0.66)	4.3(0.67)	4.4(0.74)	3.9(0.91)	0.411	4.4(0.65)	4.4(0.68)	0.297
Extra-role Behaviour											
Individual	4.2(0.59)	4.1(0.57)	4.2(0.65)	4.1(0.59)	4.0(0.71)	4.0(0.85)	4.0(0.63)	0.347	4.2(0.61)	4.0(0.67)	0.027
Organisation	4.5(0.44)	4.5(0.44)	4.5(0.62)	4.5(0.51)	4.5(0.56)	4.4(0.82)	4.7(0.34)	0.373	4.5(0.53)	4.5(0.57)	0.981

*Kruskal-Wallis equality-of-populations rank test

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9.2.9 A comparison by part-time status on the commitment and outcome variables

Similarly, when the previous categories were collapsed into two categories, part-time and full-time hours, using the bonferroni-adjustment, only high-sacrifice continuance-organisational commitment and reduction-in-hours withdrawal behaviour remained statistically different between part-time and full-time community-pharmacists. High-sacrifice continuance-organisational commitment was found to be higher in full-time community-pharmacists (mean=12.0/s.d.=4.36) compared to part-time community-pharmacists (mean=10.9/s.d.=4.19), and similarly in terms of hours-reduction withdrawal behaviour full-time community-pharmacists (mean=3.4/s.d.=1.76) reported higher levels compared to part-time community-pharmacists (mean=3.0/s.d.=1.98).

9.2.10 A comparison by number of years qualified in pharmacy on the commitment and outcome variables

Table 9.6 illustrated using the bonferroni-adjustment, only differences in extra-role behaviour-organisation was statistically significant. Post-hoc analysis using a bonferroni-adjustment of p=0.0017 found that extra-role behaviour-organisation was lower in those community-pharmacists whom have been qualified 11 to 20 years (mean=4.4/s.d.=0.61) compared to those qualified 21 to 30 years (mean=4.5/s.d.=0.61).

9.2.11 A comparison by the number of years in community-pharmacy on the commitment and outcome variables

Interestingly, there appeared to be no difference in commitment levels dependent upon time in community-pharmacy. Table 9.6 illustrated using the bonferroni-adjustment only sector-withdrawal behaviour exhibited significant differences by time in community-pharmacy. Post-hoc analysis, using a bonferroni-adjustment of p=0.0017, found that sector-withdrawal behaviour was significantly higher in those 2 to 5 years in community-pharmacy (mean=3.1/s.d.=2.05) compared with those 11 to 20 years (mean=2.2/s.d.=1.51), those 21 to 30 years (mean=2.2/s.d.=1.47) and those 31 to 40 years (mean=2.1 and s.d.=1.49) in community-pharmacy.

Table 9. 6 A comparison of commitment and outcome variables by time qualified in pharmacy and time as a community-pharmacist

Variable	Time qualified in pharmacy							Time in Community-pharmacy						
	2 to 5 years N=56 Mean (SD)	6 to 10 years N=52 Mean (SD)	11 to 20 years N=129 Mean (SD)	21 to 30 years N=218 Mean (SD)	31 to 40 years N=189 Mean (SD)	41 years or higher N=48 Mean (SD)	*P-Value	2 to 5 years N=60 Mean (SD)	6 to 10 years N=69 Mean (SD)	11 to 20 years N=155 Mean (SD)	21 to 30 years N=227 Mean (SD)	31 to 40 years N=148 Mean (SD)	41 years or higher N=34 Mean (SD)	*P-Value
Professional Commitment														
Affective	5.4(1.21)	5.1(1.28)	5.0(1.12)	5.1(5.12)	5.3(1.11)	5.2(1.48)	0.163	5.4(1.19)	5.2(1.18)	5.1(1.14)	5.1(1.28)	5.3(1.14)	5.3(1.36)	0.430
Continuance	5.0(1.30)	5.4(1.14)	5.2(1.25)	5.1(1.16)	5.2(1.13)	5.2(1.13)	0.405	4.9(1.27)	5.3(1.14)	5.1(1.22)	5.1(1.18)	5.2(1.14)	5.4(1.00)	0.418
Normative	3.5(1.32)	3.6(1.52)	3.7(1.32)	3.6(1.33)	3.6(1.45)	3.8(1.51)	0.944	3.5(1.29)	3.7(1.46)	3.6(1.24)	3.5(1.39)	3.8(1.48)	3.9(1.53)	0.619
Organisational commitment														
Affective	3.9(1.45)	3.9(1.5)	3.8(1.47)	4.2(1.54)	3.9(1.54)	4.2(1.74)	0.208	4.0(1.49)	3.9(1.49)	3.9(1.41)	4.2(1.62)	4.0(1.54)	4.3(1.69)	0.682
Continuance	4.1(1.19)	4.3(1.13)	4.4(1.21)	4.0(1.31)	3.9(1.35)	3.7(1.39)	0.048	4.1(1.19)	4.3(1.12)	4.2(1.24)	4.0(1.32)	3.8(1.34)	3.6(1.53)	0.080
High-sacrifice	3.9(1.4)	4.1(1.4)	4.1(1.4)	3.9(1.4)	3.7(1.5)	3.5(1.5)	0.014	3.9(1.5)	4.1(1.3)	4.0(1.4)	3.9(1.4)	3.6(1.5)	3.5(1.7)	0.059
Low alternate.	4.4(1.5)	4.4(1.5)	4.4(1.4)	4.1(1.5)	4.1(1.5)	3.7(1.6)	0.125	4.3(1.5)	4.3(1.5)	4.4(1.4)	4.2(1.5)	4.0(1.5)	3.5(1.6)	0.100
Normative	3.4(1.37)	3.5(1.45)	3.4(1.37)	3.6(1.54)	3.4(1.45)	3.3(1.53)	0.734	3.4(1.46)	3.6(1.49)	3.4(1.33)	3.6(1.56)	3.3(1.43)	3.4(1.59)	0.715
Withdrawal Behaviour														
Professional	2.7(1.82)	2.5(1.70)	2.5(1.62)	2.4(1.38)	2.7(1.53)	2.8(1.46)	0.391	2.8(1.83)	2.6(1.70)	2.4(1.51)	2.5(1.43)	2.6(1.55)	2.8(1.28)	0.198
Organisational	3.5(1.83)	3.2(1.68)	3.3(1.78)	3.1(1.69)	3.1(1.58)	3.1(1.55)	0.635	3.5(1.84)	3.3(1.79)	3.2 1.71)	3.0(1.68)	3.1(1.58)	3.1(1.45)	0.454
Sector	2.9(2.00)	2.5(1.63)	2.4(1.74)	2.2(1.44)	2.1(1.46)	2.4(1.59)	0.067	3.1(2.05)	2.7(1.74)	2.2(1.51)	2.2(1.47)	2.1(1.49)	2.4(1.45)	0.003
Reduce hours	3.6(2.00)	3.4(1.80)	2.9(1.85)	3.1(1.87)	3.4(1.82)	3.6(1.89)	0.069	3.7(1.99)	3.1(1.83)	3.0(1.81)	3.2(1.86)	3.5(1.87)	3.7(1.67)	0.033
In-role Behaviour	4.3(0.80)	4.4(0.62)	4.3(0.74)	4.4(0.64)	4.3(0.67)	4.6(0.39)	0.087	4.4(0.72)	4.4(0.66)	4.4(0.71)	4.4(0.67)	4.3(0.65)	4.6(0.50)	0.336
Extra-role Behaviour														
Individual	4.0(0.73)	4.0(0.61)	4.0(0.66)	4.1(0.71)	4.1(0.6)	4.3(0.55)	0.063	4.0(0.71)	4.0(0.70)	4.0(0.60)	4.1(0.70)	4.1(0.59)	4.3(0.53)	0.060
Organisation	4.4(0.70)	4.5(0.57)	4.4(0.61)	4.5(0.61)	4.5(0.40)	4.6(0.35)	0.003	4.4(0.68)	4.5(0.59)	4.4(0.57)	4.5(0.60)	4.5(0.41)	4.6(0.30)	0.012

*Kruskal-Wallis equality-of-populations rank test

Table 9. 7 A comparison of commitment and outcome variables by job-role, by being an employee and by being a locum community-pharmacist

Variable	Job-role								Employee?			Locum?		
	Owner N=72 Mean (SD)	Manager N=203 Mean (SD)	Relief N=66 Mean (SD)	Second N=56 Mean (SD)	Locum N=221 Mean (SD)	Non-store N=16 Mean (SD)	Others N=59 Mean (SD)	*P-Value	Yes N=400 Mean (SD)	No N=293 Mean (SD)	*P-Value	Yes N=221 Mean (SD)	No N=472 Mean (SD)	*P-Value
Professional Commitment														
Affective	5.3(1.28)	5.2(1.18)	5.2(1.00)	4.9(1.35)	5.2(1.20)	5.0 (1.53)	4.9(1.26)	0.505	5.2(1.20)	5.2(1.22)	0.703	5.2(1.20)	5.2(1.21)	0.672
Continuance	5.2(1.17)	5.3(1.15)	5.2(1.18)	5.2(1.24)	5.0(1.17)	5.6 (0.95)	5.4(1.22)	0.094	5.2(1.17)	5.0(1.18)	0.019	5.0(1.17)	5.2 (1.7)	0.005
Normative	3.7(1.53)	3.7(1.40)	3.5(1.29)	3.6(1.31)	3.6(1.40)	2.9 (1.46)	3.8(1.32)	0.451	3.6(1.36)	3.7(1.43)	0.793	3.6(1.40)	3.6(1.39)	0.989
Organisational commitment														
Affective	5.9(1.48)	4.0(1.39)	3.4(1.42)	3.9(1.28)	3.6(1.34)	4.4(1.66)	4.4(1.48)	0.001	4.0(1.43)	4.1(1.68)	0.335	3.6(1.34)	4.2(1.59)	0.001
Continuance	4.5(1.32)	4.1(1.31)	4.0(1.30)	4.4(1.12)	3.6(1.26)	4.1(0.98)	4.2(1.27)	0.001	4.2(1.30)	3.8(1.32)	0.003	3.6(1.26)	4.2(1.28)	0.001
High-sacrifice	4.8(1.6)	3.9(1.4)	3.8(1.4)	4.3(1.2)	3.3 (1.3)	3.7(1.5)	4.3(1.4)	0.001	4.0(1.6)	3.6 (1.5)	0.006	3.3(1.30)	4.1(1.4)	0.001
Low alternat.	4.3(1.4)	4.3(1.5)	4.2(1.6)	4.5(1.3)	3.9(1.5)	4.5(1.1)	4.2(1.6)	0.115	4.3(1.5)	4.0(1.5)	0.017	3.9(1.5)	4.3(1.5)	0.004
Normative	5.2(1.51)	3.4(1.30)	2.9(1.25)	3.5(1.21)	3.1(1.30)	3.4(1.71)	3.9(1.49)	0.001	4.5(1.35)	3.6(1.62)	0.256	3.1(1.30)	3.6(1.51)	0.001
Withdrawal Behaviour														
Professional	2.7(1.53)	2.3(1.47)	2.6(1.55)	2.8(1.58)	2.7(1.58)	2.9 (1.79)	2.4(1.32)	0.032	2.5(1.50)	2.7(1.57)	0.029	2.7(1.58)	2.5(1.51)	0.081
Organisational	2.5(1.66)	3.2(1.75)	3.2(1.49)	2.9(1.56)	3.4(1.69)	2.6 (1.50)	3.0(1.56)	0.001	3.1(1.65)	3.2(1.73)	0.502	3.4(1.69)	3.0(1.66)	0.002
Sector	2.1(1.32)	2.2(1.62)	2.3(1.75)	2.2(1.68)	2.5(1.63)	2.4 (1.72)	2.2(1.33)	0.483	2.2(1.61)	2.4(1.57)	0.111	2.5(1.63)	2.2(1.57)	0.030
Reduce hour	3.5(1.70)	3.4(1.81)	2.9(2.06)	2.8(1.72)	3.5(1.91)	2.8 (1.75)	2.8(1.82)	0.008	3.1(1.85)	3.5(1.86)	0.006	3.5(1.91)	3.2(1.83)	0.052
In-role Behaviour	4.4(0.66)	4.3(0.68)	4.3(0.66)	4.2(0.87)	4.5(0.59)	4.6(0.49)	4.3(0.67)	0.014	4.3(0.70)	4.5(0.61)	0.008	4.5(0.59)	4.3(0.69)	0.001
Extra-role Behaviour														
Individual	4.2(0.72)	4.0(0.63)	4.0(0.48)	4.1(0.78)	4.1(0.64)	4.2(0.57)	4.1(0.75)	0.210	4.1(0.65)	4.1(0.66)	0.089	4.1(0.64)	4.1(0.66)	0.422
Organisation	4.5(0.46)	4.5(0.49)	4.5(0.40)	4.5(0.77)	4.5(0.52)	4.7(0.33)	4.4(0.87)	0.284	4.5(0.59)	4.5(0.50)	0.707	4.5(0.52)	4.5(0.57)	0.574

*Kruskal-Wallis equality-of-populations rank test

9.2.12 A comparison by job-role on the commitment and outcome variables

Whilst there was no significant difference in the professional commitment variables in relation to job-role, there were significant differences using the bonferroni-correction of affective-organisational commitment, continuance-organisational commitment, high-sacrifice continuance-organisational commitment, normative-organisational commitment, and organisational-withdrawal behaviours in relation to job-role (Table 9.7). Post-hoc analysis using a bonferroni-adjustment of 0.00119, found that owners (mean=5.9/s.d.=1.48) had significantly higher levels of affective-organisational commitment compared to manager (mean=4.0/s.d.=1.39), relief community-pharmacists (mean=3.4 s.d.=1.42), second community-pharmacists (mean=3.9/s.d.=1.28), locums (means=3.6/s.d.=1.34) and others (mean=4.4/s.d.=1.48). In addition, there appeared to be a significant difference between relief community-pharmacists (mean=3.4/s.d.=1.42) and other community-pharmacists (mean=4.4/s.d.=1.48) in terms of affective-organisational commitment. Equally there was also a significant difference, between being a locum (mean=3.6/s.d.= 1.34) and other community-pharmacists (mean=4.4/s.d. =1.48).

Post-hoc analysis on job-role in continuance-organisational commitment found that locum community-pharmacists (mean=3.6/s.d.=1.26) reported significantly lower levels compared to owners (mean=4.5/s.d.=1.32), managers (mean=4.1/s.d.=1.31) and second community-pharmacists (mean=4.4/s.d.=1.12). Post-hoc analysis on job-role in high-sacrifice continuance-organisational commitment found significantly higher levels in owner community-pharmacists (mean=14.3/s.d.=4.7) compared to managers (mean=11.8/s.d.=4.2), relief community-pharmacists (mean=11.5/s.d.=4.3) and locum community-pharmacists (mean=10.0/s.d.=3.9). Post-hoc analysis also found that locum community-pharmacists (mean=10.0/s.d.=3.9) had lower levels of high-sacrifice continuance-organisational commitment compared to managers (mean=11.8/s.d.=4.2), second community-pharmacists (mean=12.8/s.d.=3.7) and other community-pharmacists (mean=12.7/s.d.=4.2). As expected, post-hoc analysis on job-role in normative-organisational commitment found that owners (mean= 5.2 and s.d.=1.51) consistently reported higher levels than all other community-pharmacists which included managers (mean=3.4/s.d.=1.30), relief (mean=2.9/s.d.=1.25), second (mean=3.5/s.d.=1.21), locum (mean=3.1/s.d.=1.30), non-store based

(mean=3.4/s.d.=1.71) and other (mean=3.9/s.d.=1.49) community-pharmacists. Post-hoc analysis also found that other community-pharmacists (mean=3.9/s.d.=1.49) reported higher levels of normative commitment compared to relief community-pharmacists (mean=2.9/s.d.=1.25) and locum community-pharmacists (mean=3.1/s.d.=1.30). Finally, post-hoc analysis found that organisational-withdrawal behaviour was significantly lower in owners (mean=2.5/s.d.=1.66) compared to managers (mean=3.2/s.d.=1.75) and locum community-pharmacists (mean=3.5/s.d.=1.21).

9.2.13 A comparison by status as employee on the commitment and outcome variables

Table 9.7 also revealed, using the bonferroni correction, it was found that only the difference in continuance-organisational commitment remained significant with employees (mean=4.2 and s.d.=1.30) reporting higher levels than non-employees (mean=3.8 and s.d.=1.32).

9.2.14 A comparison by status as locum on the commitment and outcome variables

Again from Table 9.7 using the bonferroni-adjustment locums appeared to report consistently significantly lower levels in all of the organisational commitment variables compared to non-locum respondents except for the variable low-alternative continuance-organisational commitment (Table 8.7). Locums were also found to report significantly higher levels of organisational-withdrawal behaviours and interestingly significantly higher levels of in-role behaviour, compared to non-locums (Table 8.7).

9.2.15 A comparison by pharmacy size on the commitment and outcome variables

It is apparent from Table 9.8 that there were significant difference amongst all of the organisational commitment variables, as well as, continuance-professional commitment, and organisational-withdrawal behaviour using the bonferroni-adjustment. Post-hoc analysis found significantly higher levels of affective-organisational commitment in community-pharmacists working in independents (mean=4.9/s.d.=1.66) compared to those working in medium-sized multiples (mean=4.1/s.d.=1.34), large-multiples (mean=3.6/s.d.=1.34), and those working in different-sized pharmacies

(mean=3.4/s.d.=1.5). Post-hoc analysis also found community-pharmacists working in small-chains (mean=4.7/s.d.=1.55) reported higher levels of affective-organisational commitment compared to those in large-multiples (mean=3.6/s.d.=1.34) and those working in different-sized pharmacies (mean=3.4/s.d.=1.5). Interestingly those community-pharmacists working in medium-sized multiples (mean=4.1/s.d.=1.34) also reported significantly higher levels of affective-organisational commitment than those working in large-multiples (mean=3.6/s.d.=1.34).

Table 9. 8 A comparison of commitment and outcome variables by size of pharmacy

Variable	Pharmacy size					
	Independent	Small-chain (2-5 stores)	Medium-sized multiple (6-300	Large-multiple (over 300 stores)	More than one size of Organisat	
	N=137 Mean(SD)	N=74 Mean(SD)	N=128 Mean(SD)	N=324 Mean(SD)	N=25 Mean(SD)	P-Value
Professional Commitment						
Affective	5.3(1.23)	5.2(1.28)	5.1(1.21)	5.2(1.16)	5.0(1.46)	0.832
Continuance	5.3(1.10)	5.1(1.29)	4.9(1.17)	5.2(1.16)	4.6(1.35)	0.027
Normative	3.9(1.50)	3.6(1.36)	3.6(1.44)	3.6(1.31)	3.5(1.47)	0.452
Organisational commitment						
Affective	4.9(1.66)	4.7(1.55)	4.1(1.34)	3.6(1.34)	3.4(1.5)	0.001
Continuance	4.2(1.34)	3.8(1.25)	3.6(1.21)	4.2(1.31)	3.7(1.0)	0.001
High-sacrifice	4.17(1.6)	3.7(1.4)	3.4(1.3)	4.0(1.4)	3.5(1.18)	0.001
Low-alternative	4.2(1.5)	4.0(1.4)	3.8(1.5)	4.4(1.5)	4.0(1.1)	0.001
Normative	4.3(1.67)	4.0(1.45)	3.4(1.37)	3.1(1.23)	2.8(1.4)	0.001
Withdrawal Behaviour						
Professional	2.5(1.55)	2.5(1.54)	2.6(1.55)	2.5(1.49)	3.4(1.92)	0.314
Organisational	2.8(1.63)	2.8(1.67)	3.1(1.75)	3.3(1.64)	3.4(1.82)	0.003
Sector	2.1(1.47)	2.2(1.49)	2.4(1.67)	2.3(1.59)	3.1(1.98)	0.089
Reduction-in-hours	3.2(1.81)	3.2(1.98)	3.4(1.88)	3.1(1.87)	3.9(1.97)	0.271
In-role Behaviour	4.5(0.65)	4.4(0.63)	4.3(0.70)	4.3(0.67)	4.5(0.81)	0.136
Extra-role Behaviour						
Individual	4.2(0.64)	4.1(0.88)	4.1(0.60)	4.1(0.61)	3.9(0.80)	0.283
Organisation	4.6(0.42)	4.4(0.91)	4.5(0.55)	4.5(0.57)	4.4(0.78)	0.930

*Kruskal-Wallis equality-of-populations rank test

Post-hoc analysis found that those employed in medium-sized multiples (mean=3.6/s.d.=1.21) exhibited significantly less continuance-organisational commitment compared to those working in independents (mean=4.2/s.d.=1.34) and those in large-multiples (mean=4.2/s.d.=1.31). This was echoed by post-hoc analysis in high-sacrifice continuance-organisational commitment with those working in medium-sized multiples (mean=3.4/s.d.=1.3) reporting significantly less levels than those

working in independents (mean=4.17/s.d.=1.6) or large-multiples (mean=4/s.d.=1.4). Interestingly, post-hoc analysis also showed that those working in large-multiples (mean=4.4/s.d.=1.5) being significantly higher in low-alternative organisational commitment compared to those working in medium-multiples (mean=3.8/s.d.=1.5). Post-hoc analysis also found that those working in independents (mean=4.3/s.d.=1.67) also reported significantly higher levels of normative-organisational commitment compared to those working in medium-multiples (mean=3.4/s.d.=1.37), large-multiples (mean=3.1/s.d.=1.23) and those working in different-sized pharmacies (mean=2.8/s.d.=1.4). In addition those working in small-chains (mean=4.0/s.d.=1.45) also reported significantly higher levels of normative-organisational commitment compared to those working in large-multiples (mean=3.1/s.d.=1.23) and those working in different-sized pharmacies (mean=2.8/s.d.=1.4). Finally, post-hoc analysis illustrated that those working in large-multiples (mean=3.3/s.d.=1.64) reported much higher levels of organisational-withdrawal behaviours than those working in independents (mean=2.8 and s.d.=1.63).

9.3   Assessment of the relationship between each of the variables

Correlational analyses were performed with a focus upon the relationships between the different commitments and outcome variables. Five multiply-imputed dataset were used to deal with the bias that may be incurred by the missing data, with pooled coefficients using SPSS 20.0. To compensate for the inflated chances of type one errors due to multiple significance testing a bonferroni-adjustment of $p \leq 0.0003$ was used. In addition, where applicable the significance difference between selected correlations were calculated using formulas given by Cohen et al[449] for those in independent sub-samples and Steiger[450] for those from the same sub-sample. The analysis reported in Table 9.9 suggested out of all the commitment variables affective-professional commitment had the strongest negative relationship (r=-.54) with professional-withdrawal behaviour, followed by affective-organisational commitment (r=-0.32). Interestingly, affective-organisational commitment, and normative-professional and organisational commitments yielded r=-0.32, r=-0.28 and r=-0.3 respectively, all of which were moderate negative associations with professional-withdrawal behaviour.

Continuance-professional commitment was also associated with professional-withdrawal behaviours, negatively. However, it was only able to muster 2.6% shared variance between the two variables, whereas the shared variance between affective-professional commitment and professional-withdrawal behaviour was 29.3%. Affective-organisational commitment (r=-0.54, r^2=29.2%) had the strongest relationship with organisational-withdrawal behaviour, followed closely by normative-organisational behaviour (r=-0.46, r^2=21.2%). Strikingly, low-alternative organisational commitment had a weak positive relationship with organisational-withdrawal behaviour (r=0.2, r^2=4%). Affective-professional commitment (r=-0.37, r^2=13.7%) was revealed to have a negative moderate sized relationship with organisational-withdrawal behaviours. Affective-professional commitment (r=-0.4, r^2=16%) appeared to have the greatest relationship with sector-withdrawal behaviour, with affective-organisational commitment (r=-0.31, r^2=9.6%) and normative-organisational commitment (r=-0.28, r^2=7.8%) eliciting similar sized negative effects with sector-withdrawal behaviour. Affective-professional commitment also had the greatest relationship with reduction-in-hours withdrawal behaviour (r=-0.28, r^2=7.8%), although this was moderate weak. Affective-organisational commitment (r=-0.23, r^2=5.3%) and normative-organisational commitment (r=0.16, r^2=2.6%) also had moderately weak to weak negative associations with reduction-in-hours withdrawal behaviours.

In terms of the outcome behaviours related to work-performance, as illustrated in Table 9.9, affective-professional commitment was most prominent of the commitment variables with moderately weak positive associations with in-role behaviour (r=0.28, r^2=7.8%), extra-role behaviour-individual (r=0.23, r2=5.3%) and extra-role behaviour-organisation (r=0.25, r2=6.3%). No other commitment variable, except for affective-organisational commitment, had an association with any of the work-performance outcome variables, with affective-organisational commitment (r=0.16, r2=2.6%) having a weak association with extra-role behaviour-individual.

9.3.1 Correlational analysis of relationships between the commitment and outcome variables by age

As detailed in Appendix 9.1, affective-professional commitment consistently had the strongest relationship albeit negative, with professional-withdrawal behaviours,

throughout the different age groups with the strength of this relationship peaking in the 41 to 50 years age group (r=-0.67). Interestingly except for the youngest age group (below 30 years) and the oldest age group (61 years old and over), affective-organisational commitment also had significant negative associations with professional-withdrawal behaviour (ranging from r=-0.29 to r=-0.38). In those aged below 30 years old, the only other commitment variable that was associated with an outcome variable was affective-organisational commitment and its relatively strong negative relationship with organisational-withdrawal behaviour (r=-.47). In the 31 to 40 age group affective-professional commitment and affective-organisational commitment both had moderately high negative relationships with professional-withdrawal behaviours (r=-0.48 & r=-0.38, respectively), organisational-withdrawal behaviours (r=-0.39 & r=-0.52, respectively) and sector-withdrawal behaviours (r=-0.39 & r=-0.37, respectively). In addition normative-organisational commitment also exhibited a moderately strong negative relationship with organisational-withdrawal behaviour (r=-0.41). This said there was no relationship found between the commitment variables and the work-performance behaviours in this age group.

There appeared to be a stronger influence of the commitment variables in the 41 to 50 years age group, with affective-professional commitment having a significantly stronger negative (r=-0.67) relationship with professional-withdrawal behaviour than that found in the age group 31 to 40 years old. This was also mirrored in the significantly stronger relationship found between affective-organisational commitment and organisational-withdrawal behaviour (r=-0.68). Interestingly, normative-organisational commitment (r=-0.55) had a greater negative impact upon organisational-withdrawal behaviour than did affective-professional commitment (r=-0.37). Sector-withdrawal behaviour was moderately negatively related to affective-professional commitment (r=-0.43), affective-organisational commitment (r=-0.42) and normative-organisational commitment (r=-0.36). Affective-professional commitment seemed to be most influential in this age group with a moderate negative relationship with reduction-in-hours withdrawal behaviour (r=-0.30) and a moderately strong relationship with in-role behaviours (r=0.41).

Table 9. 9 Correlational analysis between the variables for all respondent community-pharmacists

	apc	cpc	npc	aoc	coc	Hsoc	Laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.12	1													
Npc	0.44*	0.18*	1												
Aoc	0.39*	0.02	0.32*	1											
Coc	-0.18	0.40*	0.17*	-0.04	1										
Hsoc	-0.09	0.35*	0.27*	0.14	0.87*	1									
Laoc	-0.23*	0.35*	0.05	-0.19*	0.88*	0.54*	1								
Noc	0.33*	0.04	0.51*	0.80*	0.14	0.31*	-0.04	1							
Pwb	-0.54*	-0.16*	-0.28*	-0.32*	0.08	-0.01	0.14	-0.30*	1						
Owb	-0.37*	-0.01	-0.19*	-0.54*	0.12	-0.01	0.2*	-.046*	0.56*	1					
Swb	-0.40*	-0.12	-0.16*	-0.31*	0.07	0.02	0.12	-.028*	0.65*	0.58*	1				
Rhwb	-0.25*	-0.01	-0.08	-0.23*	0.11	0.1	0.07	-.016*	0.44*	0.40*	0.37*	1			
Irb	0.28*	-0.01	0.12	0.13	-0.10	-0.1	-0.09	0.07	-.21*	0.18*	-0.19*	-0.14	1		
Erbi	0.23*	0.08	0.1	0.16*	-0.02	-0.01	-0.03	0.11	-0.06	-0.10	-0.11	-0.04	0.34*	1	
Erbo	0.25*	0.11	0.06	0.14	-0.05	-0.06	-0.04	0.05	-0.16*	-0.14	-0.18*	-0.13	0.41*	0.40*	1

Affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative-continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alterative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour -individual (ERBI), and extra-role behaviour-organisation (ERBO)

In the age group 51 to 60 years old, affective-professional commitment and affective-organisational commitment again were the most influential. However, professional-withdrawal behaviour was found to be related negatively to four separate commitment variables with affective-professional commitment having the strongest relationship (r=-0.50), followed by normative-organisational commitment (r=-0.40) and affective-organisational commitment (r=-0.36), with normative-professional commitment (r=-0.31) also having a moderately sized relationship. Affective-organisational commitment (r=-0.49) had a significantly stronger negative relationship with organisational-withdrawal behaviour than did affective-professional commitment (r=-0.41), although it was similar in strength to that between normative-organisational commitment (r=-0.45) and organisational-withdrawal behaviour. In addition affective-professional commitment (r=-0.41) had a moderately strong negative relationship with sector-withdrawal behaviour which was significantly stronger than the moderately sized negative relationship between affective-organisational commitment (r=-0.32) and sector-withdrawal behaviour. Interestingly, unlike in younger age groups in which there were no relationship, affective-organisational commitment (r=-0.27) had a significant negative, albeit moderately weak, relationship with reduction-in-hours withdrawal behaviour in this age group. Indeed, the other significant relationship with reduction-in-hours withdrawal behaviours was with affective-professional commitment in the age group 41 to 50 years. Finally in this age group 51 to 60 years, affective-professional-withdrawal behaviours (r=0.27) again had a significant positive, albeit moderately weak relationship with in-role behaviour, which was significantly weaker than that found in the same relationship in the age group 41 to 50 years (r=0.41).

In the oldest age group (61 years and over), as in the previous age groups, affective-professional commitment had a moderately strong negative relationship with professional-withdrawal behaviour, as did affective-organisational commitment with organisational-withdrawal behaviour. Interestingly, in this age group only these two forms of commitment had any significant relationship with the outcome variables, although this was restricted to only the withdrawal behaviours, as there was no significant relationship found between any of the commitment variables and the work-performance behaviours in this age group. Strikingly, affective-organisational commitment had a relatively strong negative relationship with reduction-in-hours

withdrawal behaviour, which was of similar strength to the relationship between affective-organisational commitment and organisational-withdrawal behaviour in this age group; however, it was significantly stronger than the same relationship in any of the younger age groups.

Affective-professional commitment's relationship with sector-withdrawal behaviour was consistent in size and direction throughout the different age groups, with the exception of the first age group. Affective-professional commitment and affective-organisational commitment had the stronger and more significant relationships with the withdrawal behaviours over the different age groups. However both forms of normative commitment exhibited significant relationships in the middle to older age categories, whilst neither of the continuance commitments had any significant relationships when the responders were stratified by age group. Only affective-professional commitment had any relationship with any of the work-performance behaviours and this was restricted to the middle to older age groups. However, no form of commitment was found to be significantly related to any of the extra-role behaviours when the community-pharmacists were stratified by age group.

9.3.2 Correlational analysis of relationships between the commitment and outcome variables by gender

As noted in Appendix 9.2 and whilst using the bonferroni-adjustment of 0.0003, affective-professional commitment was found to have the strongest relationship for both female and male community pharmacists with professional-withdrawal behaviour of r=-0.56 and r=-0.50, respectively. Post-hoc analysis suggested that there was no difference between the two (p=0.32) correlational coefficients. In male community-pharmacists normative-professional commitment and affective-organisational commitment had the same strength of negative relationship with professional-withdrawal behaviour (r=-0.27), with normative-organisational commitment having a fractionally weaker moderate negative relationship as well (r=-0.25). Equally, in female community-pharmacists affective-organisational commitment (r=-0.35), normative-organisational commitment (r=-0.34) and normative-professional commitment (r=-0.30) all were negatively associated with professional-withdrawal behaviour except these relationships tended to be marginally higher than their male counter parts. In male respondents

affective-organisational commitment (r=-0.48) and normative-organisational commitment (r=-0.44) had the greatest relationships with organisational-withdrawal behaviours which was replicated in females except with stronger negative associations of r=-58 and r=-.47 respectively. Affective-professional commitment had only a moderate negative relationship with organisational-withdrawal behaviour in both male (r=-0.36) and female (r=-0.37) community-pharmacists. Interestingly normative-professional commitment had a moderately weak association with organisational-withdrawal behaviours in the male sample (r=-.29) but no association in female community-pharmacists. Interestingly despite finding no relationship between continuance-organisational commitment and organisational-withdrawal behaviour, in either gender, there was a significant positive weak (r=0.24) relationship between low-alternatives and organisational-withdrawal behaviour, which was found in female community-pharmacists but not replicated in male community-pharmacists.

In both the male and female community-pharmacists sector-withdrawal behaviour was more strongly negatively associated with affective-professional commitment in both males (r=-0.36) and females (r=-0.42), followed by affective-organisational commitment (r=-0.28 and r=-0.33, respectively). However, in the female sample normative-organisational commitment also had a moderate negative association (r=-0.32) with sector-withdrawal behaviour which was not replicated in the male sample. Reduction-in-hours withdrawal behaviour was related negatively and weakly, similarly to both male and female community-pharmacists' affective-professional commitment and affective-organisational commitment. It is noteworthy that only affective-professional commitment influences any of the work-performance behaviours, with both male (r=0.27) and female (r=0.27) community-pharmacists exhibiting relatively weak positive relationships with in-role behaviour. However, unlike in the male sample in which it had a moderately weak positive relationship with extra-role behaviour towards the individual (r=0.25) and a moderately positive relationship with extra-role behaviour towards the organisation (r=0.34), affective-professional commitment had no such relationships with the extra-role behaviours in the female sample.

9.3.3 Correlational analysis of relationships between the commitment and outcome variables by ethnicity

Owing to the divergence in numbers, respondents were crudely stratified into white and ethnic-minority community-pharmacists. According to Appendix 9.3 and using the bonferroni-adjustment, the strong negative relationships between affective-professional commitment and professional-withdrawal behaviour and affective-organisational commitment and organisational-withdrawal behaviour appeared to be consistent between the two groups. Interestingly normative-organisational commitment and normative-professional commitments also had a significant medium-sized relationship with professional-withdrawal behaviour in white community-pharmacists which was not replicated in ethnic-minority community-pharmacists. Interestingly affective-professional commitment in ethnic-minority community-pharmacists ($r=-0.49$) had a stronger negative relationship with sector-withdrawal behaviour than in the white community-pharmacists group ($r=-0.36$). The latter difference was also replicated in the relationship between affective-professional commitment and reduction-in-hours withdrawal behaviour. Affective-professional commitment was found to be positively related to each of the work-performance behaviours in the white community-pharmacists, albeit with weak associations, whereas these relationships were not found to be significant in the ethnic-minority community-pharmacists. Strikingly normative-organisational commitment had a greater significant relationship with the withdrawal behaviours which was not replicated in the ethnic-minority community-pharmacists. Finally, none of the commitment variables were related to the work-performance behaviours in the ethnic-minority community-pharmacists whilst in addition to affective-professional commitment, continuance-professional commitment , and affective-organisational commitment also had positive, albeit weak relationships with extra-role behaviour towards the organisation ($r=0.14$) and extra-role behaviour towards the individual ($r=0.18$), respectively.

9.3.4 Correlational analysis of relationships between the commitment and outcome variables by status as breadwinner

Again affective-professional commitment has been found to be the most prominent form of commitment with significant relationships with both withdrawal behaviours and

work-performance behaviours, as illustrated by Appendix 9.4. However, this is most pronounced in the main-breadwinner status community-pharmacists, in which affective-professional commitment is significantly related in positive moderate sized associations with in-role behaviour (r=0.34), extra-role behaviour-individual (r=0.29) and extra-role behaviour-organisation (r=0.31). Interestingly normative-organisational commitment has a strong to moderately strong negative relationship in each of the three breadwinner groups, with main-breadwinner community-pharmacists tending to be weaker than the other two groups. Interestingly, in non-breadwinner community-pharmacists professional-withdrawal behaviour has a similar sized negative relationship with both affective-professional and organisational commitments and normative-organisational commitment. In contrast, affective-professional commitment has a significantly stronger negative relationship with professional-withdrawal behaviours in both joint-breadwinner community-pharmacists and main-breadwinner community-pharmacists compared to the strength of relationships with affective-organisational commitment in those groups.

In both the non-breadwinner and joint-breadwinner community-pharmacists the relationship between affective-organisational commitment and organisational-withdrawal behaviours are significantly stronger than the negative relationship found in main-breadwinner community-pharmacists. It is worth noting that normative-organisational commitment has a far stronger negative relationship with organisational-withdrawal behaviours in the joint (r=-0.50) and non-breadwinner community-pharmacists (r=-0.52) compared to the main-breadwinner community-pharmacists (r=-0.42). Conversely normative-organisational commitment was found to have the widest influence on withdrawal behaviours in main-breadwinner community-pharmacists. Both forms of continuance commitment were consistent in their lack of relationships with the outcome variables in either of the groups. However, high-sacrifice organisational commitment was found to have a weak negative relationship with in-role behaviour in main-breadwinner community-pharmacists.

9.3.5 Correlational analysis of relationships between the commitment and outcome variables by living arrangements

According to Appendix 9.5, the strong negative relationship between affective-professional commitment and professional-withdrawal behaviour was found to be the

only consistent significant relationship between the three groups. Affective-organisational commitment exhibited the strongest negative relationship with organisational-withdrawal behaviours (r=-0.74) in the living with other group. The vast majority of significant relationships were found in the married/living with partner group. Whilst affective-professional commitment was found to have the strongest negative relationship with professional-withdrawal behaviour, both normative commitments and affective-organisational commitment also had moderately sized negative associations with professional-withdrawal behaviour. Moreover, both normative and affective-organisational commitments had similar sized negative relationships with organisational-withdrawal behaviour. In addition, normative-organisational commitment had a moderately weak negative association with sector-withdrawal behaviour, which was not significantly different in size from the associations between this outcome variable and both affective-professional and organisational commitment. It is worth noting that whilst the relationships between affective-professional commitment and organisational commitment and the work-performance behaviours were not particularly large, nevertheless, affective-professional commitment (r=0.30) was found to exhibit a significantly stronger relationship with in-role behaviour than between affective-organisational commitment (r=0.17) and in-role behaviour. Finally, despite there being no relationships between continuance-organisational commitment and the outcome variables, there was an intriguing weak positive relationship between low-alternative organisational commitment (r=0.22) and organisational-withdrawal behaviour.

9.3.6 Correlational analysis by actual hours of work between the commitment and outcome variables

As illustrated in Appendix 9.6, in each of the groups affective-professional commitment was strongly associated negatively with professional-withdrawal behaviours and affective-organisational commitment was strongly associated negatively with organisational-withdrawal behaviours, except for the respondents group 11 to 20 hours, in which there was no significant relationship between affective-organisational commitment and organisational-withdrawal behaviour. Interestingly in those community-pharmacists working longer hours normative-organisational commitment appeared to have moderate to strong negative relationships with organisational-

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withdrawal behaviours in addition to those found in between affective-organisational commitment and organisational-withdrawal behaviours. Moreover, normative-organisational commitment was found to have the greatest number of significant negative relationships with withdrawal behaviours in community-pharmacists working between 21 to 30 hours per-week. Affective-professional commitment and organisational commitment both related negatively with moderate to moderately strong associations with sector-withdrawal behaviour in community-pharmacists working between 21 and 50 hours.

Intriguingly, despite there being no relationship found between continuance-organisational commitment and organisational-withdrawal behaviour, there was a significant moderately sized positive relationship found between low-alternative organisational commitment and organisational-withdrawal behaviour in the age group working between 31 to 40 hours per-week. Finally, affective-professional commitment was found to have positive moderately sized relationships with in-role behaviour in community-pharmacists working between 31 and 50 hours per-week and a positive moderately sized relationship with extra-role behaviour-organisation in community-pharmacists working between 41 to 50 hours per-week.

9.3.7 Correlational analysis by part-time status between the commitment and outcome variables

Affective-professional commitment was found to have a consistently strong negative relationship with professional-withdrawal behaviour in both community-pharmacists, as conveyed in Appendix 9.7. However, normative-professional commitment was found to have a significantly larger relationship with professional-withdrawal behaviour in part-time community-pharmacists (r=-0.38) compared to full-time community-pharmacists (r=-0.22). This was also echoed in the relationship between normative-organisational commitment and professional-withdrawal behaviour in part time (r=-0.22) and full-time community-pharmacists (r=-0.43). Moreover, therefore was also found to be a moderately weak negative relationship between continuance-professional commitment (r=-.28) and professional-withdrawal behaviour in full-time community-pharmacists with no relationship found in part-time community-pharmacists. In both full time and part-time community-pharmacists affective-organisational commitment was found to

have a significantly larger relationship with organisational-withdrawal behaviour than affective-professional commitment. Normative-organisational commitment was also found to have a strong to moderately strong relation with organisational-withdrawal behaviours in both part-time ($r=-0.51$) and full-time community-pharmacists ($r=-0.44$). Added to this normative-professional commitment had a relatively weak negative relationship in part-time community-pharmacists but no significant relationship in full-time community-pharmacists with organisational-withdrawal behaviour. Intriguingly, full-time community-pharmacists exhibited moderately weak positive relationship between low-alternative organisational commitment and both professional and organisational-withdrawal behaviours which were not replicated in part-time community-pharmacists.

Furthermore, affective-professional commitment, affective-organisational commitment and normative-organisational commitment all had similar sized medium negative relationships with sector-withdrawal behaviour, in both groups. However, regarding reduction-in-hours withdrawal behaviour, only affective-organisational commitment ($r=-.27$) was found to have a negative moderately weak relationship in part-time community-pharmacists, whilst both affective-professional commitment ($r=-0.22$) and affective-organisational commitment ($r=-0.20$) exhibited weak negative relationships in full-time community-pharmacists. In terms of work-performance behaviour only affective-professional commitment had a moderately weak positive relationship with in-role behaviour in part-time community-pharmacists ($r=0.32$) with no relationship in full-time community-pharmacists. Interestingly affective-professional commitment ($r=0.26$) had a weak positive relationship with extra-role behaviour-individual in part-time community-pharmacists whilst affective-organisational commitment ($r=0.28$) had a similar relationship with extra-role behaviour individual in full-time community-pharmacists. Only affective-professional commitment ($r=0.30$) had a positive relationship with extra-role behaviour-organisation in full-time community-pharmacists with no relationship between the commitment variables and extra-role behaviour-organisation in part-time community-pharmacists.

9.3.8 Correlational analysis by the number of years qualified in pharmacy between the commitment and outcome variables

Appendix 9.8 showed that Affective-professional commitment had a significantly strong negative relationship with professional-withdrawal behaviour regardless of how long the community-pharmacist had been qualified with the exception of those community-pharmacists whom had been qualified for forty one years and over. This trend was largely mirrored in the relationship between affective-organisational commitment and organisational-withdrawal behaviour, with the added exception of those community-pharmacists whom had been qualified for less than five years. Interestingly, for those community-pharmacists who had been qualified for between ten and 30 years affective-organisational commitment and normative-organisational commitment also had significant moderate to moderately large negative relationships with professional-withdrawal behaviour. Equally for these same community-pharmacists affective-professional commitment and normative-organisational commitment also had significant moderate to moderately large negative relationships with organisational-withdrawal behaviours. Intriguingly, for those community-pharmacists that had been qualified for between 21 to 30 years, low-alternative organisational commitment was associated positively with a moderately weak relationship with organisational-withdrawal behaviours.

For community-pharmacists qualified for between 6 and ten years, only affective-professional commitment (r=-0.51) was significantly related negatively and strongly with sector-withdrawal behaviour; as was the case in the group 31 to 40 years (r=-0.39). However for community-pharmacists who had been qualified for between 11 and 30 years affective-organisational commitment and normative-organisational commitment also revealed relatively strong to medium-sized negative relationships with sector-withdrawal behaviour. Furthermore, only affective-professional commitment was related negatively through a moderate association with reduction-in-hours withdrawal behaviour in those community-pharmacists whom had been qualified for between 11 and 30 years. In terms of work-performance behaviours only affective-professional commitment was found to have a moderate yet positive relationship with in-role behaviour for those community-pharmacists whom had been qualified for between 11 and 30 years. Affective-professional commitment was also found to be positively

related yet to a moderate degree with both extra-role behaviours only in those community-pharmacists whom had been qualified for between 31 to 40 years. No significant relationships had been found between the commitment variables and the outcome variables for those community-pharmacists whom had been qualified for 41 years or longer.

9.3.9 Correlational analysis by the number of years in community-pharmacy between the commitment and outcome variables

As illustrated in Appendix 9.9, strikingly there were no relationships found for community-pharmacists whom had practiced in community-pharmacy for five years or less or whom had practiced in community-pharmacy for greater than 41 years. With the exception of these two groups affective-professional commitment was again found to be consistently related negatively and strongly with professional-withdrawal behaviour, as was affective-organisational commitment with organisational-withdrawal behaviour. These two relationships were mirrored albeit to a weaker extent in the relationships between affective-professional commitment and organisational-withdrawal behaviour and between affective-organisational commitment and professional-withdrawal behaviour, in the two community-pharmacists groups 21 to 30 years and 31 to 40 years in community-pharmacy. In addition the strength of negative relationship between normative-organisational commitment and organisational-withdrawal behaviours appeared to reduce over time, from the community-pharmacist group 6 to 10 years until there is no significant relationship in the community-pharmacists aged 41 years and over. Interestingly the relationship between normative-professional commitment and professional-withdrawal behaviour appears to be significantly strong in the community-pharmacist group between 6 to 10 years (r=-0.44), with moderately weak to medium-sized association in the community-pharmacist groups 21 to 30 (r=-0.27) and 31 to 40 (r=-0.35) respectively. In those community-pharmacists practicing for between 11 and 40 years, only affective-professional commitment was related consistently to sector-withdrawal behaviour with a medium strong negative association. However, for the community-pharmacists group 6 to 10 years, both affective-organisational commitment and normative-organisational commitment also exhibited strong negative relationships with sector-withdrawal behaviour. There is a moderately weak negative relationship between reduction-in-hours withdrawal behaviour and affective commitment in the

community-pharmacist group 21 to 30 years (r=-0.27), only. Interestingly in-role behaviour is only related to affective-professional commitment (r==0.35) in the community-pharmacist group 21 to 30 years. More strikingly extra-role behaviour is strongly related to continuance-professional commitment (r=0.51) in those community-pharmacists whom have practiced in community-pharmacy for between 6 to 10 years only.

9.3.10 Correlational analysis by status as employee between the commitment and outcome variables

Interestingly, Appendix 9.10 revealed that continuance-professional commitment was related negatively (r=-0.28) with professional-withdrawal behaviour in non-employee community-pharmacists but not in employee community-pharmacists. Equally interesting was the finding that both continuance-organisational commitment(r=0.21) and low-alternative organisational commitment (r=0.25) were related to professional-withdrawal behaviour in employee community-pharmacists but not in non-employee community-pharmacists. Interestingly normative-professional commitment had a significantly stronger negative relationship with professional-withdrawal behaviour in non-employee community-pharmacists (r=-0.39) compared to employee community-pharmacists (r=-0.21). Both affective-organisational commitment and normative-organisational commitment were found to have moderately weak to moderately strong relationships with professional-withdrawal behaviour. In relation to organisational-withdrawal behaviour employee community-pharmacists had a significantly stronger relationship between affective-organisational commitment and organisational-withdrawal behaviour (r=-0.57), than did affective-professional commitment with organisational-withdrawal behaviour (r=-0.33). However, in non-employee community-pharmacists, there was no such significant difference and affective-professional commitment (r=-0.41) and affective-organisational commitment (r=-0.49) exhibited similarly relatively strong negative relationships with organisational-withdrawal behaviour. Interesting normative-professional commitment had a weak negative relationship (r=-0.24) with organisational-withdrawal behaviour in non-employee community-pharmacists.

Intriguingly, employee community-pharmacists indicated a moderately weak positive relationships between both continuance-organisational commitment (r=0.25) and low-alternative organisational commitment (r=0.30) with organisational-withdrawal behaviour, which were not found to be replicated in non-employee community-pharmacists. Both community-pharmacist groups had similar relatively strong negative relationships between organisational commitment behaviour. Similar sized negative relationships with sector-withdrawal behaviour were found in both groups with affective-professional commitment, affective-organisational commitment and normative-organisational commitment. Similarly, both affective-professional commitment and affective-organisational commitment had moderate to weak negative relationships with reduction-in-hours withdrawal behaviour in both groups. Interestingly in terms of the work-performance behaviours, affective-professional commitment was related weakly to in-role behaviour (r=0.25) and extra-role behaviour-individual, for employee community-pharmacists, whilst affective-professional commitment was also related moderately to moderately-strong in in-role behaviour (r=0.34) and extra-role behaviour-organisation (r=0.39).

9.3.11 Correlational analysis by status as locum between the commitment and outcome variables

Appendix 9.11 revealed interestingly, that affective-professional commitment, continuance-professional commitment, normative-professional commitment and normative-organisational commitment all had significantly stronger negative relationships with professional-withdrawal behaviour in locum community-pharmacists than non-locum community-pharmacists. Additionally, both continuance-organisational commitment (r=0.19) and low-alternative organisational commitment (r=0.24) also had weak and moderately weak positive relationships respectively with professional-withdrawal behaviour in non-locum community-pharmacists. Affective-professional commitment, affective-organisational commitment and normative-organisational commitment all exhibited similar negative relationships with organisational-withdrawal behaviour in both groups. Intriguingly in non-locum community-pharmacists low-alternative organisational commitment had a moderately weak positive relationship with organisational-withdrawal behaviour. Affective-professional commitment was

significantly higher in the strength of its relationship with sector-withdrawal behaviour in locum community-pharmacists (r=-0.51) when compared to non-locum community-pharmacists (r=-0.34). Affective-organisational commitment and normative-organisational commitment both had similarly sized negative relationships with sector-withdrawal behaviour in both groups. Affective-professional commitment had a moderate sized negative relationship with reduction-in-hours withdrawal behaviour in both groups. Strikingly, affective-organisational commitment seems to have had no bearing on reduction-in-hours withdrawal behaviour in non-locum community-pharmacists. However, it did have a medium-sized negative relationship in locum community-pharmacists (r=-0.31). Interestingly continuance-organisational commitment (r=.18) was positively related albeit weakly to reduction-in-hours withdrawal behaviour in non-locum community-pharmacists. In terms of work-performance behaviour in-role behaviour was found to be related moderately to affective-professional commitment in both groups. However, affective-professional behaviour was only related to extra-role behaviour-individual in non-locum community-pharmacists only (r=0.24). This said affective-professional commitment was found to have a significantly stronger relationship with extra-role behaviour-organisation in locum community-pharmacists (r=0.36) compared to non-locum community-pharmacists (r=0.21).

9.3.12 Correlational analysis by pharmacy size between the commitment and outcome variables

From Appendix 9.12 it was revealed that aside from in the small-chain and more than one organisation community-pharmacists, affective-organisational commitment has consistently had a significantly stronger relationship with organisational-withdrawal behaviour than affective-professional commitment had in each of the remaining groups in this variable. Interestingly normative-organisational commitment has a significant moderate to large sized negative relationship with organisational-withdrawal behaviours in each of the groups. Even more interesting is the fact that in large-multiple community-pharmacists, low-alternative organisational commitment (r=0.25) had a moderately weak positive relationship with organisational-withdrawal behaviour. Affective-professional commitment has had a strong negative relationship with professional-withdrawal behaviours across groups. Normative-professional commitment

was found to have a significantly stronger negative relationship with professional-withdrawal behaviour in medium-sized organisation community-pharmacists (r=-0.37) than was found in large-multiple community-pharmacists (r=-0.21). This relationship was not found to be significant in any of the other groups. Affective-professional commitment was found to be consistently related to sector-withdrawal behaviour in each of the groups, with the exception of community-pharmacists working in more than one organisation. Normative-organisational commitment had a moderate strong negative relationship in most of the respondent groups including independents, small-chain and large-multiples, with the exception of medium-sized organisation community-pharmacists. Interestingly reduction-in-hours withdrawal behaviours were only found to be negatively associated weakly with affective-organisational commitment only in large-multiple community-pharmacists. In terms of work-performance behaviour, affective-professional commitment was found to be significantly more related to in-role behaviour in medium-sized community-pharmacists (r=0.43) than was found to be the case in large-multiple community-pharmacists (0.22). There were no other examples of this relationship being found in any of the other groups. Finally there was only a weak relationship found between affective-professional commitment and extra-role behaviour individual in large-multiple community-pharmacists (r=0.24).

9.4   Factors predicting the outcome variables, individually.

9.4.1   Linear regression modelling for professional-withdrawal behaviour

From Table 9.10 it is clear that all commitment variables significantly predicted professional-withdrawal behaviour, with affective-professional commitment (B=-0.5809) explaining almost 21.4% of the variance of professional-withdrawal behaviour. However, when all seven of the commitment variables were entered into the same model, only affective-professional commitment (B=-0.4830) and continuance-professional commitment (B=-0.1827) remained as significant predictors of professional-withdrawal behaviour. Moreover when all seven commitment variables were additionally adjusted by the background variables gender, age, ethnicity, living arrangements, breadwinner status, time qualified, time in community-pharmacy, job-role, pharmacy size and having a job in another sector, three of the commitment variables remained significant predictors of professional-withdrawal behaviours. Of the

three, affective-professional commitment was found to only experience a small reduction in its unstandardised regression coefficient from the unadjusted model (B=-0.5809) to the fully adjusted model (B=-0.5098). This predicted that if an individual's affective-professional commitment increased by one unit, professional-withdrawal behaviour would be expected to decrease by 0.51 units, and if all other variables remained constant. Continuance-professional commitment (B=-0.1519) also was found to predict professional-withdrawal behaviour with every one unit increase in continuance-professional commitment resulting in a decrease of 0.15 units of professional-withdrawal behaviour if all other variables remained constant.

Table 9. 10 A series of linear regression models of professional-withdrawal behaviour, unadjusted, partially adjusted by commitment variables and fully adjusted by background variables.

Models of DV: PWB	Professional Commitment			Organisational Commitment			Adjusted R-Squared
	Affective	Continuance	Normative	Affective	HSOC/LAOC #	Normative	
	B	B	B	B	B	B	
Unadjusted	-0.5809*	-	-	-	-	-	0.2138
Unadjusted	-	-0.2381*	-	-	-	-	0.0332
Unadjusted	-	-	-0.3164*	-	-	-	0.0819
Unadjusted	-	-	-	-0.2689*	-	-	0.0723
Unadjusted	-	-	-	-	0.134*/0.194*	-	0.0018
Unadjusted	-	-	-	-	-	-0.2822*	0.0729
Adjusted for other commitments	-0.4830*	-0.1827*	-0.0157	-0.0476	*0.065/0.241*	-0.1142	0.2586
Adjusted by commitment and other background variables	-0.510*	-0.1519*	0.0129	-0.0085	0.027/0.057	-0.1918*	0.2689
Adjusted by commitment and other background variables (Standardised β)	-0.401*	-0.1168*	0.0100	-0.0100	0.025/0.056	-0.1878*	0. 2689

*P≤0.05; #high-sacrifice organisational commitment(Hsoc) and low-alternative organisational commitment(Laoc).

Finally, normative-organisational commitment (B=-0.1918) was also found to predict professional-withdrawal behaviour when all other variables remained constant, with every one unit increase in normative-organisational commitment resulting in a 0.20 unit decrease in professional-withdrawal behaviour. Out of the background variables (Appendix 9.13) only the job-role being a manager was a significant predictor of

professional-withdrawal behaviour (B=-0.5031), which implied that being a manager reduced by 0.5 units, professional-withdrawal behaviour. The beta coefficients suggest that affective-professional commitment (β=-0.4013) has the greatest negative effect on professional-withdrawal behaviour with over three time the predictive magnitude of continuance-professional commitment (β=-0.1168) and twice the predictive magnitude of normative-organisational commitment (β=-0.1878) on professional-withdrawal behaviour. In addition, normative-organisational commitment has 1.6 times greater negative effect on professional-withdrawal behaviour than continuance-professional commitment. The latter also had a smaller effect than being a manager (β=-0.1517) in this model on professional-withdrawal behaviour. This fully adjusted model itself accounted for approximately 27.2% of the variance in professional-withdrawal behaviour.

9.4.2   Linear regression modelling for organisational-withdrawal behaviour

Table 9.11, revealed that from the unadjusted models, aside from continuance-professional commitment and low-alternative organisational commitment all the commitment variables were found to predict organisational-withdrawal behaviours, with affective-organisational commitment model accounting for over 25% of the variance of organisational-withdrawal behaviour. However, when all seven commitment variables were adjusted for each other in the model the magnitude of the effect of each of the commitment variables dropped and normative-professional commitment (B=0.0664) also became non-significant, along with continuance-professional commitment (B=0.0005). Interestingly when all seven commitment variables were fully adjusted by the background variables gender, age, ethnicity, living arrangements, breadwinner status, time qualified, time in community-pharmacy, job-role, pharmacy size, and having a job in another sector, as well, only three commitment variables remained significant.

Interestingly all three commitments saw their unstandardized coefficients increase from the partially adjusted model to the fully adjusted model, although they were considerably lower than their unadjusted unstandardized coefficients. Affective-organisational commitment (B=-0.4128) was found to predict organisational-withdrawal behaviour with every one unit increase resulting in a 0.41 unit decrease in organisational

commitment. Normative-organisational commitment (B=-0.2124) was also found to predict organisational-withdrawal behaviour with every one unit increase representing a 0.21 unit decrease in organisational-withdrawal behaviour. Affective-professional commitment (B=-0.2013) also predicted organisational-withdrawal behaviour with every one unit increase resulting in a 0.2 unit decrease in organisational commitment.

Table 9. 11 A series of linear regression models of organisational-withdrawal behaviour, unadjusted, partially adjusted by commitment variables and fully adjusted by background variables

	Professional Commitment			Organisational Commitment			
Models of DV OWB	Affective	Continuance	Normative	Affective	HSOC/LAOC #	Normative	Adjusted R-Squared
	B	B	B	B	B	B	β
Unadjusted	-0.4260*	-	-	-	-	-	0.0946
Unadjusted	-	-0.0062	-	-	-	-	-0.0015
Unadjusted	-	-	-0.2311*	-	-	-	0.0349
Unadjusted	-	-	-	-0.5571*	-	-	0.2596
Unadjusted	-	-	-	-	-.0196*/0.328	-	0.0553
Unadjusted	-	-	-	-	-	-0.5062*	0.1959
Adjusted for other commitments	-0.1851*	0.0005	0.0664	-0.3960*	0.022/0.082	-0.1630*	0.2841
Adjusted by commitment and other background variables	-0.2013*	0.0704	0.0932*	-0.4128*	0.016/0.065	-0.2124*	0.2684
Adjusted by commitment and other background variables (Standardised β)	-0.1436*	0.0491	0.0763	-0.3704*	0.014/0.058	-0.1852*	0.2684

*P≤0.05; # high-sacrifice organisational commitment(hsoc) and low-alternative organisational commitment(laoc).

Three background categories of the variable job-role were also found to be significant predictors of organisational-withdrawal behaviour (Appendix 9.14), namely being a manager a relief respondent and a second community-pharmacist each of which predicted a decrease in organisational-withdrawal behaviour. Interestingly, substituting high-sacrifice organisational commitment and low-alternative organisational commitment in place of continuance-organisational commitment had little impact upon the predictive value of the other commitment variables or the fully-adjusted model as a whole. When comparing the standardised-regressions of each of the predictors in the fully-adjusted model, affective-organisational commitment (β=--0.3704) had the largest

negative effect on organisational-withdrawal behaviour, which was almost twice the size of that of normative-organisational commitment (β =-0.1852) and was over two and a half times the magnitude of affective-professional commitment (β =-0.1436). Of the background variables being a manager, a relief pharmacist and a second pharmacist were all similar in effect size and marginally larger than affective-professional commitment. Finally, the fully adjusted model accounted for just over 27% of the variance of organisational-withdrawal behaviour.

9.4.3 Linear regression modelling for sector-withdrawal behaviour

Table 9. 12 A series of linear regression models of sector-withdrawal behaviour, unadjusted, partially adjusted by commitment variables and fully adjusted by background variables

Models of DV OWB	Professional Commitment			Organisational Commitment			Adjusted R-Squared
	Affective	Continuance	Normative	Affective	HSOC/LAOC #	Normative	
	B	β	β	β	β	β	β
Unadjusted	-0.4133*	-	-	-	-	-	0.0980
Unadjusted	-	-0.1526*	-	-	-	-	0.0113
Unadjusted	-	-	-0.1752*	-	-	-	0.0216
Unadjusted	-	-	-	-0.3350*	-	-	0.1021
Unadjusted	-	-	-	-	-0.122*/0.205*	-	0.0227
Unadjusted	-	-	-	-	-	-0.3197*	0.0848
Adjusted for all commitment	-0.2867*	-0.1496*	0.0871	-0.1053	0.021/0.078	-0.1918*	0.1516
Adjusted by commitment and other background variables	-0.3124*	-0.0774	0.1111	-0.0373	0.049/0.065	-0.3147*	0.2127
Adjusted by commitment and other background variables (Standardised β) #	-0.2328*	-0.0563	0.0949	-0.0349	0.043/0.060	-0.2863*	0.2127

*P≤0.05; #high-sacrifice organisational commitment(hsoc) and low-alternative organisational commitment(laoc)

Table 9.12 illustrated that in there unadjusted regression-models all of the commitment variables were significant predictors of sector-withdrawal behaviour, with affective-organisational commitment accounting for just over 10% of the variance of sector-withdrawal behaviour. When all the commitments were entered into the model this, normative-professional commitment (B=0.0871), affective-organisational commitment (B=-0.1053), high-sacrifice organisational commitment (B=0.021) and low-alternative

organisational commitment (B=0.078) all failed to predict sector-withdrawal behaviour when the other commitments remained constant. Following this the commitment variables were added to, in the model, by the background variables gender, age, ethnicity, living arrangements, breadwinner status, time qualified, time in community-pharmacy, job-role, pharmacy size, and having a job in another sector, to assess a fully adjusted model. From this model two commitment variables remained significant predictors.

Affective-professional commitment was found to significantly predict sector-withdrawal behaviour in the fully adjusted model with every one unit increase in affective-professional commitment (B=-0.3124) indicating a decrease of 0.31 units of sector-withdrawal behaviour. Normative-organisational commitment (B=-0.3147) was also found to predict sector-withdrawal behaviour with an increase in one unit leading to a decrease in sector-withdrawal behaviour of a unit of 0.31. In addition a number of background variables were also found to have been significant predictors of sector-withdrawal behaviour (see Appendix 9.15). For instance being a respondent aged of 31-40 years old, in community-pharmacy for between 11 to 20 years, 21 to 30 years, and 31 to 40 years and being a second community-pharmacist all predicted a decrease in sector-withdrawal behaviour. Interestingly, already working in more than one sector and having been qualified in pharmacy for between 21and 30 years actually predicted an increase in sector-withdrawal behaviour.

In terms of comparing the significant predictors in the fully-adjusted model normative-organisational commitment (β=-0.2863) had a 20% large effect-size than affective-professional commitment (β=0.2328). Interestingly, out of the background variables time spent in community-pharmacy were at least 20% stronger predictors of a decrease in sector-withdrawal behaviour than either of the commitment variables, and were three times the magnitude of being a second community-pharmacist, one and a half time the size of being aged between 31 and 40 years old and 20% stronger in magnitude, in the opposite direction, to being qualified for 21 to 20 years. Finally, the fully-adjusted model accounted for just below 21.3% of the variance of sector-withdrawal behaviour.

9.4.4 Linear regression modelling for reduction-in-hours withdrawal behaviour

As can be seen in Table 9.13 in the unadjusted-models except for continuance-professional commitment, high-sacrifice organisational commitment and low-alternative organisational commitment, all the other commitments were found to be significant predictors of reduction-in-hours withdrawal behaviour, with the affective-professional commitment and the affective-organisational commitment models accounting for just over 5% of the variance of reduction-in-hours withdrawal behaviour. When the commitment variables were entered into the model together, continuance-professional commitment (B=-0.0152), normative-professional commitment (B=0.066) and normative-organisational commitment (B-0.054) did not significantly predict reduction-in-hours withdrawal behaviour. In the fully-adjusted model which included the commitment variables and the background variables gender, age, ethnicity, living arrangements, breadwinner status, time qualified, time in community-pharmacy, job-role, pharmacy size, and having a job in another sector, only four commitment variables remained significant predictors.

Table 9. 13 A series of linear regression models of reduction-in-hours withdrawal behaviour, unadjusted, partially adjusted by commitment variables and fully adjusted by background variables

| Models of DV RHWB | Professional Commitment | | | Organisational Commitment | | | Adjusted R-Squared |
| | Affective | Continuance | Normative | Affective | HSOC/LAOC [#] | Normative | |
	B	B	B	B	B	B	
Unadjusted	-0.358*	-	-	-	-	-	0.0529
Unadjusted	-	-0.0117	-	-	-	-	-0.0014
Unadjusted	-	-	-0.1183*	-	-	-	0.0062
Unadjusted	-	-	-	-0.282*	-	-	0.0527
Unadjusted	-	-	-	-	0.078/0.036	-	0.0034
Unadjusted	-	-	-	-	-	-0.2231*	0.0293
Adjusted for all commitment	-0.266*	-0.0152	0.066	-0.234*	0.202*/-0.125*	-0.054	0.0845
Adjusted by commitment and other background variables	-0.276*	0.042	0.117	-0.298*	0.236*/-0.143*	-0.060	0.1264
Adjusted by commitment and other background variables (Standardised β)	-0.177*	0.0263	0.086	-0.241*	0.180*/-0.115*	-0.047	0.1264

*P≤0.05; [#] high-sacrifice organisational commitment(hsoc) and low-alternative organisational commitment(laoc).

Affective-professional commitment was found to predict a decrease of 0.28 units of reduction-in-hours withdrawal behaviour for every one unit increase in affective-professional commitment. Similarly, affective-organisational commitment was found to predict a decrease in reduction-in-hours withdrawal behaviour by 0.30 units for every one unit increase of affective-organisational commitment. High-sacrifice organisational commitment predicted a 0.24 unit increase, whereas low-alternative organisational commitment predicted a 0.13 unit decrease in reduction-in-hours withdrawal behaviour. In addition the background variables of job-roles of second, relief and other community-pharmacists each predicted a decrease (Appendix 9.16). However, having older dependents predicted an increase in reduction-in-hours withdrawal behaviour.

When comparing the effect of the variables in the fully-adjusted model to each other affective-organisational commitment was found to have the largest effect ($\beta = -0.241$), followed by affective-professional commitment, being a second community-pharmacist, other community-pharmacist, relief community-pharmacist, normative-professional commitment and having older dependents. This fully-adjusted model accounted for just below 12.6% of the variance of reduction-in-hours withdrawal behaviour. When comparing the significant predictors within this fully-adjusted model, high-sacrifice organisational commitment was found to have a similar magnitude effect as affective-professional commitment, whilst low-alternative organisational commitment was found to have half the predictive value of affective-organisational commitment. The fully-adjusted model accounted for 12.6% of reduction-in-hours withdrawal behaviour.

9.4.5 Linear regression modelling for in-role behaviour

According to Table 9.14 except for continuance-professional commitment, high-sacrifice and low-alternative organisational commitment, each of the commitment variables, in their unadjusted models, predicted in-role behaviour, with affective-professional commitment accounting for only 6.1% of the variance of in-role behaviour. When all commitment variables were entered in the model together, only affective-professional commitment and affective-organisational commitment remained significant predictors. In the fully adjusted model which included the commitment variables and the background variables gender, age, ethnicity, living arrangements, breadwinner status,

time qualified, time in community-pharmacy, job-role, pharmacy size, and having a job in another sector, only two commitment variables remained significant predictors.

Affective-professional commitment was found to predict an increase of 0.11 units of in-role behaviour for every one unit increase in affective-professional commitment. Similarly, Affective-organisational commitment was found to predict an increase of 0.07 units of in-role behaviour for every one unit increase in affective-organisational commitment. Only gender was found to be a significant predictor out of the background variables with female community-pharmacists predicting an increase of 0.18 units of in-role behaviour compared to males (Appendix 9.17). When the predictors were compared to each other, affective-professional commitment was found to have a 25% large effect than affective-organisational commitment, and a one and a half times larger effect than being a female community-pharmacist. This said the fully-adjusted model only accounted for 7.5% of all the variance associated with in-role behaviour.

Table 9. 14 A series of linear regression models of in-role behaviour, unadjusted, partially adjusted by commitment variables and fully adjusted by background variables

Models of DV IRB	Professional Commitment			Organisational Commitment			Adjusted R-Squared
	Affective	Continuance	Normative	Affective	HSOC/LAOC [#]	Normative	
	B	B	B	B	B	B	B
Unadjusted	0.1391*	-	-	-	-	-	0.0611
Unadjusted	-	0.0210	-	-	-	-	0.0004
Unadjusted	-	-	0.0431*	-	-	-	0.0063
Unadjusted	-	-	-	0.0650*	-	-	0.0205
Unadjusted	-	-	-	-	-0.015/-0.031	-	0.0054
Unadjusted	-	-	-	-	-	0.0353*	0.0044
Adjusted for all commitment	0.1175*	0.0236	0.011	0.070*	-0.032/0.004	-0.053	0.0671
Adjusted by commitment and other background variables	0.1131*	0.0520	-0.004	0.0730*	-0.031/0.009	-0.045	0.0745
Adjusted by commitment and other background variables (Standardised β)	0.205*	0.0918	-0.008	0.166*	-0.067/0.022	-0.10	0.0745

*P≤0.05; [#]high-sacrifice organisational commitment(hsoc) and low-alternative organisational commitment(laoc).

9.4.6 Linear regression modelling for extra-role behaviour towards the individual

As can be seen in Table 9.15, in the adjusted models only affective-professional commitment, continuance-professional commitment and normative-organisational commitment predict extra-role behaviour-individual, with affective-professional commitment only predicting 3.8% of the variance associated with the outcome. When all the commitments were assessed together only, normative-organisational commitment also became non-significant in this model. In the fully-adjusted model which included the commitment variables and the background variables gender, age, ethnicity, living arrangements, breadwinner status, time qualified, time in community-pharmacy, job-role, pharmacy size, and having a job in another sector, the same two commitment variables remained significant predictors..

Table 9. 15 A series of linear regression models of extra-role behaviour towards the individual, unadjusted, partially adjusted by commitment variables and fully adjusted by background variables

Models of DV ERBI	Professional Commitment			Organisational Commitment			Adjusted R-Squared
	Affective	Continuance	Normative	Affective	HSOC/LAOC [#]	Normative	
	B	B	B	B	B	B	B
Unadjusted	0.1047*	-	-	-	-		0.0381
Unadjusted	-	0.0693*	-	-	-	-	0.0147
Unadjusted	-	-	0.0306	-	-	-	0.0028
Unadjusted	-	-	-	0.0690	-	-	0.0252
Unadjusted	-	-	-	-	-0.005/-0.006	-	0.0026
Unadjusted	-	-	-	-	-	0.0428*	0.0080
Adjusted for all commitment	0.0849*	0.0558*	-0.0059	0.0794*	-0.030/0.0243	-0.040	0.0576
Adjusted by commitment and other background variables	0.0724*	0.0676*	-0.0047	0.0581	-0.010/0.018	-0.024	0.0666
Adjusted by commitment and other background variables (Standardised β)	0.1378*	0.1261*	-0.010	0.138	-0.022/0.043	-0.056	0.0666

*P≤0.05; [#]high-sacrifice organisational commitment(hsoc) and low-alternative organisational commitment(laoc).

Affective-professional commitment was found to predict an increase of 0.07 units of extra-role behaviour-individual for every one unit increase in affective-professional commitment. Similarly, continuance-professional commitment was found to predict an increase of 0.07 units of extra-role behaviour-individual for every one unit increase in continuance-professional commitment. In terms of the background variables (Appendix 9.18) whilst being in community-pharmacy from between 21 to 30 years or 31 to 40 years or being a female community-pharmacists all predicted an increase in extra-role behaviour-individual, being qualified for between 31 to 40 years predicted a decrease in extra-role behaviour-individual. When comparing the significant predictors being qualified for between 31 to 40 years had over three times the negative effect size of affective-professional commitment, continuance commitment and gender on extra-role behaviour-individual. Being in community-pharmacy for between 21 to 30 or 31 to 40 years also had twice the effect size of both commitment variables and gender on extra-role behaviour-individual. Finally, this fully-adjusted model only accounted for 6.7% of all the variance associated with extra-role behaviour-individual

9.4.7 Linear regression modelling for extra-role behaviour towards the organisational

As displayed in Table 9.16 affective-professional commitment, continuance-professional commitment and affective-organisational commitment predicted extra-role behaviour-organisation in unadjusted models. The model in which only the seven commitment variables are entered together also revealed normative-organisational commitment to be a significant predictor of extra-role behaviour-organisation as well as those commitment variables which were predictors in the unadjusted models. In the fully-adjusted model which included the commitment variables and the background variables gender, age, ethnicity, living arrangements, breadwinner status, time qualified, time in community-pharmacy, job-role, pharmacy size, and having a job in another sector, the same four commitment variables remained significant predictors. Affective-professional commitment was found to predict a 0.11 unit increase in extra-role behaviour-organisation for every one unit increase of affective-professional commitment. Similar, one unit increases in continuance-professional commitment, affective-organisational commitment and normative-organisational commitment

predicted increases of 0.07, 0.06 and 0.06 units respectively of extra-role behaviour-organisation.

Intriguingly, for every one unit increase in low-alternative organisational commitment an increase of 0.04 units of extra-role behaviour towards the organisation was predicted. When comparing the predictors in this fully-adjusted model, affective-professional commitment had more than twice the effect size of low-alternative organisational commitment on extra-role behaviour-organisation. In addition affective-organisational commitment's effect-size was 1.6 time the magnitude of low-alternative organisational commitment, whereas continuance-professional commitment was almost 1.4 times the magnitude of low-alternative organisational commitment. Unlike in the previous fully-adjusted models there were no background variables which were found to be significant predictors of extra-role behaviour-organisation (Appendix 9.19). This fully-adjusted model only accounted for 10% of the variance associated with extra-role behaviour-organisation.

Table 9. 16 A series of linear regression models of extra-role behaviour towards the organisation, unadjusted, partially adjusted by commitment variables and fully adjusted by background variables

Models of DV ERBO	Professional Commitment			Organisational Commitment			Adjusted R-Squared
	Affective	Continuance	Normative	Affective	HSOC/LAOC [#]	Normative	
	B	B	B	B	B	B	
Unadjusted	0.0912*	-	-	-	-	-	0.0405
Unadjusted	-	0.0736*	-	-	-	-	0.0239
Unadjusted	-	-	0.0085	-	-	-	-0.0010
Unadjusted	-	-	-	0.0394*	-	-	0.0110
Unadjusted	-	-	-	-	-0.028/0.017	-	-0.0012
Unadjusted	-	-	-	-	-	0.01399	-0.0001
Adjusted for all commitment	0.0923*	0.0756*	-0.0293	0.0673*	-0.033/0.027	-0.049*	0.0878
Adjusted by commitment and other background variables	0.1145*	0.0719*	-0.0334	0.0654*	-0.031/0.041*	-0.052	0.1003
Adjusted by commitment and other background variables (standardised β)	0.2566*	0.158*	-0.086	0.1850*	-0.083/0.114*	-0.142	0.1003

*P≤0.05; [#]high-sacrifice organisational commitment(hsoc) and low-alternative organisational commitment(laoc).

9.5   Summary

Affective-professional commitment was found to be the strongest form of commitment and much stronger than affective-organisational commitment as was continuance-professional commitment, in the respondents sample as a whole. Normative-professional commitment however was found to be significantly lower than even affective-organisational commitment and continuance-organisational commitment. Normative-organisational commitment was found to be the lowest rated commitment variable, with no difference between levels of affective, continuance, high-sacrifice and low-alternative organisational commitments in the respondent sample. Therefore as was expected affective-professional commitment was found to have the greatest predictive value overall from the different fully adjusted regression models presented above, as well as the correlational analysis prior to that. It was most predictive negatively in relation to professional-withdrawal behaviour followed by sector-withdrawal behaviour and organisational-withdrawal behaviour and was significantly higher in females compared to males. It was the only commitment variable to be a significant predictor of each of the outcome variables. By contrast continuance-professional commitment (2nd highest rated/prevalent commitment variable and not significantly lower than affective-professional commitment in terms of mean average level in the respondent sample) was only found to be at its most productive in being negatively predictive in professional-withdrawal behaviour, with meagre predictive value in both extra-role behaviours. Interestingly, it was found that on average respondents working longer hours per week had stronger levels of continuance-organisational commitment compared to those working on average under twenty hours per week. More interestingly continuance-professional commitment was found to be significantly higher in respondents with young dependents that those without any.

Affective-organisational commitment was found to be the second most predictive commitment variable as it was a significant predictor of four of the seven outcome variables, although this excluded sector-withdrawal and professional-withdrawal behaviour, as well as extra-role behaviour towards the individual. It was most predictive negatively of organisational-withdrawal behaviour followed by reduction-in-

hours withdrawal behaviour. For instance, owners were found to have the highest level of affective-organisational commitment and normative-organisational commitment, whilst Owners were less likely to leave their organisation than managers. Higher levels of affective-organisational commitment and normative-organisational commitment were also found in independents and small-chains compared to medium and large-multiples. This difference was also found between medium and large-multiples.

Normative-organisational commitment, whilst with the lowest mean average in the respondent sample, was influential particularly with the withdrawal behaviours excluding reduction-in-hours withdrawal behaviour. Its greatest influence was on sector-withdrawal behaviour, where it had a stronger negative influence than affective-organisational commitment. As expected those working less than 11 hours per week exhibited less normative-organisational commitment than those working over 40 hours per week. On the other hand normative-professional commitment which was found to be relatively small in the respondent sample compared to the other commitment variables, actually predicted positively the reduction-in-hours withdrawal behaviours. Interestingly, the levels of normative-professional commitment were higher for those working over 40 hours compared to those working less than 10 hours per week. When assessed and found to be significant predictors in the fully-adjusted regression-models, high-sacrifice was found to be negatively predictive whilst low-alternatives were found to positively predict the outcomes. It was found that for high-sacrifice organisational commitment those working less than 40 hours generally exhibited less high-sacrifice than those working over41 hours per week, Likewise full-time community-pharmacists exhibited higher levels of high-sacrifice organisational commitment and reduction-in-hours withdrawal compared to part-time. Equally, main breadwinners were found to have had higher levels of high-sacrifice organisational commitment compared to minor breadwinners, whilst owners experienced significantly higher levels of high-sacrifice organisational commitment compared to managers, relief and locums. In contrast, higher levels of low-alternative organisational commitment were found in large-multiples.

The next chapter will take the univariate analysis completed in this chapter forward to a full multivariate analysis, using structural equation modelling as detailed in the previous chapter. It will use parcelled variants of the latent variables psychometrically assessed in

the previous chapter to fit the hypothesised structural models to the data of the respondents sample and proposed respondent subsamples.

10 Chapter 10 Stage 2 Results: Testing the relationships of the research model

10.1 Introduction

The previous chapter provided a detailed examination of the descriptive analysis, univariate correlational and predictive relationships, of the different commitment variables to the outcome variables. This chapter presents the findings of the full structural-models which assess parts of the hypothesised relationships as detailed in section 4.5. The a priori model is used to investigate how the exogenous variables of professional commitment consisting of affective-professional commitment, continuance-professional commitment, normative-professional commitment and organisational commitment, comprising of affective-organisational commitment, high-sacrifice organisational commitment, low-alternative organisational commitment and normative-organisational commitment interact with the endogenous variables of work-performance behaviour consisting of in-role behaviour, extra-role behaviour-individual and extra-role behaviour-organisation. The exogenous variables are also assessed for their effects, if any, on endogenous withdrawal behaviour, such as, professional-withdrawal behaviour, organisational-withdrawal behaviour, sector-withdrawal behaviour and reduction-in-hours withdrawal behaviour.

As detailed in section 7.10, the two-step method of SEM is used in the analysis of the community-pharmacist dataset[347,349,363,411,422]. This consists of assessing the measurement model, or the CFA portion of the model, in order to ascertain the extent to which the latent variables are measured, satisfactorily[349,411,422,433]. Once, this has been achieved then the structural portion of the model is able to be assessed with relative confidence[411,422]. Therefore, the measurement models are examined for professional commitment, followed by the organisational commitment, work-performance behaviours and withdrawal behaviours for each of the populations of interest. This is done for the full respondent sample as well as the individual pharmacist subpopulations of interest within the full community-pharmacist sample. These subgroups include locum pharmacists, non-locum pharmacists, independent/small-chain pharmacists and large-multiples pharmacist subpopulations. Following this the structural-models for the community-pharmacists and the subgroups are inspected. Finally, the last section of this

chapter, reports on how the individual structural models of the different populations, compare with each other in terms of their idiosyncrasies.

10.2 Measurement model

Measurement models were assessed for each of the variables in the structural model.

10.2.1 CFA of professional commitment
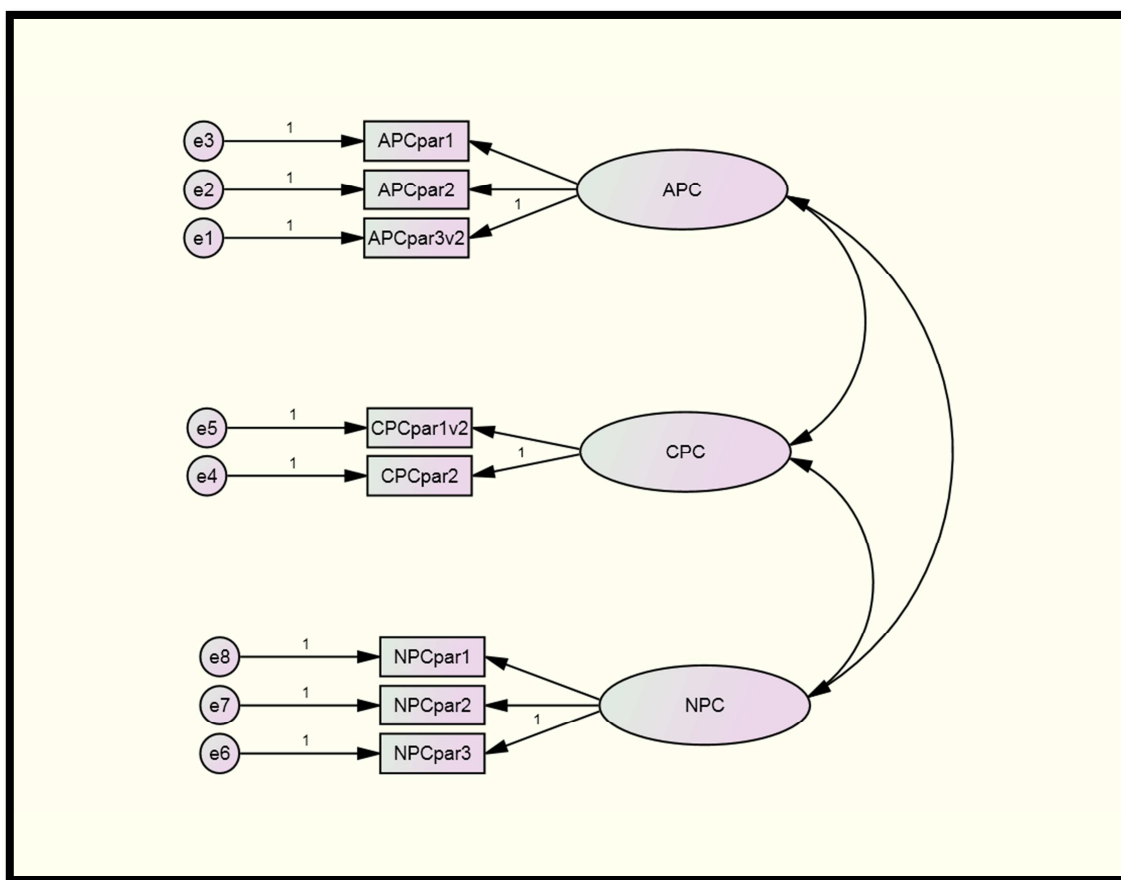
Figure 10. 1 CFA of a three factor model of professional commitment with parcelled indicators

parcels were created for the three latent variables with affective-professional Commitment now consisting of 3 parcelled indicators: APCpar1, which aggregated items PC4A2 and PC7A3; APCpar2, which aggregated items PC10A4 and PC13A5; and APCpar3v2, which consisted of the item PC16A6. Continuance-professional commitment now consisted of the 2 parcels: CPCpar1v2, which aggregated items PC5C2 and PC17C6; and CPCpar2 which aggregated items PC8C3 and PC11C4.

Finally, Normative-professional commitment also consisted of 3 parcels: NPCpar1, which aggregated the items, PC3N1 and PC15N5; NPCpar2, which aggregated PC6N2 and PC12N4; whilst NPCpar3 aggregated the items PC9N3 and PC18N6.

Consistent with Chapter eight a three-factor model of professional commitment was assessed. An examination of the selected fit statistics in Table 10.1 illustrated relatively strong evidence for a well-fitting model of Professional Commitment, with the comparative-fit index (CFI) reaching an average of 0.979 (median) and the Tucker-Lewis index (TLI) with an average value of 0.965, for all community-pharmacist [426, 430]. This was also largely mirrored in the subgroups. In addition, the average root mean squared error of approximation (RMSEA) for each of the samples reached acceptable levels of fit (median), although the averaged P-Close value was only able to be regarded as excellently fitting for the locum sample and the large-multiple sample[426,430], whilst the other samples could be viewed as approaching this level of fit. However, the averaged χ^2 and associated with p-values, together with the Bollen-Stine bootstrapped p-values and the x^2/df indicated that the professional commitment model still did not represent perfect absolute fit for either of the samples, although again the locum community-pharmacists and the large-multiple pharmacists did appear to be approaching such levels of fit[363,411,451,452]. It was also noted that the x^2 associated p-values and Bollen-Stine bootstrapped p-values were well known to be prone to type 2 errors in larger samples and non-normal datasets[363,411,421,426,430,452,453] (see Chapter 7).

Table 10. 1 Selected Goodness-of-fit statistics for professional commitment (parcelled) model in the full respondent sample, locum sample, non-locum sample, independent/small-chain sample and large-multiples sample using median values (naive pooling)

Model	$X^2(df)$	X^2/df	BS P-Value	SRMR	TLI	CFI	RMSEA
Full respondents sample	78.589 (17)***	4.446	.002	.0348	.965	.979	.070*
Locum sample	30.603 (17)*	1.800	.048	.0418	.974	.984	.060++
Non-locum sample	60.453 (17)***	3.556	.002	.0363	.963	.977	.073*
Independent/small-chain sample	49.704 (17)***	2.997	.002	.0530	.944	.966	.095**
Large-multiples sample	20.817 (17)***	2.401	.016	.0413	.969	.981	.065++

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1

The standardised residual covariance and the modification indices (see Appendix 12) suggested that there were no sufficiently large (i.e. > ±2.58) standardised residuals that

could have been omitted to improve the model specifications[411, 452]. In addition, the factor score weights for each sample also showed a clear loading of the parcelled indicators on their respective latent variables (see Appendix 12). This was also mirrored in strong standardised-regression loadings (see Appendix 12) between the parcelled indicators and their respective latent variables, using robust bootstrapped standard-errors. Therefore, in all the parcelled models of professional commitment in each of the samples were viewed as sufficiently well-fitting to be used in the structural-model.

10.2.2 CFA of Organisational Commitment

Following the CFAs reported in Chapter eight, parcels were created for the four latent variables for which affective-organisational commitment consisted of 3 parcelled indicators: AOCpar1, which aggregated items OC1A1 and OC4A2; AOCpar2, which aggregated items OC7A3 and OC10A4; and AOCpar3, which aggregated the items OC13A5 and OC16A6. Similarly, normative-organisational commitment contained 3 parcelled indicators: NOCpar1, which consisted of an aggregation of items OC6N2 and OC15N5; NOCpar2, which aggregated the items OC9N3 and OC12N4; and NOCpar3, which aggregated the items OC3N1 and OC18N6. However, in relation to high-sacrifice continuance-organisational commitment and low-alternatives continuance-organisational commitment, both of which had two item level indicators loading on them, and having taken into consideration the problems of conducting CFAs or other structural equation models with less than two indicators per latent variable [362, 422], it was judged inappropriate to create aggregated parcelled indicators for them.

The aforementioned four-factor model of organisational commitment was assessed, as shown in Figure. 9.2. The selected fit statistics illustrated that most fit statistics achieved very good fit with the data in each of the samples detailed in Table 9.2[426,430]. The CFI reached excellent levels of fit for each of the samples whilst the TLI reached acceptable levels of fit for non-locum, independent/small-chain, and large-multiple respondents and excellent fits for the full respondent sample and the locum respondents (see Table 10.2)[426, 430]. In addition, the SRMR also reached very good levels of fit within the locum respondents, whilst the other samples exhibited various acceptable levels of fit[411,430,453]. The RMSEA also ranged from a fairly good fit in locum respondents to

marginally acceptable fit in large-multiple respondents[411,430,453], with the P-Close values for the locum and large-multiple respondents being indicative of more accurate fit, more so than the P-Close values of the other samples. However, whilst the averaged χ^2 and the Bollen-stine bootstrapped p-values indicated less than optimum fit in the samples, the χ^2/df values for locum respondents and independent/small-chain respondents were a more promising fit with the data[363,408,411,421].
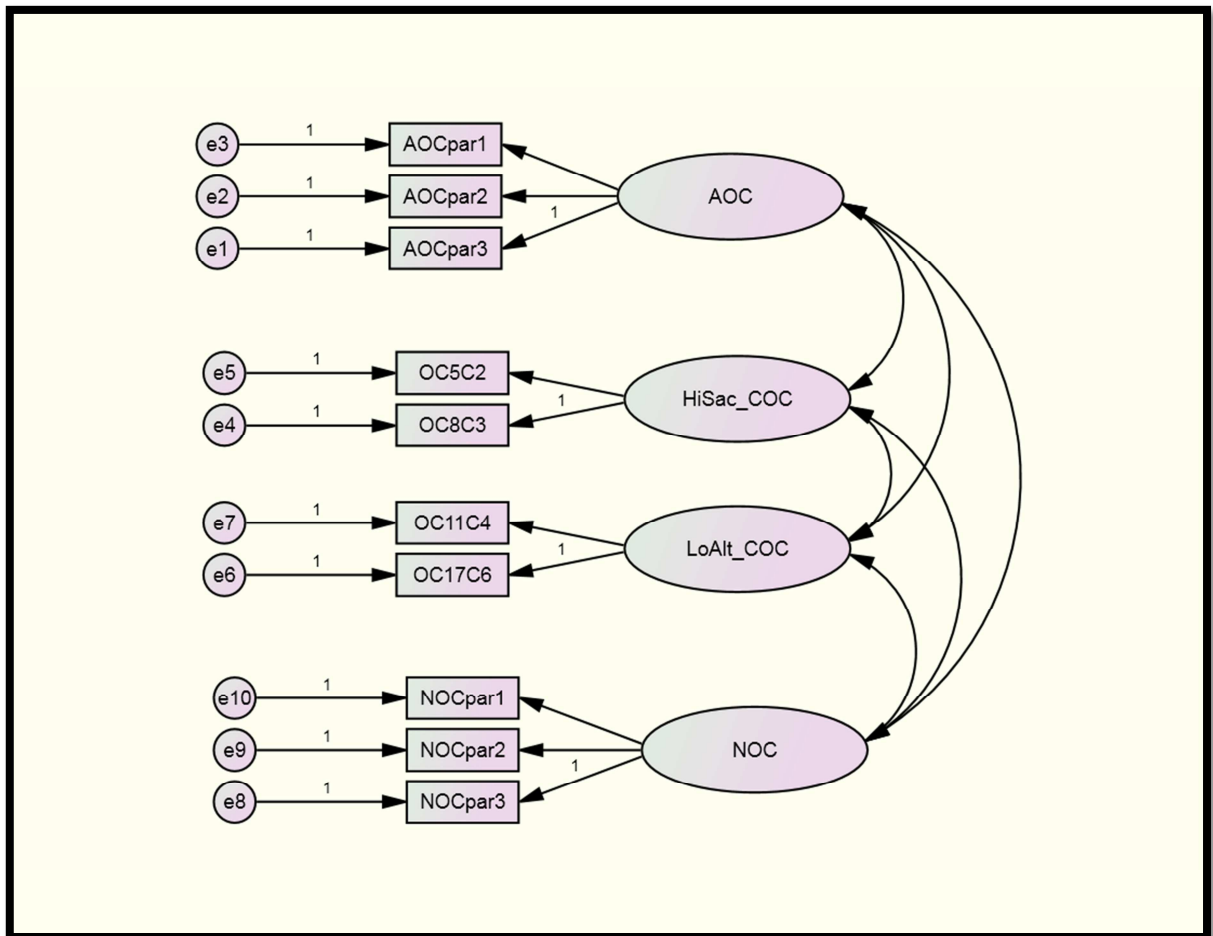
Figure 10. 2 CFA of a four factor model of organisational commitment with mixed item level and parcelled indicators

A quick look at the standardised-residual covariance, the favourable factor score weights, the relatively strong standardised-regression loadings and very small modification modification-indices (see Appendix 12) suggested that there were no amendments that could be made to improve model-specification[408, 411]. Therefore, these parcelled measurement models of organisational commitment were used in the assessments of the structural-models.

Table 10. 2 Selected Goodness-of-fit statistics for organisational commitment (parcelled) model in the full respondent sample, locum sample, non-locum sample, independent/small-chain sample and large-multiples sample using median values (naive pooling)

Model	$X^2(df)$	X^2/df	BS P-Value	SRMR	TLI	CFI	RMSEA
Full respondents sample	166.44 (29)***	5.739	.002	.0502	.950	.968	.082**
Locum sample	56.345 (29)***	1.943	.018	.0441	.966	.978	.065++
Non-locum sample	131.39 (29)***	4.531	.002	.0542	.945	.965	.086***
Independent/small-chain sample	74.599 (29)***	2.572	.004	.0697	.949	.967	.086**
Large-multiples sample	105.27 (29)***	3.630	.002	.0500	.928	.954	.090++

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1

10.2.3 CFA of Withdrawal Behaviours

Withdrawal behaviours in this context had been operationalized as four latent variables, with each consisting of three item level indicators. therefore, similarly to high-sacrifice organisational commitment and low-alternatives organisational commitment (see section 10.2.2), the four withdrawal behaviours professional-withdrawal behaviours, organisational-withdrawal behaviours, sector-withdrawal behaviours and reduction in hour withdrawal Behaviours were not parcelled for the purposes of the structural-model [347, 441]. Therefore, the final model of Withdrawal Behaviours reported in chapter eight was used.

Table 10. 3 Selected Goodness-of-fit statistics for withdrawal behaviours (parcelled) model in the full respondent sample, locum sample, non-locum sample, independent/small-chain sample and large-multiples sample using median values (naive pooling)

Model	$X^2(df)$	X^2/df	BS P-Value	SRMR	TLI	CFI	RMSEA
Full respondents sample	315.82 (41)***	7.751	.002	.0542	.903	.940	.098***
Locum sample	143.92 (41)***	3.510	.002	.0743	.885	.927	.106***
Non-locum sample	251.45 (41)***	6.133	.002	.0552	.894	.934	.103***
Independent/small-chain sample	114.39 (41)***	2.773	.002	.0637	.905	.941	.091***
Large-multiples sample	164.99 (41)***	4.024	.002	.0490	.909	.943	.096***

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1

As illustrated by Table 10.3, the fit of the models to the different samples were quite mixed. The TLI exhibited broadly acceptable levels of fit to the data in the full

respondent sample, independent/small-chain respondents and large-multiple respondents, with less fit in locum respondents and non-locum respondents[430]. However, the CFI provided evidence of acceptable[430], although not excellent fit[426] in these samples. Moreover the SRMR provided evidence of fit with the data which ranged from excellent fit in large-multiple respondents to modest fit in locum respondents[408,426]. This said the averaged RMSEA and P-Close values indicated only modest fit for the different samples[408,411]. As expected the averaged χ^2 associated p-values, also provided a less favourable view of the model fits for the different samples as did the x^2/df values, except for the independent/small-chain sample. A quick look at the small standardised residual covariance, small modification indices, favourable factor score weights and strong standardised regression loadings suggested the models had acceptable levels of fit with the different sample data (see Appendix 12).
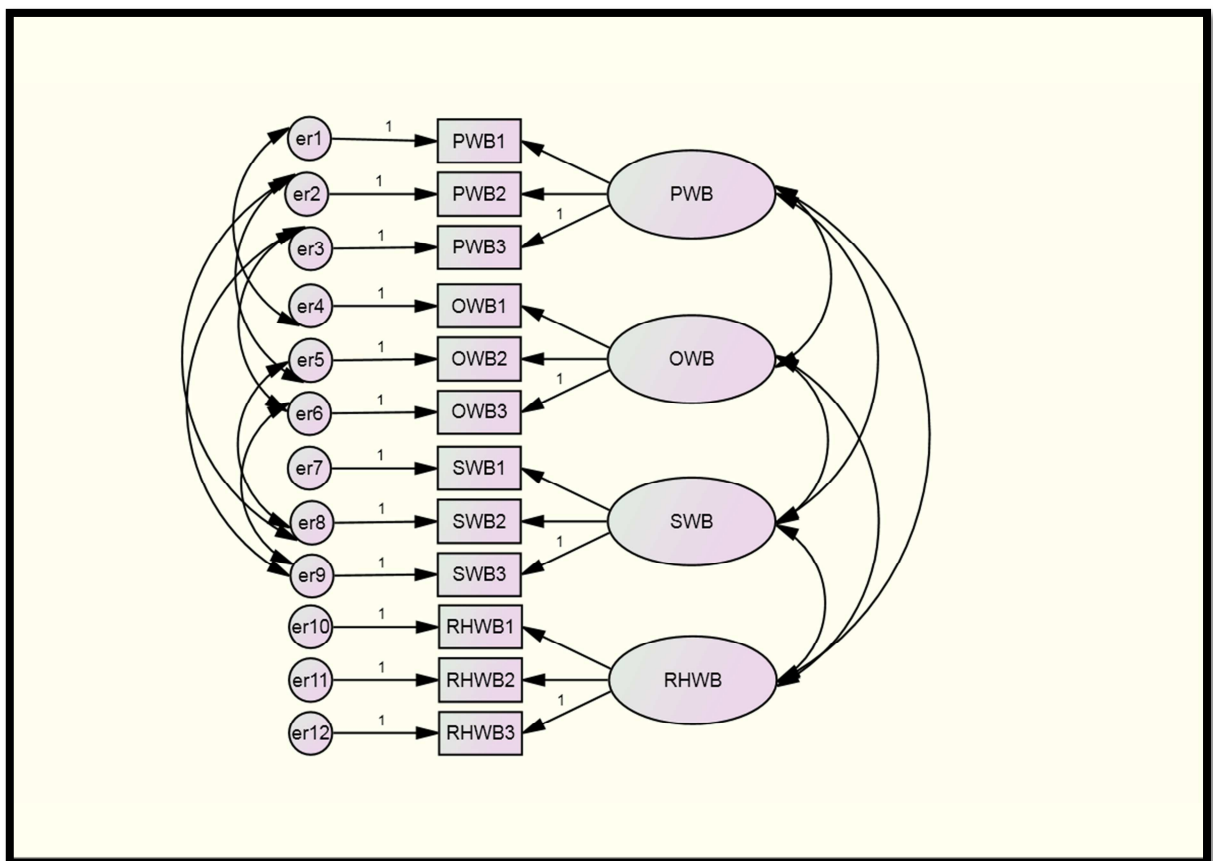
Figure 10. 3 CFA of a 4 factor model of withdrawal behaviour with item level indicators (model 8)

10.2.4 CFA of Work-performance Behaviours

Two parcels were created for In-Role Behaviour, IRBpar1v2, which aggregated the items IRBone1 and IRBfour4; and the parcel IRBpar3, which aggregated the items IRBtwo2 and IRBthree3. Extra-role behaviour-individual contained 3 parcels: ERBIpar1v2, which aggregated the items ERBIeight1, and ERBIfourteen7; parcel ERBIpar2, which aggregated the items ERBInine2 and ERBIthirteen6; and parcel ERBIpar3, which aggregated ERBIeleven4 and ERBItwelve5. Finally, extra-role behaviour-organisation also contained 3 parcels: ERBOpar1v2, which aggregated the items ERBOseventeen3 and ERBOtwenty6; parcel ERBOpar2, which aggregated the items ERBOfifteen1 and ERBOeighteen4; and parcel ERBOpar3v2, which aggregated items ERBOsixteen2, and ERBOtwentyone7 (see Fig. 10.4).

Table 10.4 revealed that in contrast with the withdrawal behaviour model, the work-performance behaviour model had an excellent fit to the data of this population, indeed with excellent averaged CFI and TLI values evidenced for each of the different samples, all far above the cut-off points required for excellent fits[411,426,430,453]. In addition to this the SRMR was also found to be indicative of excellent fit in each of the different samples (see Table 10.4)[411,429]. The latter was replicated by the RMSEA and the P-Close value for each of the samples (see Table 9.4)[411,429], but not in the averaged χ^2 as expected for the full respondent sample, non-locum respondents and large-multiple respondents; but did exhibit evidence for absolute fit for locum respondents and independent/small-chain respondents[411,429]. This was mirrored in the Bollen-Stine bootstrapped p-values for the different samples (see Table 10.4).

Table 10. 4 Selected Goodness-of-fit statistics for work-performance (parcelled) model in the full respondent sample, locum sample, non-locum sample, independent/small-chain sample and large-multiples sample using median values (naive pooling)

Model	$X^2(df)$	X^2/df	BS P-Value	SRMR	TLI	CFI	RMSEA
Full respondents sample	42.168 (17)***	2.466	.010	.0261	.988	.993	.046++
Locum sample	25.989 (17)++	1.287	.212	.0377	.992	.995	.036++
Non-locum sample	36.941 (17)**	2.173	.042	.0275	.986	.992	..049++
Independent/small-chain sample	18.370 (17)++	1.081	.611	.0245	.998	.999	.019++
Large-multiples sample	34.092 (17)**	2.005	.042	.0416	.978	.986	.056++

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1
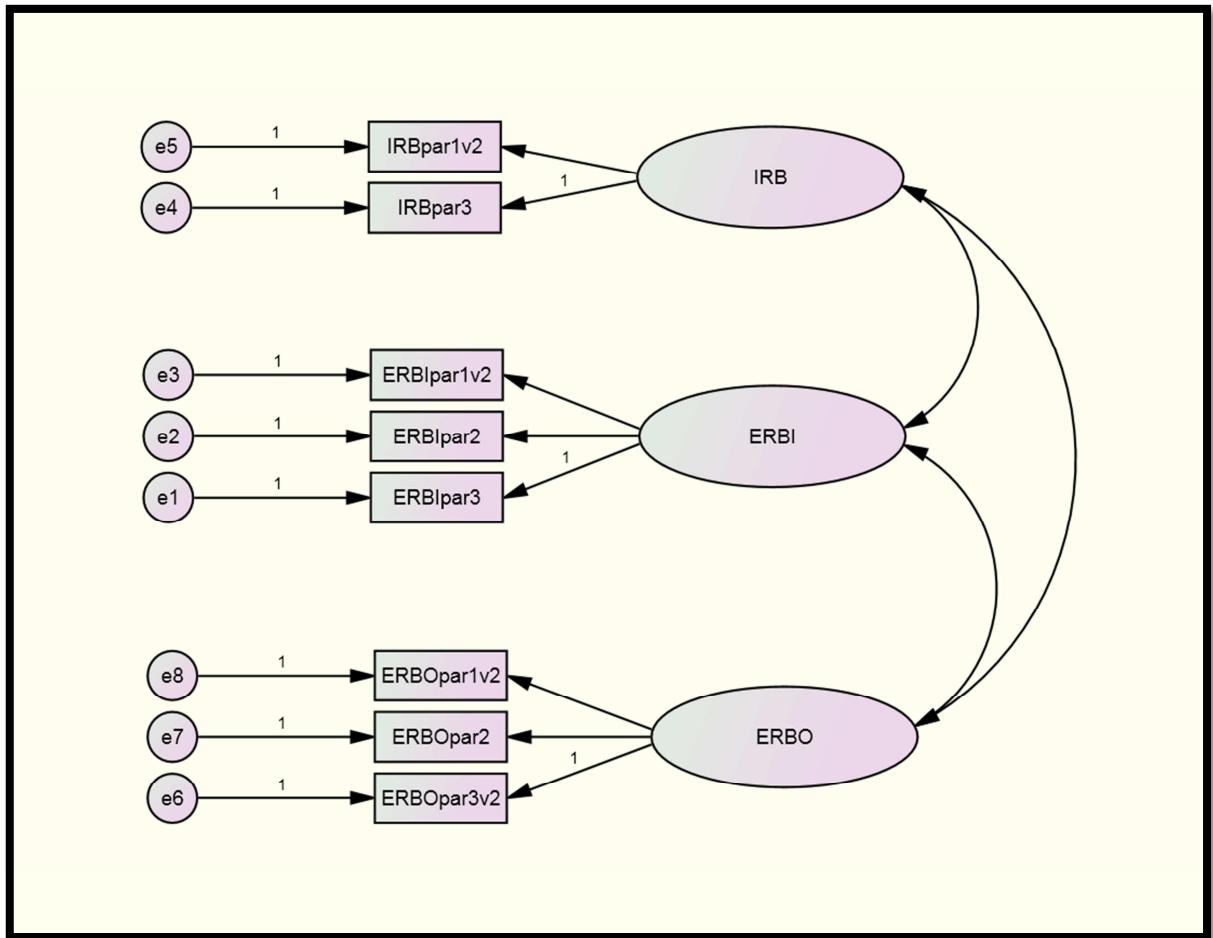
Figure 10. 4 CFA of a three factor model of work-performance behaviours with parcelled indicators

The model appeared to be free from the need of further modification as was evidenced by the lack of feasible theoretically appropriate modification indices, as well as a lack of large standardised-residuals (see Appendix 12)[408,411]. Moreover, all of the regression (both standardised and unstandardised), covariance, variance and correlation coefficients were all significant at p<.05, in each of the samples used (see Appendix 12).

10.3 Structural Model

10.3.1 Full Respondents Sample

Fig 10.5 displayed the full structural model of the hypothesised relationships discussed in chapter four (see also Appendix 10.1). Table 10.5 reported that the averaged $x^2(593)=1534.841$ (median), p=.000, suggested a lack of absolute fit with the data,

which was also echoed by the Bollen-Stine Bootstrapped p-value with an averaged value of .002 (median)[410]. However, the other selected fit statistics provided an alternative view. The x^2/df provided an acceptable value of an averaged 2.588 (median), whilst the averaged SRMR value of .0478 (median) was also quite acceptable as a very good fit[411,426,430,453]. Of the baseline comparisons of TLI and CFI, they both achieved an averaged value of .932 (median) and a .942 (median) respectively, which whilst almost reaching what was considered to be excellent fit[426], did reach an acceptable level[430,454,455]. Finally the RMSEA and the P-Close also supported the case for acceptable model fit with an averaged value of .047 (median) for the RMSEA and an averaged value of .920 (median) for P-Close. Added to this, an inspection of the modification indices (Appendix 9.41) and standardised residual covariances (Appendix 9.42) did not provide additional feasible modification which would be consistent with the theory; rather they would be considered to be modifications of the a prior model[361].
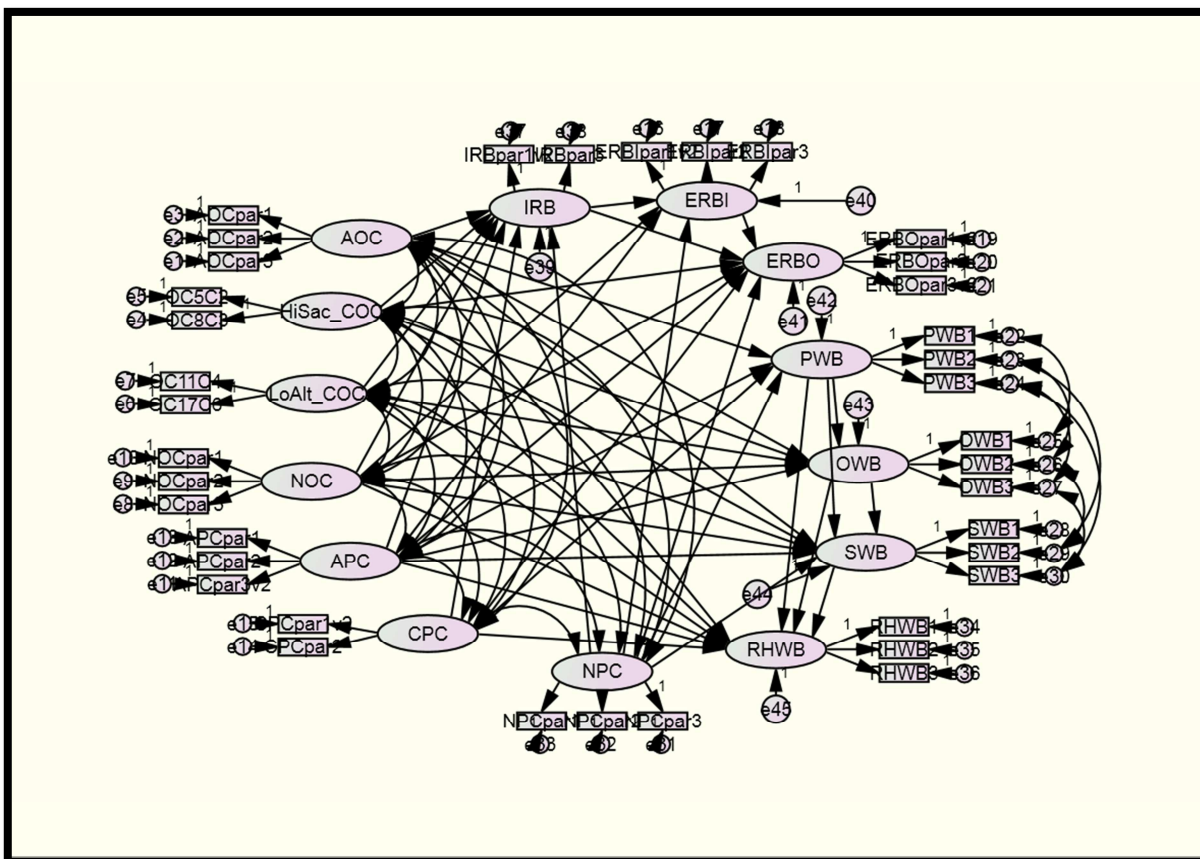
Figure 10. 5 fully specified hypothesised structural model for the full respondent sample.

Appendices 10.2 and 10.3 provided the Squared Multiple Correlations the Standardised Regression Coefficients(β), Standardised Total Coefficients(β) and standardised indirect

coefficients(β) of the commitment latent variables used in the multivariate model illustrated in Figs. 10.6 and 10.7. Affective-professional commitment was found to have the greatest influence on the outcome variables. However, it only had significant direct predictive relationships negatively with professional-withdrawal behaviour (β=-.540) and positively extra-role behaviour towards-individual (β=.128). The negative influence of affective-professional commitment on organisational-withdrawal behaviour (β=-.181) was fully mediated by professional-withdrawal behaviour. Likewise, affective-professional commitment's negative influences on sector-withdrawal behaviour (β=-.326) and reduction-in-hours withdrawal behaviour (β=-0.187) were also fully mediated by professional-withdrawal behaviour and also organisational-withdrawal behaviour. Affective-professional commitment was found to have no significant relationship with in-role behaviour. However, affective-professional commitment was found to have an indirect positive influence on extra-role behaviour-organisation (β=0.177) which was fully mediated by extra-role behaviour-individual.

Table 10. 5 Selected goodness-of-fit statistics for the full hypothesised structural model in the full respondent sample (naive pooling)

Fit Indices	χ^2 (df)	B-S P value	x^2/df	SRMR	TLI	CFI	RMSEA
Pooled estimates	1534.841 (593)***	.002	2.588	.0478	.932	.942	.047[++]

*** $p < 0.001$, ** $p<0.01$, * $p<0.05$, + $p\geq0.05$, ++ $p\geq0.1$

Continuance-professional commitment was found to have a significant direct negative influence on professional-withdrawal behaviour (β=-0.150). However, continuance-professional commitment only had an indirect relationship with organisational-withdrawal behaviour (β=-.077) and sector-withdrawal behaviour (β=-.116) which were both mediated fully by professional-withdrawal behaviour. Continuance-professional commitment had no significant relationship with reduction-in-hours withdrawal behaviour. Continuance-professional commitment had a direct positive influence on extra-role behaviour-organisation (β=0.221), but no significant relationships with in-role behaviour or extra-role behaviour-individual.

Affective-organisational commitment was found to have a direct negative relationship with organisational-withdrawal behaviour (β=-.586). Affective-organisational

commitment was found to have a direct relationship with reduction-in-hours withdrawal behaviour (β=-.385) and an indirect negative relationship partially mediated by organisational-withdrawal behaviour (β=-.137). Affective-organisational commitment was found to have no direct or indirect relationship with either of the work-performance behaviours, professional-withdrawal behaviour or sector-withdrawal behaviour. Low-alternative organisational commitment was found to have a direct negative relationship with reduction-in-hours withdrawal behaviour (β=-.256). However, low-alternative organisational commitment did not have any significant direct or indirect relationships with any other withdrawal behaviour or any work-performance behaviours. Likewise, High-sacrifice organisational commitment normative-organisational commitment and normative-professional commitment also were found to have no significant direct or indirect relationships with either of the work-performance or withdrawal behaviours in the structural model.
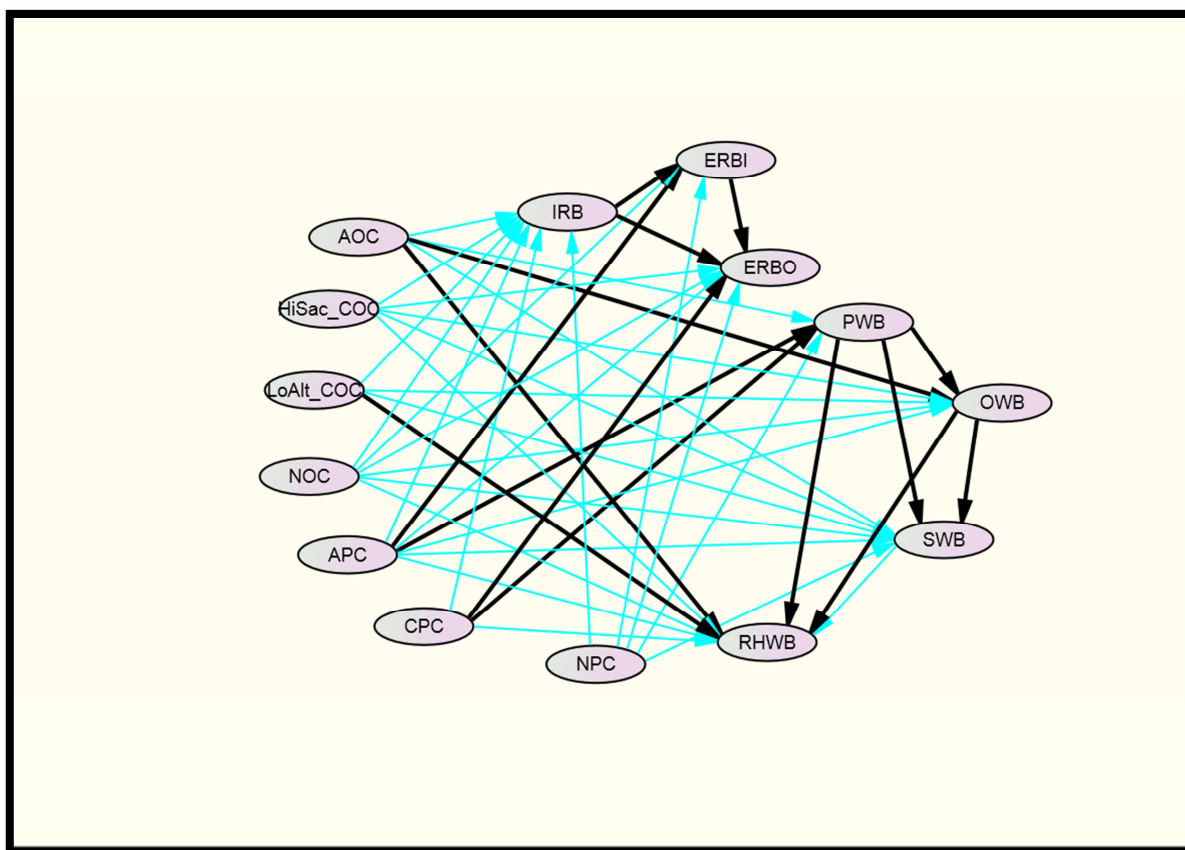
Figure 10. 6 Illustration of statistically significant standardised regression (thick dark arrows) coefficients (at p <.05) for the full hypothesised structural model of the full respondent sample.

Interestingly, In-Role Behaviour was found to have a strong direct influence on Extra-Role Behaviour orientated-individual (β=.427) and a direct (β=.272) and indirect (β=.242) relationship mediated by extra-role behaviour-individual on Extra-Role Behaviour-organisation. Extra-role behaviour-individual was found to have a significant positive relationship with extra-role behaviour-organisation (β=.565). Professional-withdrawal behaviour was found to have a direct influence on organisational-withdrawal behaviour (β=.515), as well as both direct (β=.654) and indirect (β=.121) influences on sector-withdrawal behaviour, partially mediated by organisational-withdrawal behaviour. Similarly, professional-withdrawal also had both a direct (β=.470) and indirect (β=.093) influence on reduction-in-hours withdrawal behaviour which was partially mediated by organisational-withdrawal behaviour. Therefore, organisational-withdrawal behaviour also had direct influences on sector-withdrawal behaviours (β=.235) and reduction-in-hours withdrawal behaviours (β=.171).
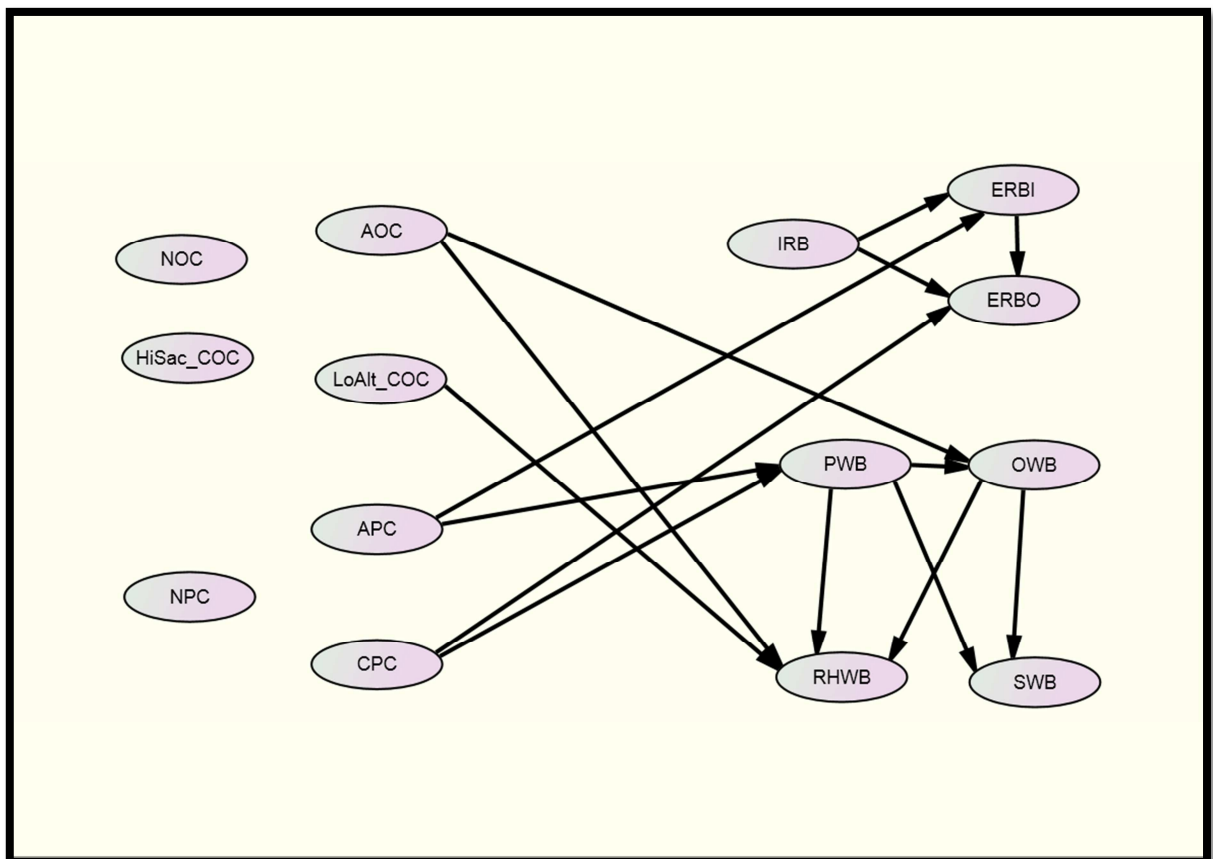
**Figure 10. 7 Illustration of statistically significant standardised regression coefficients only (at p <.05) for the full hypothesised structural model of the full respondent sample.**

According to Appendices 10.2 and 10.3 in terms of Professional-withdrawal behaviour, 40.4% of its variance was accounted for by its predictors in the hypothesised model.

The largest of these predictors was found to be affective-professional commitment which had a 3.6 times stronger negative influence than continuance-professional commitment. A greater proportion, 53.4% of the variance of Organisational-withdrawal behaviour was accounted for by the model. Interestingly, affective-organisational commitment, the strongest predictor of organisational-withdrawal behaviour, was found to have similar magnitude albeit negative influence on organisational-withdrawal behaviour when compared to professional-withdrawal behaviours. Both had almost five times the strength of influence when compared to affective-professional commitment and 6 times the strength of influence of continuance-professional commitment. For sector-withdrawal behaviour 63.6% of its variance was accounted for by the model. Of its predictors, affective-professional commitment was found to have almost three times the strength of influence of continuance-professional commitment. However, professional-withdrawal behaviour had twice the predictive influence compared to affective-professional commitment and over three times the predictive influence of organisational-withdrawal behaviour. However, only 35.7% of the variance of reduction-in-hours Withdrawal Behaviour was accounted for by the predictors within this model, with affective-organisational commitment and professional-withdrawal behaviour having similar sized influences, which were around three times more influential than affective-professional commitment and organisational-withdrawal behaviours. Interestingly, low-alternative organisational commitment was found to be two times more influential than affective-professional commitment.

Only 6.8% of the variance of in-ole behaviour was accounted for by this model. However, 21.9% of variance of Extra-Role Behaviour-Individual was predicted by this model. However, in-role behaviour had more than twice the influence of affective-professional commitment. Finally, 58% of the variance of Extra-Role Behaviour-Organisation was explained by the model. Here both the other work-performance behaviours were three times more influential than affective-professional commitment.

10.3.2 Locum Sample

There appeared to be some evidence of model fit within the locum sample data according to Table 10.6. The averaged $x^2_{(593)}$=925.295, p=.000, suggested a lack of absolute fit with the data, and this was also echoed by the Bollen-Stine Bootstrapped p

value which averaged a value of .004[410]. However, the other selected fit statistics provide an alternative view. The x^2/df test provided an acceptable value of an averaged 1.560, whilst the averaged SRMR value of .0606 was also a very good fit[411,426,430]. Of the baseline comparisons of TLI and CFI, they achieved an averaged value of .923 and a .935 respectively, which approached excellent fit[426], but reached an acceptable fit[430, 454, 455]. Finally the RMSEA and the PCLOSE also supported the case for acceptable model fit with an averaged value of .050 for the RMSEA and an averaged value of .492 for PClose. Added to this, an inspection of the modification indices and standardised residual covariances did not provide additional feasible modification[361] (see Appendix 12).

Table 10. 6 Selected goodness-of-fit statistics for the full hypothesised structural model in the Locum sample (naive pooling)

Fit Indices	χ^2 (df)	BS P value	x^2/df	SRMR	TLI	CFI	RMSEA	CAIC
Pooled values	925.295 (593)***	.004	1.560	.0606	.923	.935	.05++	1874.878

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1

From an inspection of Figure 10.8 Appendices 10.4 and 10.5 Affective-professional commitment was found to have a direct negative relationship with professional-withdrawal behaviour (β=-.487). Normative-professional commitment also had a direct relationship with professional-withdrawal behaviour (β=-.215), which was less than half as influential as affective-professional commitment. Continuance-professional commitment, also had a direct negative relationship with professional-withdrawal behaviour (β =-.233) which was again around half the size of affective-professional commitment. In addition, continuance-professional commitment also had a direct influence on extra-role behaviour-organisation. However, this direct effect became non-significant as the total effect adjusted for the covariances of the other two work-performance behaviours. None of the three professional commitment variables had any direct or indirect effects on any of the other withdrawal behaviours. Affective-professional commitment and normative-professional commitment had no direct or indirect relationships with either of the work-performance behaviours in this model. None of the organisational commitment variables had any significant direct or indirect influence on either of the job-performance behaviours or withdrawal behaviours in this model.

Professional-withdrawal behaviour was found to have a direct positive influence on organisational-withdrawal behaviour (β=.540). Interestingly, In-Role Behaviour was found to have a strong direct influence on Extra-Role Behaviour orientated-individual (β=.387) and a direct (β=.199) and indirect (β=.240) relationship mediated by extra-role behaviour-individual on Extra-Role Behaviour-organisation. Extra-role behaviour-individual was found to have a direct significant positive relationship with extra-role behaviour-organisation (β=.621). Finally, from appendix 10.4, 55.5% of professional-withdrawal behaviour's variance was accounted for by its predictors and 50.5% organisational-withdrawal behaviour's variance was accounted for by its predictors in this model. In terms of the work-performance behaviours, only 12.5% of variance in-role behaviour was accounted for by the predictors within this model, with 21.9% of variance of extra-role behaviour-individual and 58.6% of the variance of extra-role behaviour-organisation being explained by this model.
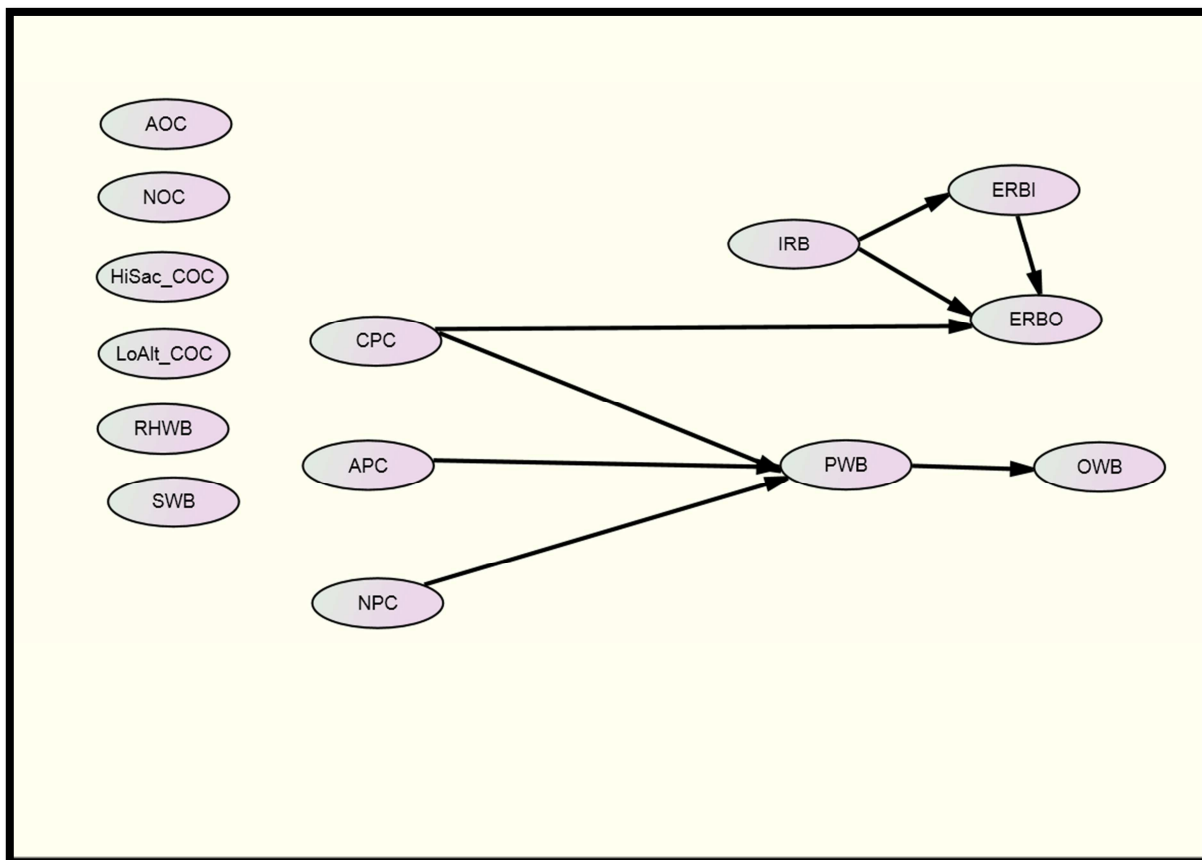
Figure 10. 8 Illustration of statistically significant standardised regression coefficients only (at p <.05) for the full hypothesised structural model of the locum sample.

10.3.3 Non-Locum Sample

In the Non Locum sample, according to Table 10.7 the averaged $x^2_{(593)}$=1288.139 (median), p=.000 and Bollen-Stine Bootstrapped p≤0.002 [410] suggested a lack of absolute fit with the data. However, the other selected fit statistics provided an alternative view. The x^2/df test provided an acceptable value of an averaged 2.172, whilst the averaged SRMR value of .0521 was a very good fit [411,426,430,453]. The baseline comparisons of TLI and CFI, achieved averaged value of .927 and .938 respectively, which approached excellent fit[426], but reached acceptable fit[430,454,455]. This was replicated by the indications of good fit from the RMSEA averaged value of 5.049 and the PCLOSE value of 0.589 (median) for PClose. Furthermore, an inspection of the modification indices and standardised residual covariances did not provide additional feasible modification[361] (see Appendix 12).

From an inspection of Figure 10.9 Appendices 10.6 and 10.7 affective-professional commitment was found to have a direct negative influence on professional-withdrawal behaviour (β=-.557), and an indirect negative influence on organisational-withdrawal behaviour (β=-.203) which was fully mediated by professional-withdrawal behaviour. Affective-professional commitment also had an indirect negative influence on sector-withdrawal behaviours (β =-.285) which was fully mediated by professional-withdrawal behaviour and organisational-withdrawal behaviour. Affective-professional commitment had neither a direct or indirect influence on reduction-in-hours withdrawal behaviours. Neither normative-professional commitment nor continuance-professional commitment had any direct or indirect effect on either of the withdrawal behaviours. Out of organisational commitment, only affective-organisational commitment had any direct or indirect effect on the withdrawal behaviours, with a direct negative effect on organisational-withdrawal behaviour (β=-.537), which was 2.5 times more influential than the effect of affective-professional commitment on organisational-withdrawal behaviour.

Affective-professional commitment had a positive direct effect on extra-role behaviour-individual (β=.224), which was half of the size of the positive effect of in-role behaviour (β=.445) on extra-role behaviour-individual. In-role behaviour also had a direct effect

(β=.324) and indirect effect (β=.234), partially mediated by extra-role behaviour-individual, on extra-role behaviour-organisation. Interestingly both normative and continuance-professional commitments had significant direct positive effects on extra-role behaviour, which became insignificant in terms of total effect when covariances were adjusted for, in this model. Neither of organisational commitment variables had any direct nor indirect effect upon the work-performance behaviours in this model.

Table 10. 7 Selected goodness-of-fit statistics for the full hypothesised structural model in the Non-Locum sample (naive pooling)

Fit Indices	χ^2 (df)	BS P value	χ^2/df	SRMR	TLI	CFI	RMSEA	CAIC
Pooled values	1288.14 (593)***	.002	2.172	.0521	.927	.938	.049[++]	2350.782

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1
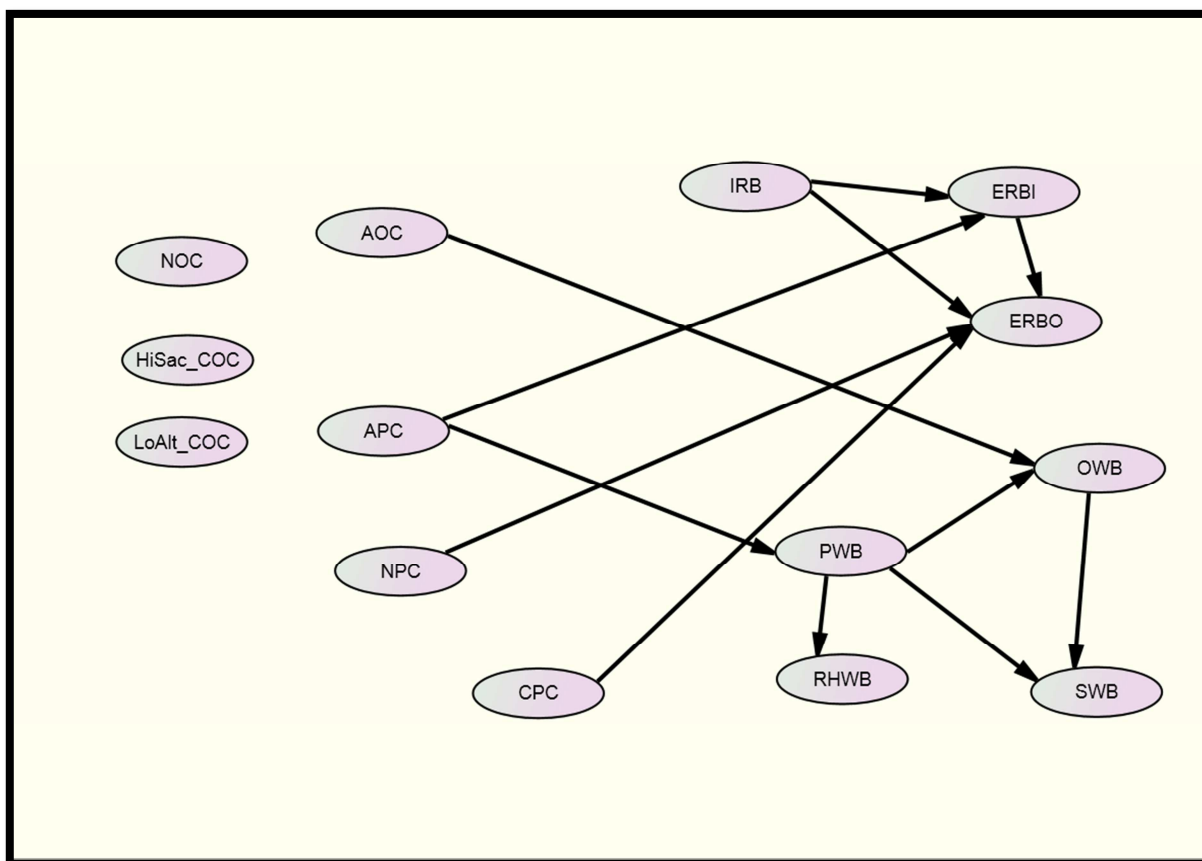
Figure 10. 9 Illustration of statistically significant standardised regression coefficients only (at p <.05) for the full hypothesised structural model of the non-locum sample.

From Appendix 10.6, it was shown that 35.2% of professional-withdrawal behaviour's variance was accounted for by its predictors in the hypothesised model. Around 54% of organisational-withdrawal behaviour's variance was accounted for by the model with affective-organisational commitment 2.5 times more influential than affective-professional commitment. Interestingly, 66.9% of sector-withdrawal behaviour's variance was accounted for by the model, with profession-withdrawal behaviour four times more influential than organisational-withdrawal behaviour. Over 35% of reduction-in-hours withdrawal behaviour's variance was accounted for by the predictors within this model. Over 24.4% of extra-role behaviour-individual's variance and 59.6% of extra-role behaviour-organisational's variance was explained by this model. The latter largely being explained by the other two job performance variables.

10.3.4 Independent/small-chain Sample

According to Table 10.8, in the Independent/small-chain sample, the averaged $x^2_{(593)}$=996.564, p≤.001, and Bollen-Stine Bootstrapped averaged p≤.006 suggested a lack of absolute fit with the data[410]. This said the x^2/df test value of 1.681 (median) and averaged SRMR value of .0647 illustrated good fit[411,426,430,453]. Moreover the TLI and CFI, achieved averaged values of .910 and .924 respectively, which approached excellent fit[426], but achieved good fit[430,454,455]. Furthermore, the RMSEA and PCLOSE also revealed acceptable model fit with averaged values of .056 and .054 (median). Added to this, an inspection of the various aforementioned sources of specification error did not provide additional feasible modification[361] (Appendix 12).

Table 10. 8 Selected goodness-of-fit statistics for the full hypothesised structural model in the Independent/small-chain sample (naive pooling)

Fit Indices	χ^2 (df)	BS P value	χ^2/df	SRMR	TLI	CFI	RMSEA	CAIC
Pooled values	996.56 (593)***	.006	1.681	.0647	.910	.924	.056[+]	1939.382

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1

Appendices 10.8 and 10.9 along with Fig. 10.10 illustrated that affective-professional commitment had a direct negative effect on professional-withdrawal behaviour (β=-.503) and an indirect effect on sector-withdrawal behaviour (β=-.360) which was fully

mediated by professional-withdrawal behaviour. Neither continuance-professional commitment nor normative-professional commitment was found to have any significant effect on the withdrawal behaviours. Moreover, neither of the organisational commitment variables had any significant direct or indirect effect. Professional-withdrawal behaviour was found to have a strong positive effect on organisational-withdrawal behaviour (β=.614).
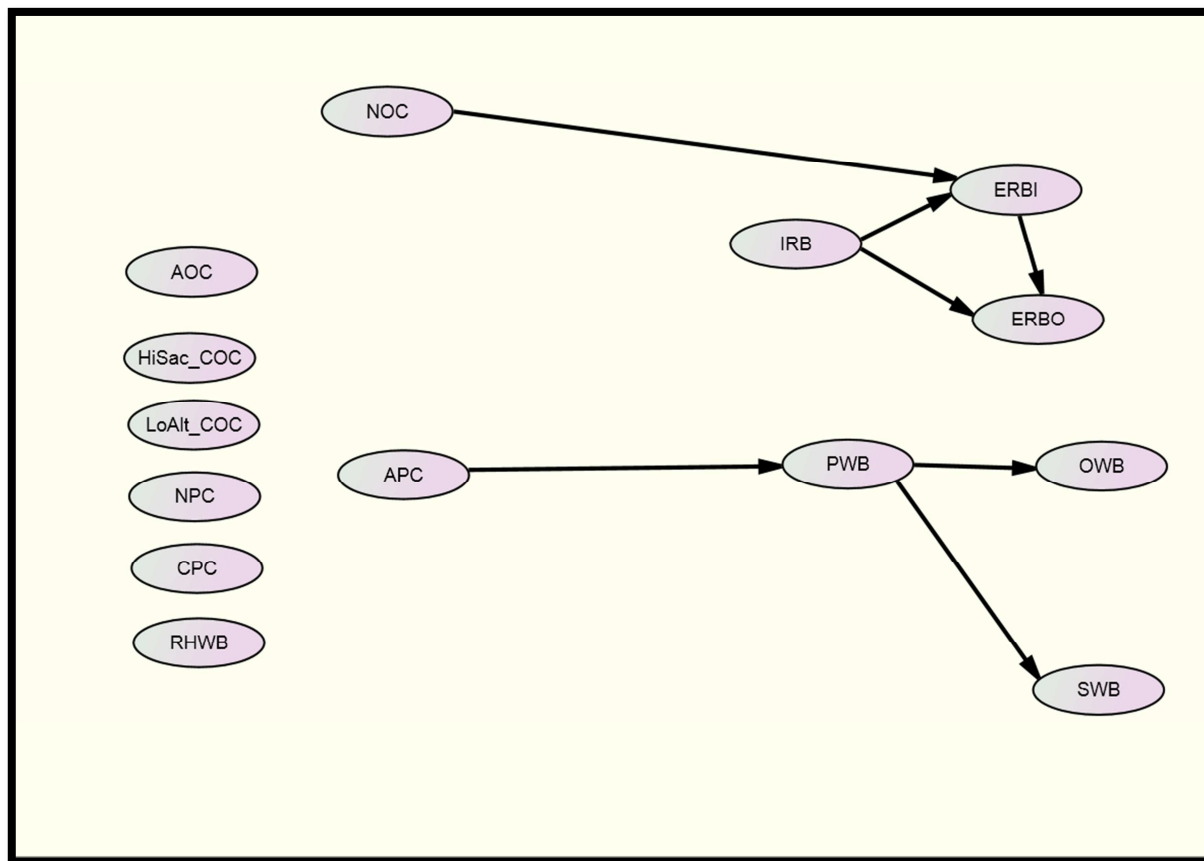

Figure 10. 10 Illustration of statistically significant standardised regression coefficients only (at p <.05) for the full hypothesised structural model of the independent/small-chain sample.

Normative-organisational commitment was the only organisational or professional commitment variable to have any significant effect on any of the job performance behaviours, with a positive direct effect on extra-role behaviour-individual (β=.173). However, in-role behaviour (β=.551) had a 2.5 times more influential effect on extra-role behaviour-individual than normative-organisational commitment. In-role behaviour also had a direct effect (β=.294) and indirect effect (β=.292), partially mediated by extra-role behaviour-individual, on extra-role behaviour-organisation. Finally, extra-role

behaviour-individual had a strong direct positive effect on extra-role behaviour-organisation (β=.529).

Appendix 10.8 showed that 33.7% of Professional-withdrawal Behaviour's variance was accounted for by its predictors in this model. About 59.9% of Organisational-withdrawal Behaviour's variance was accounted for by the model and 61.7% of Sector-withdrawal Behaviour's variance was accounted for by this model. In terms of the latter, professional-withdrawal behaviours influence was two times larger than affective-professional commitment influence. In terms of the Work-performance Behaviour, over 36.1% of Extra-role Behaviour-individual's variance and 63.2% of Extra-role Behaviour-Organisation was explained by this model.

10.3.5 Large-multiple Sample

According to Table 9.9 in the Large-multiple sample the averaged $x^2_{(593)}$=1079.477, p=.000, and Bollen-Stine Bootstrapped p≤.002) suggested a lack of absolute fit with the data[410]. Conversely, the x^2/df test provided a favourable averaged 1.820, whilst the averaged SRMR value of .0563 was a very good fit [411,426,430,453]. Of the baseline comparisons TLI and CFI, they achieved an averaged value of .918 and a .931 respectively, which was a good fit[430,454,455]. Finally, the RMSEA and the PCLOSE also provided very good fit with averaged values of .050 and 0.461 for the RMSEA and PClose, respectively. Added to this, an inspection of the modification-indices, standardised-residual covariances, etc. (see Appendix 12) did not provide additional feasible modifications[361].

Table 10. 9 Selected goodness-of-fit statistics for the full hypothesised structural model in the Large-multiples sample (naïve pooling)

Fit Indices	χ^2 (df)	BS P value	χ^2/df	SRMR	TLI	CFI	RMSEA	CAIC
Pooled values	1079.47 (593)***	.002	1.820	.0563	.918	.932	.050++	2083.938

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1

Appendices 10.10 and 10.11, with Fig. 10.11 revealed that both affective-professional commitment (β=-.549) and continuance-professional commitment (β=-.166) have direct

negative effects of professional-withdrawal behaviour. However, affective-professional commitment effect is over 3 times more influential than continuance-professional commitment effect in professional-withdrawal behaviour. Interestingly, continuance-professional commitment has an indirect-effect on organisational-withdrawal behaviour (β=-.077) and sector-withdrawal behaviour (β=-.148), both of which are fully mediated by professional-withdrawal behaviour. Normative-professional commitment has no direct or indirect effect on any of the outcome behaviours in the model. Out of the organisational commitment variables, only affective-organisational commitment had any effect on the withdrawal behaviours, with a direct negative effect on organisational-withdrawal behaviour (β=-.876), which was over 8 times more influential than continuance-professional commitment. Affective-organisational commitment was also related directly and negatively to professional-withdrawal behaviour (β=-.200), which was 2.5 times less influential than affective-professional commitment and marginally more influential than continuance-professional commitment.

Interestingly, both affective-professional commitment and continuance-professional commitment had significant direct positive effects upon extra-role behaviour-individual (β=.151) and extra-role behaviour-organisation (β=.210), respectively. However, both effects became insignificant when the effects were adjusted for covering variables in the model. Interestingly normative-organisational commitment (β=.188) had a positive direct effect upon extra-role behaviour-organisation. However, this was a third of the size of the direct-effect of extra-role behaviour-individual on extra-role behaviour-organisation (β=.580). In-role behaviour also had a direct-effect (β=.271) and indirect effect (β=.160), partially mediated by extra-role behaviour-individual, on extra-role behaviour-organisation. The latter effect was twice as influential on extra-role behaviour-organisation as normative-organisational commitment. Strikingly, neither low-alternative organisational commitment nor high-sacrifice organisational commitment had any direct nor indirect-effect on any of the work-performance behaviours or withdrawal behaviours in this model.
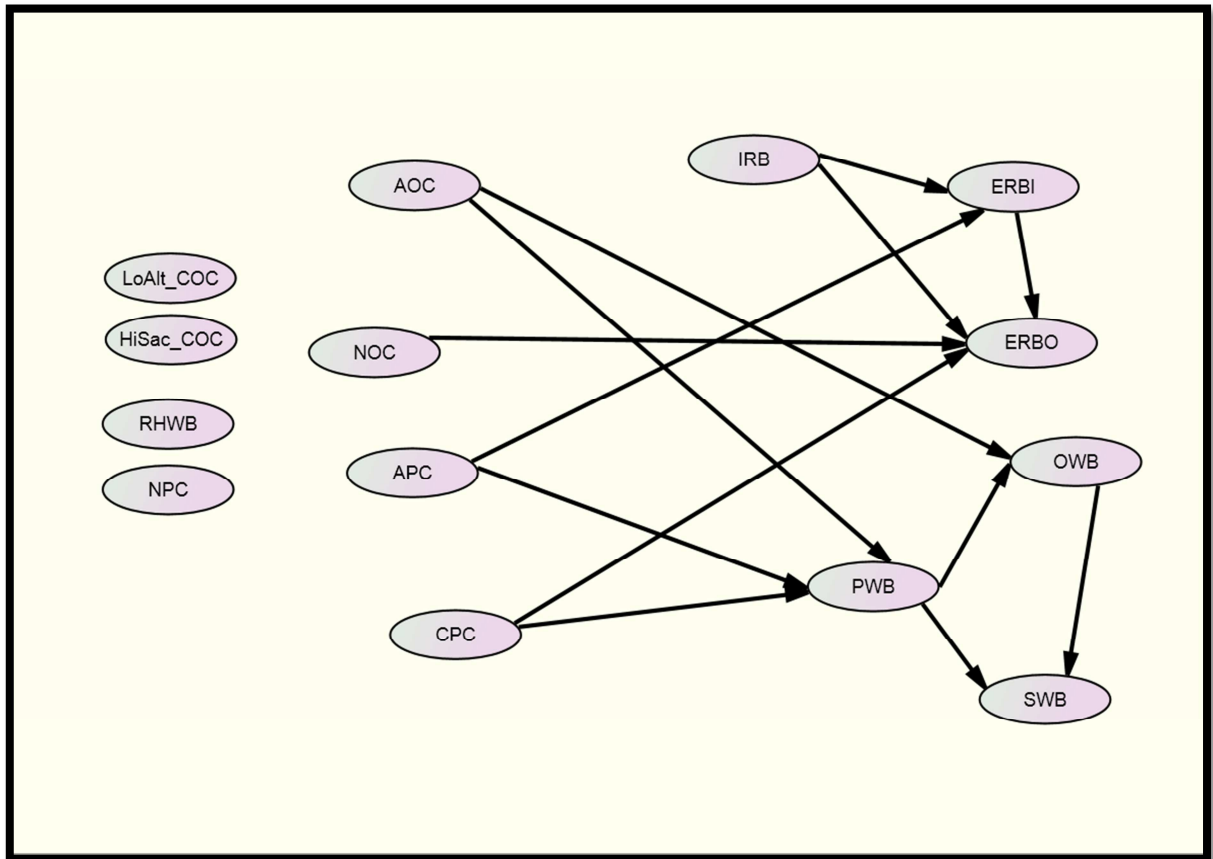
Figure 10. 11 Illustration of statistically significant standardised regression coefficients only (at p <.05) for the full hypothesised structural model of the large-multiple sample.

Appendix 10.10 also revealed, 41.9% of Professional-withdrawal Behaviour's variance was accounted for by its predictors in this model. Whilst, 52.2% of the variance of organisational-withdrawal behaviour was accounted for by this model and 74.2% of sector-withdrawal behaviour's variance was accounted for by the model. 38.1% of the variance of reduction-in-hours withdrawal behaviour was accounted for by the predictors within this model, although none were significant predictors. Only 8.1% of the variance of in-role behaviour was accounted for by the predictors of this model, with 11.2% of variance of extra-role behaviour-individual and 52.2% of the variance of extra-role behaviour-organisational being explained by this model.

10.3.6 A Comparison of the Different Samples and their Structural Models

Appendices 10.2 to 10.11, also reported the unstandardised regression weights (B) and the unstandardised total effects (B). Looking first at professional commitment and professional-withdrawal behaviour, affective-professional commitment was found to

have the greatest effect on professional-withdrawal behaviour in the non-locum sample (B=-.733), followed by the full respondent sample (B=-.725), the independent/small-chain sample (B=-.719), the Locum sample (B=-.694) and the least impact in the Large-multiple sample. Continuance-professional commitment was found to have the largest effect on professional-withdrawal behaviour in the large-multiple sample (B=-.101) followed by the Full Respondent sample (B=-.092). normative-professional commitment only had an effect on professional-withdrawal behaviour in the locum sample (b=-.142) which was significant. in terms of organisational commitment's effect on professional-withdrawal behaviour, affective-organisational commitment only had a significant relationship with professional-withdrawal behaviour (b=-.142) in the large-multiple sample. neither of normative-organisational commitment, low-alternative organisational commitment or high-sacrifice organisational commitment had a statistically significant effect on Professional-withdrawal Behaviour in any of the samples examined.

in terms of organisational-withdrawal behaviour and professional commitment, affective-professional commitment had the statistically significant effect on organisational-withdrawal behaviour in the non-locum sample (b=-.266) followed by the full respondent sample (b=-.241). Continuance-professional commitment had significant effects of the same small magnitude in both the full respondent (b=-.047) and large-multiple (b=-.047) samples. In terms of organisational-withdrawal behaviour and organisational commitment, affective-organisational commitment was found to have the strongest significant effect on organisational-withdrawal behaviour in the large-multiples (r=-.523) sample followed by the full respondent (b=-.303) and non-locum (b=-.265) samples respectively. Neither of normative-organisational commitment, high-sacrifice organisational commitment or low-alternative organisational commitment had any significant effects organisational-withdrawal behaviour in any of the samples.

For sector-withdrawal behaviour and professional commitment, affective-professional commitment was found to have the largest significant effect on sector-withdrawal behaviour in the independent/small-chains (b=-.549) sample followed by the full respondent (b=-.490) and non-locum (b=-.411) samples respectively. Continuance-professional commitment was found to have a significant effect on sector-withdrawal behaviour in the large-multiple (b=-.108) sample, followed by the community-

pharmacist (b=-.08) sample. Normative-professional commitment had no statistically significant effect in any of the examined samples. For sector-withdrawal behaviour and organisational commitment, it was found that neither of affective-organisational commitment, normative-organisational commitment, high-sacrifice organisational commitment or low-alternative organisational commitment had any significant effect on sector-withdrawal in any of the samples.

in terms of reduction-in-hours withdrawal behaviour and professional commitment, affective-professional commitment only had a significant effect on reduction-in-hours withdrawal behaviour in only full community-pharmacy sample (b=-.263). Neither normative-professional commitment nor continuance-professional commitment had any significant effect on reduction-in-hours withdrawal behaviour in any of the samples. in terms of reduction-in-hours withdrawal behaviour and organisational commitment, affective-organisational commitment only had a significant effect on reduction-in-hours withdrawal behaviour in only the full respondent sample (b=-.286). Low-alternative organisational commitment only had a statistically significant effect on reduction-in-hours withdrawal behaviour in only the full respondent sample (b=-.367). Neither normative-organisational commitment nor high-sacrifice organisational commitment had any significant effect on reduction-in-hours withdrawal behaviour in any of the samples.

For in-role behaviour, neither of the professional commitment variables organisational commitment variables had any statistically significant effect on in-role behaviour in any of the samples. For extra-role behaviour-individual and professional commitment, affective-professional commitment had the strongest significant effect on extra-role behaviour-individual in the non-locum sample (b=.224) followed by the full respondent sample (b=.182). Neither normative-professional commitment nor continuance-professional commitment had any significant impact on extra-role behaviour individual in any of the samples. For extra-role behaviour-individual and organisational commitment, it was found that neither of the affective-organisational commitment, normative-organisational commitment, high-sacrifice organisational commitment or low-alternative organisational commitment had any significant effect on extra-role behaviour individual in any of the samples.

In terms of extra-role behaviour towards the organisation and professional commitment, affective-professional commitment only had a significant effect in the full respondents sample (b=.160). Continuance-professional commitment however, had a direct effect in the full respondents sample (b=.091). Normative-professional commitment did not have any significant effect on extra-role behaviour individual in any of the samples. in terms of extra-role behaviour towards the organisation and organisational commitment, it was found that neither of the affective-organisational commitment, normative-organisational commitment, and high-sacrifice organisational commitment nor did low-alternative organisational commitment have any statistically significant impact on extra-role behaviour towards the organisational in any of the samples.

Finally, referring to Tables 10.5 to 10.9, the CAIC values for each of the models suggest that out of the five samples, it is the Locum sample's structural model which is the most parsimoniously fitting with an averaged value of 1874.878 (median).

10.4 Summary

This chapter has reported on examination of the relationships between the pre-specified structural components of the elaborated models. This was done by first examining the different components of the measurement-models and how well they fitted in each of the samples of interest. then the structural-models were assessed to examine the relationships between the latent variables of affective-professional commitment, normative-professional commitment, continuance-professional commitment, affective-organisational commitment, normative-organisational commitment, high-sacrifice continuance-organisational commitment and low-alternative continuance-organisational commitment and what their impacts were on in-role behaviour, extra-role behavioural towards the individual, extra-role behaviour towards the organisational, professional-withdrawal behaviour, organisational-withdrawal behaviour, sector-withdrawal behaviour and reduction-in-hours withdrawal behaviour. Finally the various models of the differing subgroups were compared with each other to identify idiosyncrasies of interest that were present within the models of the different groups. The next chapter will follow up the results of this chapter along with the results of the previous chapters; discuss and marry them together in order to create a coherent picture from which the impact and implications that these results have can be examined and critiqued.

11. Chapter 11 General Discussion and Conclusion

11.1.   Introduction

As illustrated in chapter one the main research questions of this research programme included, does normative-professional commitment and continuous professional commitment add to the understanding of how withdrawal behaviours and work-performance behaviours are explained beyond affective-professional commitment in community-pharmacists in GB? And does normative-organisational commitment and continuous-organisational commitment add to the understanding of how withdrawal behaviours and work-performance behaviours are explained beyond affective-organisational commitment in community-pharmacists in GB? These were also examined in subgroups of community pharmacists (chapter 4). To this end a series of hypotheses, detailed in chapter four, were developed based upon the community-pharmacy and commitment literature and the findings of stage-one. These results were reported in chapters 8, 9 and 10.

The present chapter provides a discussion of the salient points reported in the previous chapters and how they correspond to the research question, the aims and hypotheses of the programme of research reported in the thesis. This includes a review of the hypotheses, the potential implications of the research and a number of recommendations based upon the research are made. This is followed by a section devoted to highlighting the potential limitations of this research which were identified both during and after the research. Recommendations are then provided about how this research may be extended further. Finally, concluding remarks are made in this chapter to bring the entire thesis to a close.

11.2.   A review of the hypotheses

- HQ1.01   The levels of the TCM facets of the profession will be higher than their corresponding levels of the TCM facets of the organisation in community-pharmacists in GB.

There was some support for hypothesis HQ1.01 found in section 9.3 which suggested that the professional TCM facets were consistently higher in community-pharmacists than organisational TCM facets from stage 2. This was consistent with the findings of stage 1.1 in which community-pharmacists stated that given the choice between fulfilling organisational goals and professional goals, where there was a misalignment, the professional goals would take priority. Moreover, community-pharmacists also pointed out that even if they left their organisations they would still remain pharmacists. However, an inspection of the subgroups found that there was no difference between normative-professional commitment and normative-organizational commitment in a variety of respondent sub-groups such as full-time, males, white-ethnicity, black-ethnicity and mixed-ethnicity, non-employees, non-locum community pharmacists, which were regardless of bread-winner status, living-status, and how long they had practiced in the community. Interestingly there were also no difference between affective-professional and organisational commitment for independent/small-chain respondents and no difference in normative-professional and organizational commitment in independent/small-chains and medium-chain community pharmacists.

One reason for this may be the profile of such community-pharmacists, being predominantly male they are proportionally older, and more likely to be owners, full-time, and work in independents, small-chains and medium-multiples (Appendix 7.1), all of which indicated no differences between normative-professional and organisational commitments as well (Appendix 12). Moreover, male, older and full-time community-pharmacists are more likely to be in senior positions and therefore have had more perceived support and opportunities than for example female, part-time and younger community-pharmacists[64]. Stage 1.1 found that community-pharmacists would feel guilty about leaving their organisation if they perceive it as having provided relevant support. This said, section 9.2 illustrated that levels of both normative facets of commitment were found to be consistently lower than the levels of the other two facets of commitment both in community-pharmacists in general and also within the subgroups.

- HQ1.02   Levels of affective and continuance-professional commitment will be higher than normative-professional commitment in community-pharmacists in GB.

Section 9.2 illustrated strong support for HQ1.02 and found that in community-pharmacists both affective and continuance-professional commitments were established to be significantly higher than normative-professional commitment. Moreover, an inspection of the sub-groups, mentioned in chapter 9, appeared consistent with this finding (Appendix 12). Stage 1.1 found a number of themes which were relevant to both continuance-professional commitment and normative-professional commitment. However, some of the themes related to normative-professional commitment have become less salient recently, such as training that has been funded by the state, especially as newer community pharmacists will have been paying considerable sums of money for their pharmacist training (stage 1.1). Stage 1.1 also found that lack of role-clarity due to changes to the profession (e.g. responsible pharmacist regulation, etc.) made individual community pharmacists feel less obligation to their profession (stage 1.1). This was compounded when they perceived themselves as having significant responsibilities and being accountable and yet being less protected professionally, legally and politically than other professions such as medicine (stage 1.1).

Interestingly, when comparing levels of affective-professional commitment with continuance-professional commitment, there were no differences in community-pharmacists as a whole. However, when inspecting the subgroups (Appendix 12) the only significant difference was found for those pharmacists whom were joint-breadwinner. Here affective-professional commitment was significantly higher than continuance-professional commitment (section 9.2.5). Three quarters of joint-breadwinners were female, generally older, almost half had young dependents, almost half worked part-time and almost a third were locum pharmacists (Appendix 12). One explanation for this may be found in stage 1.1 which revealed that the perceived flexibility of the profession to accommodate individuals with family responsibilities was particularly conducive to affective-professional commitment. Indeed, such versatility of being able to dip in and out, and work as a locum was viewed as more female-friendly than other professions. In-addition the fact that almost half of these pharmacists worked part-time and were joint-breadwinners may have meant that there was less pressure on them compared to full-time main-breadwinners. Therefore, they may have felt less stuck in the profession (stage 1.1).

Remarkably there was no significant difference between affective-professional commitment and continuance-professional commitment for minor-breadwinners. One reason for this may have been that minor-breadwinners, were found to be younger than joint-breadwinners generally, far more likely to have younger-dependents and to be second or relief pharmacists (Appendix 12). Over half worked less than twenty hours per-week, with 15% working less than ten hours per-week. They were also more likely to be employees than joint-breadwinners. It may be argued that younger female pharmacists with family responsibilities were more likely to have younger children, and this therefore may have restricted where and for how long the pharmacist could practice each week. However, having put so much effort into becoming a pharmacist it may be argued that leaving the profession would have represented too much of a sacrifice, and would have made potential re-entry, at a later date, more difficult if not kept up-to-date (stage 1.1). Taken together this may have potentially created continuance-professional commitment, where the pharmacist opted for lesser pharmacy roles (e.g. second or relief, etc.) where the full range of pharmacy skills may not have been utilized[64], thereby also reducing affective-professional commitment (Appendix 12). Hence no difference was found between the two facets of professional commitment.

- HQ1.03   Affective-professional commitment would have the strongest relationship with extra-role behavior towards the individual followed by normative-professional commitment only, in community-pharmacists in GB.

There was partial support for the HQ1.03 as a chapter 9 regression-model found affective-professional commitment was a predictor of extra-role behavior along with continuance-professional commitment, in community-pharmacists. This was consistent with the structural-model (chapter 10), where affective-professional commitment remained significantly predictive of extra-role behavior-individual, although continuance-professional commitment did not; and this was also replicated within the correlational analysis of the community-pharmacists(chapter 9). This said none of the models provided particularly strong relationships between affective-professional commitment and extra-role behavior-individual in community-pharmacists with the both models exhibiting similar sized standardized-effects of 0.128 and 0.138 respectively; and the correlational analysis similarly resulting in a weak positive relationship between the two constructs. Interestingly, the regression-model also found

that being female, qualified for between 31-40 years, being in community for between 21-40 years all predicted an increase in extra-role behavior-individual (section 9.4.6). However, in none of these models did normative-professional commitment become a predictor of extra-role behavior-individual.

One reason for the relatively weak relationship in terms of affective-professional commitment's impact on extra-role behaviour-individual may have been found by an examination of the developmental bases of affective-professional commitment[9, 41, 122]. According to stage 1.1 some of the main factors associated with the development of affective-professional commitment were the perceptions of shared values and goals with others in the profession along with perceived shared identity and engagement in activities deemed as central and relevant to pharmacy[9, 41, 122]. It was argued as plausible that as affective-professional commitment increased so too would the desire to have interacted with colleague pharmacists with familiar and aligned professional values and objectives[41, 456, 457]. However, as illustrated by chapter 7 over 45% of community-pharmacists who were surveyed practiced in large-multiples pharmacies, with over 64% practicing in medium and large-multiple pharmacies, in which their colleagues were not always pharmacists, and in which the values and objectives (as corporate businesses accountable to shareholders) were not always aligned with those of the pharmacist[44, 51]. Therefore, engaging in extra-role behaviour-individual may not have always resulted in performing tasks which were necessarily aligned to pharmacy values and objectives (e.g. assisting non-pharmacist line manager with business administration tasks, non-pharmacy related promotions and targets, etc.)[96, 98, 458-460].

Equally, with normative-professional commitment, its development was viewed as potentially emanating partly from the internalisation of norms, customs and responsibilities of the profession[9, 41, 122] and as found in stage 1.1 through exposure via social and familial networks (section 6.2.3). However, stage 1.1 also found that normative-professional commitment may also represent, community-pharmacists viewing themselves as health professionals obligated to their patients. Where this is the case community-pharmacists may have exhibited higher levels of normative-professional commitment. However, it may not necessarily have followed that this would have positively influenced the performance of extra-role behaviour towards the individual, if such tasks were not benefiting patients (e.g. promoting a particular brand

to meet targets for their managers, assisting a business-manager/colleague with business-related administrations, etc.)[9,41,122]. Interestingly, although the structural-model did not specify a direct relationship from continuance-professional commitment to extra-role behaviour-individual, the regression-model did. One reason for this may be that stage 1.1 found that community-pharmacy was perceived as unique, as a high-end profession in which individuals were able to dip in and out when required (section 6.2.2). This was viewed as particularly useful for female community-pharmacists who could then manage family commitments and responsibilities with this level of flexibility. Since the vast majority of those surveyed in stage 2 were female (60%), with almost two-thirds of them being minor or joint-household income providers, almost half with young dependents and over half working part-time hours, it may be argued that this flexibility of pharmacy alone would potentially make it difficult to leave, even if desired. This may mean that such community-pharmacists may prioritise this employment more as a means to an end (i.e. maintaining a lifestyle, see section 6.2.2), and therefore be interested in its continued success for these reasons. To help maintain continued success, whilst being part-time, performing extra-role behaviours-organisation may not be feasible (e.g. attending the workplace above and beyond the norm, etc.), but extra-role behaviour-individual such as taking a personal interest in other colleagues, or passing on valuable information to colleagues, may be easier to do.

- HQ1.04 In addition to affective-professional commitment, both normative and continuance-professional commitment would have significant relationships with professional-withdrawal behaviors in community-pharmacists in GB

There was partial support found for HQ1.04 as revealed in chapter 9, with the inter-correlational analysis finding significant medium-sized negative relationships for normative-professional commitment with professional-withdrawal behaviour, which were stronger than the significant weak negative correlation found between continuance-professional commitment and professional-withdrawal behaviour. However, only continuance-professional commitment uniquely predicted professional-withdrawal behavior beyond affective-professional commitment in the linear-regression (section 9.3). This said normative-organisational commitment was found to also predict professional-withdrawal behaviour, as did being a pharmacy manager, in the linear-

regression. In the structural-model only continuance and affective-professional commitment predicted professional-withdrawal behaviour, when each of the other outcome variables were predicted simultaneously, with the caveat that none of the demographic variables were controlled for, in this model (section 9.4). Chapter 9 found that managers exhibited significantly less professional-withdrawal behaviours than locums, owners, relief and second-pharmacists. One reason for the importance here of normative-organisational commitment in the regression-model predicting professional-withdrawal behaviour in community-pharmacists may be due to the unique contribution of normative-organisational commitment to organisational-withdrawal behaviour and their strong negative correlation with each other, with organisational-withdrawal behaviour also being very highly correlated with professional-withdrawal behaviour (section 9.3). Indeed it may be argued from chapter 9 that normative-organisational commitment may be more relevant to pharmacists than normative-professional commitment, particularly, in employees (e.g. managers) who constitute the majority of community-pharmacists in this programme of research. This may also be illustrated from stage 1.1 where perceived support from the organisation to engage in professional goals in community practice may be contended to more likely sustain normative-organisational commitment than perceived support from the state or pharmacy would sustain normative-professional commitment, especially with the advent of tuition fees.

One potential reason for the increasing importance of continuance-professional commitment and the reduction in importance of normative-professional commitment may be the consistently lower levels of normative-professional commitment found in community-pharmacy in comparison to the other professional commitments. This is also consistently found within each of the subgroups (chapter 9). Therefore, one reason for the lack of effect on professional-withdrawal behaviour of normative-professional commitment may have been the reduction of importance and relevance of normative-professional commitment in community-pharmacy. For instance stage 1.1 found that whilst the pharmacists' social network and familial ties may have introduced pharmacy to them and provided impetus to become a pharmacist, this on its own would not compel them to stay in pharmacy (chapter 6). In addition, with the introduction of fees and loans with more students carrying the financial burden of training, the perceived obligation to repay the investment from the profession and the state may have become a less relevant consideration (chapter 6). Added to this, the lack of clarity as to the role

and purpose of pharmacy in GB engendered by the changes that have occurred in pharmacy over the last decade may have also reduced the relevance of normative-professional commitment to the decision to leave the profession (chapter 6).

- HQ1.05   Continuance professional commitment only, would have a significant relationship with sector withdrawal behavior in community pharmacists in GB, in addition to affective professional commitment.

There was strong evidence to support HQ1.05, as the structural-model illustrated that continuance-professional behaviour was related to sector-withdrawal behavior which was fully mediated through professional-withdrawal behaviours as was the relationship between affective-professional commitment and sector-withdrawal behavior in community-pharmacists in GB. Normative-professional behaviour was not found to predict sector-withdrawal behaviours in community-pharmacists in GB. Continuance-professional commitment was thought to be associated with sector-withdrawal behaviour as pharmacists that may have been disillusioned by their practice and wanting a change, but thought that moving professions would represent a waste of their time and effort in pharmacy and therefore constitute a sacrifice which was too high, could instead move to a different sector, for a fresh challenge (chapter 6). However, an alternative view also illustrated in stage 1.1 may be that pharmacists which are affective-professionally committed but feel that community-pharmacy despite an increase in clinical work, does not represent a pharmaceutical-care orientated practice which uses a pharmacists' full range of knowledge skills and abilities, may be more inclined to change sectors to achieve a more clinical practice (chapter 6).

Out of the facets of professional commitment only affective-professional commitment was found to be a predictor of sector-withdrawal behaviour in the regression model (chapter 9). Interestingly, out of the demographic control variables years in community, between-11-to-40 years, also predicted sector-withdrawal behaviour. This is replicated by the relatively strong negative correlations between affective-professional commitment and sector-withdrawal behaviour found for the aforementioned years in community-pharmacy (Appendix 9.9). One reason for this may be that owing to the significant changes which have occurred in community-pharmacy in the last ten years (e.g. new community pharmacy contract, responsible pharmacist regulation, etc.) and

are continuing to occur in community-pharmacy (e.g. additional enhanced NHS services, clinical commissioning groups, etc.), which whilst promising a more varied clinical job-role and skill utilisation, have not been seen to deliver satisfactorily (chapter 6). Therefore, this coupled with the pace and bewilderment of change in the community sector (section 6.2.1) may precipitate affective-professionally committed pharmacists to change sector.

- HQ2.01　　　　　　　　Levels of affective and continuance-organisational commitment will be higher than normative-organisational commitment in community pharmacists in GB.

There was some strong support for HQ2.01, with both affective, high-sacrifice and low-alternative organisational commitment being found to be significantly higher than normative-organisational commitment in community-pharmacists in general (Appendix 12). However, an inspection of the subgroup findings suggest that for black and mixed ethnicity pharmacists there were no difference between the levels of affective, high-sacrifice, low-alternative organizational commitment and normative-organisational commitment (chapter 9). Nevertheless, the reason for this may be due to the small sample sizes of 12 and nine for black and mixed-ethnicity pharmacists. This said, when the ethnicity categories were collapsed into white and ethnic-minority, there were significant difference found between the levels of affective, high-sacrifice, low-alternative organizational commitment and normative-organisational commitment (chapter 9). There was no difference between normative-organisational commitment and high-sacrifice organisational commitment in both main and joint-breadwinners (chapter 9).

Moreover, there were also no differences between low-alternative organizational commitment and normative-organisational commitment and between high-sacrifice and organizational commitment and normative organisational commitment for living-alone pharmacists and living-with-other, pharmacists (chapter 9). One reason for this may have been that these pharmacists were more likely to be younger with around 20% of living-alone and a third of living-with-other pharmacists being under the age of 30 (Appendix 12) and therefore may have not had time to build up knowledge and skills specific to their organisations, nor perceive obligation to the organisations owing to a

buildup of support over the years. Interestingly, there were no differences between high-sacrifice organisational commitment and normative-organizational commitment when stratified by time in community. Developing normative-organisational commitment through perceived organisational support and becoming obligated to their colleagues would often happen over a period of time (chapter 6). Equally, during that time pharmacists may also develop skills, knowledge, remunerations package and friendships which would be specific to their organisations, which again would increase over time (stage 1.1). Therefore, it may be argued that high-sacrifice and normative-organisational commitment may be related in this way over a period of time. Interestingly the size of organisation did not alter the aforementioned relationship between high-sacrifice organisational commitment and normative-organisational commitment (chapter 9).

- HQ2.02   Affective-organisational commitment would have the strongest relationship with extra-role behaviour towards the organisation followed by normative-organisational commitment only, in community-pharmacists in GB

There was some evidence to support HQ2.02 as both affective and low-alternative organisational commitments were found to predict extra-role behaviour-organisation along with both affective and continuance-professional commitments, but not normative-organisational commitment, in the regression model (chapter 9). However, this was not replicated in the structural models, when taking into account relationships with the other outcome variables, as no facet of organisational commitment was found to be a significant predictor (chapter10). Moreover, correlational analysis only found a significant weak positive relationship between affective-organisational commitment and extra-role behaviour-organisation for married/living-with-partner pharmacists (Appendix 9.5). Interestingly, affective-professional commitment was found to be associated with extra-role behaviour-individual in HQ1.03, as the structural model revealed that extra-role behaviour-individual mediated the relationship between affective-professional commitment and extra-role behaviour-organisation (chapter 10). This may occur by helping colleagues beyond the in-role behaviours (e.g. by helping others who may have excessive workloads, passing along helpful information, etc.) and therefore engaging in this would have made colleagues more productive thus benefiting the organisation[243, 246]. Equally, such behaviours may have been argued to have made

the pharmacist also more productive towards the organisation by conserving and maximising efficient usage of organisational time beyond what may have been considered in-role behaviours[246]. Similarly, it may be argued that affective-organisational commitment may also foster extra-role behaviour-organisation through greater perceived attachment to colleagues and the local team which would then benefit the organisation at large (chapter 6). Indeed, whilst it may be plausible that a normative-organisationally-committed pharmacist would feel an obligation to their colleagues, this has not been borne out in the regression-model or the structural-model. Inspections of the subgroup correlational analysis also do not provide any evidence of these relationships between normative-organisational commitment and extra-role behaviour-individual nor extra-role behaviour-organisation (chapter 9). One reason for this may be that the bond between a normative-organisationally committed pharmacist and colleagues may be more affective and less obligatory in nature, as a connection with colleagues was found to be present in both facets of organisational commitment (chapter 6)[41].

- HQ2.03   In addition to affective-organisational commitment, both normative and continuance-organizational commitment would have significant relationships with organisational-withdrawal behaviour in community-pharmacists in GB

There was only partial support for HQ2.03 as the regression-model of organisational-withdrawal behaviour found normative-organisational commitment to be a significant predictor but none of the continuance-organisational commitment sub-factors, high-sacrifice or low-alternative organisational commitment were predictive in community-pharmacists (chapter 9). Only affective-organisational commitment was found to be a predictor of organisational-withdrawal behaviour in the structural model (chapter 10). Interestingly an inspection of the correlations of community-pharmacists in general found that whilst normative and affective-organisational commitments were related to organisational-withdrawal behaviour with strong negative correlations. More interestingly, low-alternatives organisational commitment had a positive weak effect on organisational-withdrawal behaviour (chapter 9).

An inspection of the community-pharmacist subgroup correlations revealed that normative-organisational commitment and affective-organisational commitment consistently were found to have similar negative relationships with organisational-withdrawal behaviour which ranged from medium to very strong in size (chapter 9). The inspection of the subgroup correlations also revealed that low-alternative organisational commitment had a positive relationship with organisational-withdrawal behaviors in pharmacists that were female, married, working full-time as non-locum employee, in large multiples. Moreover, an inspection of the means of the organisational commitment variables for these socio-demographic variables also revealed that low-alternative organisational commitment scored higher than the other facets of organisational commitment for these variables (chapter 9). This mirrored what has already been found in previous research regarding female pharmacists often being in lower positions in large multiples, being unable to move ahead similarly to their male counterparts, therefore feeling stuck due to lack of alternatives[64, 461]. It also highlighted that not all types of commitment may be viewed as positive to counteract withdrawal behaviour and foster work-performance behaviour. One reason for this may be found in stage1.1, where it was established that a comfort-zone of practice may be built over a period of time in which a community-pharmacist becomes familiar with customers/patients, environment, working practices and systems, etc., and therefore is unwilling to leave even if unhappy until a suitable alternative is found (chapter 6).

- HQ2.04   Continuance-organisational commitment only, would have a significant relationship with reduction-in-hours withdrawal behaviour in community-pharmacists in GB, in addition to affective-organizational commitment.

There was significant support found for HQ2.04 in the regression-model, which found that in addition to affective-organisational commitment, both low-alternative organisational commitment and high-sacrifice organisational commitment also predicted a pharmacist's reduction-in-hours withdrawal behaviour (chapter 9). Additionally, affective-professional commitment was also found to be a predictor as well. This model was almost fully replicated in the structural-model with the exception of the non-prediction of high-sacrifice organisational commitment in this pharmacist model. Interestingly, high-sacrifice organisational commitment was found to positively predict

a community-pharmacist's reduction-in-hours withdrawal behaviour. This is consistent with findings from stage 1.1 in which it is found that where other forms of withdrawal are not possible, due to the potential high or inconvenient loss that may be incurred as a result, such as reduced pension entitlements or employment benefits, a community-pharmacist may consider reducing hours-of-work. Stage 1.1 illustrated this to be prevalent to restore work-life balance and to manage family responsibilities (chapter 6). Contrary to HQ2.04, both the regression-model and the structural-model found that affective-professional commitment was also associated negatively with reduction-in-hours withdrawal behaviour. Contrary to this, stage 1.1 indicated that affective-professional commitment may be positively related to a community-pharmacist's reduction-in-hours withdrawal behaviour, where the hours worked per-week were deemed to be excessive and unsafe, such as working 12 hour shifts (chapter 6). By reducing hours of work, stage 1.1 findings contend that a pharmacist's practice would be perceived to be more safe and optimised. However, this explanation remained tentative as it was not borne out by any of the stage 2 analyses.

- HQ3.01   Locum community-pharmacists would have similar levels of affective-professional commitment than non-locums in GB
- HQ3.02   Locum community-pharmacists would have significantly less normative-professional commitment than non-locums in GB

There were mixed results for the abovementioned two hypotheses relating to the level of professional commitment in locum and non-locum community-pharmacists in GB. There was significant support for HQ3.01 to suggest that locum community-pharmacists held similar levels of affective-professional commitment to non-locums (chapter 9). This is consistent with stage 1.1 where overwhelmingly affective-professional commitment was associated with an alignment of personal values and goals with the profession, as well as the use of professional knowledge, skills and abilities, regardless of whether the community-pharmacists was a locum or not (chapter 6). However, there was no support for HQ3.02, as both locums and non-locums' levels of normative-professional commitment were found to be similar to each other and significantly lower than for their respective levels of affective and continuance-professional commitments (chapter 9). Indeed, stage 1.1 illustrated that the development and maintenance of normative-professional commitments due to the subsidised nature of pharmacy training

may have receded due to the implementation of pharmacy course tuition fees (chapter 6). Moreover, even in locum community-pharmacists, which were more likely to be older than non-locums, and therefore less likely to have paid tuition fees, other issues such as the substantial changes that have occurred to community-pharmacy and pharmacy in general may have reduced their levels of normative-professional commitment (chapter 6). Equally, it may be argued, issues such as lack of role-clarity and the perception of too much accountability with relatively little support and protection would affect locum and non-locum community-pharmacists similarly (section 6.2.3).

- HQ3.03   Locums community-pharmacists would have higher levels of continuance-professional commitment than non-locums in GB
- HQ3.04   Locum community-pharmacists would have lower levels of all facets of organisational commitment than non-locums in GB

Stage 1.1 noted it was widely perceived that one of the unique features of pharmacy practice was its flexibility for pharmacists to pursue other commitments whilst maintaining a presence in the profession to fall back on. This was supported in chapter 7 by the results that significantly more locums had jobs outside of community-pharmacy compared to non-locums and a significantly larger amount of locums worked part-time compared to non-locums. Despite this stage 2 found no evidence to support HQ3.03. In fact non-locums appeared to have higher levels of continuance-professional commitment, although this was not significant (chapter 9). One reason for this may be that non-locums were found to be more likely to be younger (chapter 7) and potentially more likely to have university related debt or saving for a large purchase (e.g. home, car, etc.). Therefore even if they wished to leave the profession, the cost of leaving the profession and starting again may be perceived to be far too prohibitive. Another reason may be that over half of locum community-pharmacists were over 50 years of age with almost a quarter over 61 years of age and older and therefore contemplating retirement from the profession at some stage soon (chapter 7). This was corroborated to a degree by the fact that the majority of community-pharmacists over the age of 50 years old worked part-time as did the majority of locums (Appendix 12). As expected there was significant evidence found for HQ3.04 as significant differences were found for between locums and non-locums for each of facets of organisational commitment

(Chapter 9), with the exception of low-alternative organisational commitment. One reason for this may be found from stage 1.1, which established that both locum and non-locum community-pharmacists perceived the community-pharmacy job market to provide plenty of options for community-pharmacists (chapter 6).

- HQ3.05   None of the TCM facets of the organisation will predict withdrawal behaviours or work-performance behaviours in locums in GB

There was some evidence found to support HQ3.05, from the structural-model which found that none of the organisational commitment facets predicted either of the outcome variables, when all commitment and outcome variables were considered within the same model (chapter 10). However, contrary to HQ3.05, correlational analysis illustrated a number of medium to strong negative relationships between affective-organisational commitment and professional, organisational, sector and reduction-in-hours withdrawal behaviour (chapter 9). One reason for this may be that a significant proportion of locum community-pharmacists worked in independent/small-chain (chapter 7). Stage 1.1 revealed that for locums, who have worked consistently for a number of years in a particular organisation (especially if an independent/small-chain), affective-organisational commitment may occur through the form of attachment to the staff and regular patients/customers and therefore to the organisation by proxy (chapter 6). Such an attachment may therefore be argued to have a bearing upon considerations to leave the profession, organisation, sector and even to reduce hours. Similarly, Stage 1.1 also revealed that where locums may have worked consistently for a number of years for an organisation (particularly, if an independent/small-chain), there may develop a perceived sense of obligation towards other colleagues and staff (chapter 6). However, in general it was found in stage 1.1 that locum community-pharmacists were less likely to exhibit higher levels of affective and normative organisational commitment compared to non-locums, as stage1.1 illustrated that locums did not perceive any obligation on the part of the organisation to them (chapter 6).

- HQ3.06   In locum community-pharmacists, affective and continuance-professional commitment would predict professional withdrawal behaviour similarly, in GB

There was strong support for HQ3.06 as the structural-model of locum community-pharmacists found negative predictive relationships between affective and continuance-professional commitment and professional-withdrawal behaviour (chapter 10). However, in this model normative-professional commitment was also found to be a negative predictor. This was mostly replicated in the linear-regression model which found both affective and continuance-professional commitments to predict professional-withdrawal behaviour, when fully adjusted for other commitment and socio-demographic variables, with the caveat that being a locum was not found to be a significant predictor in the full sample model (chapter 9). In both models affective-professional commitment was found to be the strongest predictor with the other facets of professional commitment exhibiting smaller and yet unique effects on professional-withdrawal behaviour. This was consistent with stage 1.1 in which an alignment between personal values and goals of the individual pharmacist and the profession of pharmacy was strongly associated with the development of affective-professional commitment (chapter 6). Therefore, the internalisation of such goals and values may be argued to create a robust resistance against parting from the same profession, the values and goals of which, the affective-professionally committed pharmacist shares (chapter 6). This may then be argued to create a stronger predictor of professional-withdrawal behaviour than continuance-professional commitment, as stage 1.1 found such forms of commitment as being akin to feeling trapped in the profession. Stage 1.1 demonstrated that this facet of commitment was maintained by perceptions of low alternatives available and the prohibitive costs of leaving, rather than wishing to remain in the profession (chapter 6). Therefore, should an opportunity to professionally-withdraw occur without prohibitive costs, there would be far less resistance to professional-withdrawal behaviour (chapter 6).

- HQ3.07   Affective professional commitment more likely to predict extra-role behaviour towards the individual than the organisation in locum community pharmacists GB

No evidence was found in stage 2 for HQ3.07, as whilst affective professional commitment was found to be a significant predictor of extra-role behaviour-individual and extra-role behaviour-organisation, being a locum pharmacist was not found to be a predictor in either fully-adjusted linear-regression model (chapter 9). This was

replicated by the structural-model for locum community-pharmacists which also failed to find these relationships (chapter 10). Correlational analysis also did not provide any significant relationship between affective-professional commitment and extra-role behaviour-individual for locum pharmacists (chapter 9). This is contrary to stage 1.1 in which all community-pharmacists including locum were willing to go the extra-mile to ensure the smooth running of the pharmacy for patients, which could include discussing issues with other staff during slow periods in the dispensary (chapter 6). One reason for this inconsistency may be that locums are more likely to practice in more than one store and so even though it is feasible for community pharmacists to engage in extra-role behaviour-individual as suggested in stage 1.1, this may take longer to occur due to the greater time that would be required to form attachments with staff, and only if the locum maintained regular practice at a particular pharmacy (chapter 6). Locums may also be argued to be limited by what they may be able to do, for instance they may be able to help a colleague with a heavy workload on a particular shift for the benefit of patients, but they may not be able to pass on messages directly to staff for the next day, as they may be working in a different pharmacy on that day (chapter 6). This said there was a medium-sized positive correlation between affective professional commitment and extra-role behaviour-organisation in locum pharmacists. Moreover, continuance-professional commitment was also found to predict extra-role behaviour-organisation in the structural-model of locum community-pharmacists. One reason for this may be found in stage 1.1 in which locum community-pharmacists perceived that they would be expected to do everything that was required to be done on shift, even beyond their job-description, if they wished to continue locuming in the particular pharmacy/organisation (chapter 6).

- HQ3.08　　　　　　　Affective-organisational commitment is more likely to predict extra-role behaviour towards the organisation in non-locum pharmacists in GB than affective-professional commitment.

There was no evidence to support HQ3.08 as neither affective-organisational commitment nor affective-professional commitments were found to predict extra-role behaviour-organisation in the structural model in non-locum pharmacists ((chapter 10). In fact, only normative and continuance-professional commitments were found to predict extra-role behaviour-organisation, with affective-professional commitment

predicting extra-role behaviour-individual. Additionally, the fully-adjusted linear-regression model found both affective-professional and affective-organisational commitment to predict extra-role behaviour-organisation, with affective-professional commitment being the stronger predictor. This was somewhat replicated, in the correlational analysis with only affective-professional commitment found to relate, albeit weakly, with extra-role behaviour-organisation in non-locum pharmacists (chapter 9). Nevertheless, contrary to the findings of the structural-model, it may have been argued from stage 1.1 that affective-organisationally committed pharmacists would have been more likely to have shared goals and values with their organisation and therefore more likely to do more for their organisation (chapter 6). Similarly, it may have also been argued that there was a greater potential for conflict with an affective-professionally committed pharmacist, between professional and organisational goals, which may reduce extra-role behaviour-organisation. One reason for the findings of the structural model maybe found in stage 1.1 as normative-professional committed pharmacists may be argued to perceive an obligation to their local communities and therefore by willing to go beyond what is required to ensure that the pharmacy ran smoothly as a sound on-going concern, as well as a practice (chapter 6). In addition, a reason from stage 1.1, for the effect of continuance-professional commitment in the structural-model on extra-role behaviour-organisation may be argued to be due to the ambiguity between the job description and what is perceived to be required to do the job-role satisfactorily (chapter 6).

- HQ4.01   Independent/small-chain community-pharmacists would have significantly higher levels of affective, normative and continuance-organisational commitment than large-multiple pharmacists in GB
- HQ4.02   Both Independent/small-chain and large multiple pharmacists would have similar levels of affective and normative-professional commitment in GB

There was mixed support for HQ4.01 as levels of affective organisational commitment and normative organisational commitment were found to be significantly higher in independent/small-chain pharmacists than in large-multiple pharmacists (chapter 9). However, this was not the case in both high-sacrifice organisational commitment and low-alternative organisational commitment as no significant difference was found

(chapter 9). One reason for this may be argued from stage 1.1 that pharmacists working in either size of pharmacy may perceive costs to leaving the organisation, which whilst some may be different (e.g. monetary investment in the pharmacy shop, etc.) and some may be similar (e.g. work-related comfort-zone, etc.), both may be equally salient (chapter 6). In addition, a reason for the lack of difference in terms of low-alternative organisational commitment may be due to the perceived plentiful options available in community pharmacy reported in stage 1.1. There was strong support for HQ4.02 as affective-professional commitment and normative-professional commitment were found to be similar in size, although for independent/small chain pharmacists and large-multiple pharmacists, affective-professional commitment was found to be significantly higher than normative-organisational commitment (chapter 9). Support for HQ4.02 was also found in stage 1.1 as affective-professional commitment was associated with an alignment of personal values and goals with the profession, as well as the use of professional knowledge, skills and abilities, regardless of the size of community pharmacy (chapter 6).

- HQ4.03   Independent/small-chain community pharmacists would have significantly higher levels of continuance-professional commitment than large-multiple pharmacists.

Also in HQ4.03 it was argued that as independent/small-chain pharmacists included owners and or pharmacists who would know the proprietors of the small-chain there would be greater levels of cost associated with leaving the profession that may not be just economical but may also include social-networks. This was deemed to be more salient in independents/small-chain pharmacists as they tended to be significantly older and more experienced in community pharmacy than large multiple pharmacists, and therefore may have gathered more non-transferrable professional knowledge skills and abilities as well (chapter 7). However, no support was found for HQ4.03 as there was no significant difference between the two sizes of community-pharmacy. A reason from stage 1.1 may be that in addition to the accumulation of non-transferrable professional knowledge, skills and abilities in independent/small-chain pharmacists, the younger pharmacists in large-multiples may also have university debt due to tuition fees and therefore may feel unable to change professions so soon (chapter 6). The prospect of further study, reported in stage 1.1, also was found to act as a deterrent to leaving the

profession as did the potential loss of income, particularly with no guarantee that subsequent income would be commensurate (chapter 6). This may be particularly the case for more experienced large-multiple pharmacists who have achieved senior hierarchical position in their organisations with the associated benefits and status.

- HQ4.04   A stronger relationship between affective-professional commitment and professional-withdrawal behaviour in independent/small-chain compared to large-multiple pharmacists.

There was no support for HQ4.04 from stage 2 as the multivariate structural models for independent/small-chain pharmacists and large-multiple pharmacists illustrated that affective-professional commitment predicted professional-withdrawal behaviour with similar strength relationships. This was replicated in the correlational analysis which revealed similarly strong negative correlations between affective-professional commitment and professional-withdrawal behaviours for both independent/small-chain pharmacists and large-multiple pharmacists (chapter 9). In addition pharmacy size was not found to be a significant predictor in the fully-adjusted linear-regression model predicting professional-withdrawal behaviour. One reason was for this was demonstrated in stage 1.1, as the changes to the practice of community pharmacy from what community pharmacists expected to the reality of the role, was found to both be associated with the decrease in affective-professional commitment and the increase in professional-withdrawal behaviour regardless of pharmacy-size (chapter 6).

- HQ4.05   A stronger relationship between affective-organisational commitment and organisational and sector-withdrawal behaviour in Independent/small-chain compared to large-multiple pharmacists.

There was marginal support for HQ4.05, as whilst there was some correlational evidence (chapter 9) that independent/small-chain pharmacists had marginally stronger relationships between affective-organisational commitment and both organisational and sector-withdrawal behaviours than in large-multiple pharmacists, neither of the structural models replicated these relationships as significant predictors for both outcomes (chapter 10). Again this was also found to be the case in the fully-adjusted

linear-regression models, as affective-organisational commitment failed to predict sector-withdrawal behaviour, and in neither of the models was pharmacy-size found to be a significant predictor (chapter 9). Equally, there was no support for HQ4.05 in stage 1.1, as whilst there was found to be strong support for the importance of affective-organisational commitment, more so in organisational-withdrawal behaviours (i.e. if a pharmacist is happy with the job-role in the organisation, less willing to leave) than sector-withdrawal behaviours (i.e. less chance to use full range of pharmacy knowledge skills and abilities in community-sector, so more willing to leave), there was no difference reported between independent/small-chain pharmacists and large-multiple pharmacists (chapter 6).

- HQ4.06   In independent/small-chain pharmacists, affective and normative-organisational commitment along with affective-professional commitment would have similar influences on the work-performance behaviours, which would be stronger than those in large-multiple pharmacists.

No support was found for HQ4.06 in stage 2, despite some support from stage 1.1. For instance stage 1.1 revealed that community pharmacists who were affective-professionally committed would be more likely to exhibit wiliness to engage in work-performance which may not be remunerated but would benefit patients (chapter 6). Similarly, affective organisational commitment was shown, in stage 1.1, to increase willingness to engage in extra-role behaviour, particularly where there was a perceived alignment between professional and organisational values and goals (chapter 6). In the same vein, stage 1.1, also illustrated that normative-organisational commitment led to greater potential engagement in extra-role behaviour, where there was a perceived obligation towards colleagues/staff and the local community population (chapter 6). However, stage 2 analyses were unable to find these relationships. In the structural-model in independent/small-chain pharmacists, only normative-organisational commitment was found to relate to extra-role behaviour-individual, whereas in the structural-model in large-multiple pharmacists only normative-organisational commitment was found to predict extra-role behaviour-organisation (chapter 10).

The full-adjusted linear models also were unable to find predictive relationships which were similar for affective and normative-organisational commitment along with

affective-professional commitment (chapter 9). However, affective-professional commitment was consistently found to be a predictor, although pharmacy-size was not found to be a predictor of work-performance (chapter 9). Equally, these relationships were also not evidenced in the correlational analysis in independent/small-chain pharmacists or large-multiple pharmacists (chapter 9). One reason for this may be the substantial number of locum pharmacists that practice in independent/small-chain pharmacies compared to large-multiple pharmacies, as they have been found to exhibit significantly less affective and normative-organisational commitment compared to non-locums (chapter 7). Another reason may also include the lack of significant difference found between job-roles for affective-professional commitment (chapter 9).

11.3.   Implications for the measurement of commitment

Chapter 8 undertook detailed psychometric analyses of the measurement of the constructs following on from their qualitative examination in stage 1.2. It found that, in their original validated forms the measurement of the TCM scales did not represent adequate fit following confirmatory factor analysis, such that their subsequent use in the structural models in chapter 10 would not have instilled confidence in the results of those models. Alternative factors structures were tested based upon the TCM literature and the findings from stage 1. This led to the use of the four-factor model of organisational TCM instead of the three-factor structure in which continuance-organisational commitment was split into two separate factors of high-sacrifice and low-alternative organisational commitment, which provided much better fit. However, fit was still weak overall, therefore based upon the advice of Loehlin[361], Kline[362], Shumacker and Lomax[462],Hair and Anderson[414] a number of iterative exploratory factor analyses were performed which allowed for principled and conservative modifications based upon a-priori TCM theory and the findings of stage 1, as recommended by Stanton[343] and colleagues. These included the correlating of error terms between indicators and the omission of items of the scale, where there was strong evidence of poor factor-loading, or multiple-loadings on other latent-factors, providing that such amendments did not reduce the content coverage of the remaining items on the underlying construct and were theoretically and contextually justified[343, 463].

This method of improving construct validity has been used in work-related commitment research previously[175,463,464], whilst truncating to reduce survey size has been practiced extensively, most notably using the nine-item Organisational Commitment Questionnaire[121]. Significantly, unlike the systematic theory and context driven amendments detailed in chapter 8, truncating has been used previously in TCM research by using only the three most strongly loading items per facet of the TCM to reduce the size of the survey[10,175]. However, in chapter 8, to provide additional rigour and validity to the amended measurement scales the research sample was randomly split into two samples prior to any changes, with the first sample used to make any theoretically justified and contextually appropriate amendments to the measurement scales and the second sample used to replicate and validate the amendments in an independent sample[361,362,408,414,462]. Moreover, the use of bootstrapped robust standard errors and model based imputations of the missing data further bolstered the strength of these findings. Hence, as the factor structures of the scales exhibited good fit in the second sample, it may be argued that the amended scales were valid for use with community pharmacists in GB, and therefore there may be greater confidence in the results of the subsequent models than there would have been with the original scales. Indeed, future commitment research using the TCM in community pharmacy in GB would arguably also benefit from these shorter amended scales needing less time to complete as well as saving space on the survey.

11.4.   Implications of the findings

Whilst it was found that affective-professional commitment had the largest influence on the professional-withdrawal behaviours, continuance-professional commitment and normative-organisational commitment also made unique contributions to the reduction of professional-withdrawal behaviours in community-pharmacist in general; as did normative-professional commitment in chapter 10. Whereas the levels of affective-professional commitment and continuance-professional commitment are both similarly high, levels of normative-professional commitment are significantly lower and normative-organisational commitment is the lowest level of all the facets of TCM in community-pharmacists in general. This has implication as both normative-professional and organisational commitments are more influential than continuance-professional

commitment in reducing professional-withdrawal behaviour in chapters 10 and 9 respectively. One reason for this is that pharmacists with young dependents display more continuance-professional commitment than pharmacists with no dependents. However, community-pharmacists over 50 years of age have significantly higher levels of normative-organisational commitment compared to new community-pharmacists. Independent/small-chain community-pharmacists exhibited significantly higher levels of normative-organisational commitment than large-multiple community-pharmacists. Strikingly, male pharmacists were found to exhibit significantly higher levels of professional-withdrawal behaviours and significantly lower levels of affective-professional commitment compared to females. Male community-pharmacists were also found to be more likely to be older, the main-breadwinner, pharmacy owners, and work longer hours than female community-pharmacists. Furthermore a manager was less likely to leave the profession than an owner and affective-organisational commitment influenced professional-withdrawal behaviour negatively in large-multiple pharmacists (chapter 10).

Affective-organisational commitment was almost three time more influential than affective-professional commitment on reducing organisational-withdrawal behaviour, and twice as influential as normative-organisational commitment in community-pharmacists in general. Affective-professional commitment was found to be significantly higher in level than affective-organisational commitment with normative-organisational commitment demonstrating the lowest level out of all the TCM facets. Yet normative-organisational commitment is more influential of organisational-withdrawal behaviour than affective-professional commitment. Moreover being a relief or second pharmacists who are predominantly female pharmacists, part-time and practicing in large-multiples; are less likely to organisationally-withdraw. Interestingly, whilst female pharmacists reveal significantly more affective-professional commitment, pharmacists working in large-multiples report significantly less affective-organisational commitment than those practicing in independents/small-chain pharmacies and they are more likely to organisationally withdraw as well. Affective-professional commitment and normative-organisational commitment were also equally important in reducing sector-withdrawal behaviours. Moreover compared to new community-pharmacists, community-pharmacists with over ten years' experience in community-sector were less likely to leave community-pharmacy than those whom were new to the sector. This was

found to be more influential than affective-professional commitment and normative-organisational commitment.

Affective-organisational commitment is marginally more influential in decreasing reduction-in-hours withdrawal behaviour than affective-professional commitment and twice as influential at decreasing reduction-in-hours as low-alternative organisational behaviour. Strikingly high-sacrifice is almost as influential as affective-professional commitment but increases reduction-in-hours withdrawal behaviours, with pharmacists in their 30s more likely to exhibit high-sacrifice organisational commitment than pharmacists nearing retirement age. Moreover, community-pharmacists working full-time or excessive hours are more likely to experience high-sacrifice organisational commitment, which may precipitate a reduction in hours-withdrawal behaviour. Having old dependents would also increase reduction-in-hours withdrawal behaviour, with female community-pharmacists more likely to be caring for older dependents than male pharmacists in GB. This said males are far more likely to be main-breadwinners and therefore significantly more likely to exhibit reduction in hours withdrawal behaviours. One reason for predominantly female relief and second pharmacists not to reduce their hours was that they were already more likely to be working part-time.

Both affective-professional commitment and organisational-commitment have similar strengthen positive influence on in-role behaviour. Independent/small-chain pharmacists exhibited significantly higher levels of affective-organisational commitment than large-multiple pharmacists. Interestingly, locum community-pharmacists reported significantly higher levels of in-role behaviour than non-locums. However being female also increased the chances of greater engagement of in-role behaviour, as female community-pharmacist hold significantly higher levels of affective-professional commitment than male community-pharmacists. Being female is also more influential than affective and continuance-professional commitment on extra-role behaviour-individual. An experienced community pharmacist is more likely to be in senior positions with a wealth of experience and is reported to be more willing to help work colleagues, beyond their job-description. Finally, affective-professional commitment was also more influential than affective-organisational commitment, continuance-professional commitment and low-alternative organisational commitment all of which were positively predictive of extra-role behaviour-organisation. Interestingly, a

community-pharmacist was more likely to relate higher levels of extra-role behaviour-organisation when near end of their career than when younger.

The implications of the results, taken together, highlight the importance of the normative facets of the TCM of both the profession and organisation on different withdrawal-behaviours, which goes beyond affective commitment. It also reveals the potentially less positive and yet more prevalent influential impact of the continuance forms of commitment namely continuance-professional commitment and high-sacrifice and low-alternative organisational commitment beyond the affective facets of commitment in community-pharmacists in GB. These implications together with the rest of this chapter highlight the important need to promote the maintenance of the levels of the affective facets, promote increases in levels of the normative facets and reduce the levels of the continuance facets of the professional and organisational TCM in community pharmacy in GB.

11.4.1 Recommendations for the pharmacy profession.

Affective professional and normative professional commitment were found to be the more positive of the facets of professional TCM in community-pharmacists in GB, with affective-professional commitment being the more influential in both chapter 9 and chapter 10, whilst the value of normative-professional commitment being revealed mainly in chapter 10. Yet whilst levels of affective-professional commitment have been found to be comparatively high in community-pharmacy similarly to continuance-professional commitment, levels of normative-professional commitment have been significantly lower. This is particularly salient for male community pharmacists, and those with young dependents (chapter 9). Therefore, the following are some of ways in which affective-professional commitment and normative-professional commitment may be developed and maintained to guard against withdrawal behaviours and promote work-performance behaviours based upon the findings of this programme of research:

- Fostering shared values and goals within the pharmacy profession: Indeed, a number of participants from stage one reported that where a community-pharmacist felt a sense of shared values and goals with the profession, greater levels of affective-professional commitment may be developed. This was consistent with the TCM detailed by Meyer and colleagues[9,41,122], and was

viewed as salient to promote through such appropriate avenues as training, conferences and workshops.

- <u>Opportunities for skill usage would positively affect the profession of pharmacy</u>: Equally, the opportunity for skill usage was also reported in stage one as a potentially significant contributor to the development of affective-professional commitment in the community-pharmacy context. This was partially due to the satisfaction and fulfilment derived from skill utilisation; being given the opportunity to exercise their knowledge skills and abilities[84-87,225,465].

- <u>Opportunities to engage in skill development where desired</u>: Related to the above was also the opportunity for community-pharmacists to expand their knowledge and develop new skills which they would then be actually able to implement in their practice[62,77,84-87]. Previous research suggested that the development of new skills and knowledge would only lead to the development of affective-professional commitment through personal involvement, where participation was volitional[62].

- <u>Opportunities to use personal control and professional decision latitude</u>: Linked to the above was the perception of a community-pharmacist's personal volition or control over practice, as a competent and qualified professional[32,69,458,466-470]. Decision latitude or opportunities to exercise autonomy, were reported in stage one to be associated with affective-professional commitment. Previous research suggested that such personal control and autonomy depended very much upon whether the community-pharmacist was an independent contractor, locum or an employee[458,469,470]. If the latter, then the type of line management style and emphasis of the employer was also salient[471], along with the community-pharmacist's experience of the power balance and relationship with the local medical general practitioners[112].

- <u>Reduce excessive paperwork/bureaucracy</u>: Too much mundane, and perceived unnecessary and excessive paperwork was reported in stage one as reducing affective-professional commitment and they acted as a barrier to the development of further affective-professional commitment. Excessive paper work would also contribute further to the perception of increasing work intensification leading to greater risks of reduced affective-professional commitment [31-33,64 66,225,461,472].

- Reduce and drop unworkable pieces of legislation and regulations which hinder the practice of community-pharmacy: Changes to pharmacy related legislation such as the introduction of the Responsible Pharmacists legislation and the implementation of the standard operating procedures[58,92], have been reported to both erode perception of control, and burden community-pharmacists with what are considered to be impractical and unworkable pieces of administration, which would thereby reduce affective-professional commitment.

- Reconsider introducing changes to the profession unless absolutely required: Perceptions of externally imposed, unconsented and non-consulted significant change were also found to reduce affective-professional commitment, according to stage one. This was found to be the case for changes to the profession such as the splitting of the Royal Pharmaceutical Society of Great Britain into the Royal Pharmaceutical Society and the General Pharmaceutical Council[473]. Other such changes included the relaxing of the control of entry legislation related to the opening of new community-pharmacies[44,51], (which was found to particularly effect independent contractors and small-chain community-pharmacies), and the introduction of compulsory continued professional development[45, 474]. Such levels of change meant that some community-pharmacists were cautious about what to expect in the future[459], leading potentially to low environmental clarity[227,228,459] and poor subjective wellbeing[33,64,66,461,472].

- Provide pharmacy students with realistic representations of practice and realistic possibility of employment within the different sectors of pharmacy: Perception of being stuck in the profession of pharmacy have been argued to have been developed in part as a result of the miss-communication of the realities of practice[69,475]. Many pharmacists feel that such a large investment in pharmacy is too difficult to just leave and so develop a continuance form of professional commitment, which may have implications for standards of practice.

- Greater consistency of the role of a community-pharmacist: lack of role clarity has been found to have reduced perceived obligation to the role of community-pharmacy. Increasingly, the role of community-pharmacists is not consistent from one part of the GB to the next [459].

11.4.2 Recommendation for community-pharmacy organisations

Affective-organisational commitment and normative-organisational commitment were found to be highly influential in both chapters 9 and 10. However, levels of both were far lower than continuance-professional commitment in community-pharmacists in GB, with the level of normative-organisational commitment far lower than any other facet of the TCM in community pharmacists in GB. This is salient for community pharmacists who are more likely to be in their 30s, practicing full-time and in a large-multiple pharmacy (Chapter 9). Therefore the following are some of ways in which affective-organisational commitment and normative-organisational commitment may be developed and maintained based upon the findings of this programme of research:

- Foster the alignment of organisational goals with professional goals: Stage one reported that Affective-organisational commitment was found to develop when the values and goals of the organisation and the profession are aligned[32,154,468]. This was viewed to be simpler to achieve for example where a pharmacist was employed in an organisation whose major focus was community-pharmacy[476]. Moreover, fostering this would guard against continuance-organisational commitment, in which prior research suggested that individual's would only engage in the mere minimum required to maintain membership of the organisation[41].

- Reduce misalignment between the organisational and professional goals: This misalignment could potentially lead to the reduction of Affective-organisational commitment [154,468,477]. Such clashes between the organisational and professional values and goals were viewed as resulting in a dilemma, which would subsequently reduce the perception of shared values and thereby reduce the potential maintenance of Affective-organisational commitment [154,468,478].

- Provide clear career progression in community-pharmacy: Stage one reported that the development of affective-professional commitment also reflected a community-pharmacist's positive professional career outlook inside the employing organisation[32,69,154,468]. Professional objectives, development and milestones should be accommodated and supported to be achieved by the organisation[154,468,471]. This was thought to enhance the perception of shared values, elevate the relevance of the organisation to the community-pharmacist and prompt further personal involvement in the organisation[154,468]; all of which

were thought to contribute to the development of Affective-organisational commitment.

- Increase organisational support: Normative-organisational commitment was found to be predictive of extra-role behaviours towards the individual in the Independent/small-chains sample and extra-role behaviour towards the organisation in the Large-multiple sample[28,154,460,476,479]. The development of normative-organisational commitment was found in stage one to be a function of reciprocity for a perceived supportive organisation[28,154,460,476,479]. Such perceptions of support were thought to inform the social exchange and thereby the psychological contract, leading to an assessment of reciprocity required to rebalance the social exchange[28, 154,460,476,479,480].

11.5.   Limitations of this research programme

Despite a number of cogent explanations having been given in this chapter for the results discussed in this chapter, other possible explanation for some of these results may be possibly related with the potential limitations outlined and following on, in this section. This may be viewed as the case, in spite of the identification of limitations as detailed in chapters five and seven followed by the subsequent allocation of strategies to mitigate any potential adverse impact, nonetheless a number of limitations still remained. For instance one major limitation of the research programme was the lack constructs found in work related commitment's nomological network which were adjusted for in the analyses. However a number of socio-demographic variables were adjusted for in chapter 9 in the univariate regression-models, many of which had been found to be significantly related covariates in previous research[38,212].

Another of the major limitations of the present research programme was the collection of cross-section survey data in stage two. With this form of data causality is far more problematic to infer, than is the case if longitudinal data had been available[408]. The latter requires considerably more resources, planning, and time then was possible within the confines of this programme of research[287,408]. Such a design however, would have allowed for a greater degree of complexity and an assessment of commitment and its impact over a period of time[287,408]. Additionally latent growth modelling may be used

with longitudinal data, to assess change in the different forms of commitment over a period of time, whilst latent profile modelling may be used with cross-sectional data[481].

Also considered a potential limitation was the response rate and level of participation in two of the three studies which contributed to this programme of research[287]. This resulted in only two focus-groups being conducted in stage 1.1 and a low response rate of 29.02% in stage 2. This meant that the focus-group contingency plan was enacted, whereby the focus-group data was supplemented by the interview data collected within the same time period. The contingency plan was required despite robust and concerted promotional activities as detailed in chapter seven. In addition, the generalizability of the data collected in stage 1 is limited owing to the largely purposive sampling techniques employed, coupled with a small overall sample size[286,298,300]. However, as the purpose of this stage was largely qualitative and not quantitative, a lack of generalizability does not represent a large scale concern[280,297,345].

Similarly, also considered a potential limitation, despite a concerted effort to promote the survey study, the details of which were reported in chapter seven, was a poor response rate. This means that the data may be limited in their generalizability and in need of replication[408]. The reason for this was that the low response rate may lead to sampling bias[408]. Despite this the sample size was large enough to accommodate the analyses adequately[346,347,349,352-354,356-358,408] (chapter 7), and the descriptive analyses found the proxy non-respondents to not differ significantly in levels of professional and organisational TCM facets in non-respondents compared to respondents in community pharmacists in GB (chapter 9).

Another potential limitation may have been the use of self-report data to measure each of the constructs, the merits, rationale and appropriateness of which have been previously discussed in chapter 4. It has been found in prior research, to potentially lead to common method bias in which correlations between the constructs may have become artificially inflated as an artefact of the method of measurement of the construct, and thereby distort the analysis[378,415-420]. However, chapter 8 demonstrated through the use of the common latent variable test that the common method bias would have had only a minimal impact on the analyses[378,415-420]. An inspection of the correlations of the constructs also did not provide evidence of any spurious or unusual correlation not

found in previous research[482]. Some reasons for this may have been due to the differing likert scales used in the self-report scales, in terms of both size and polar dimensionality[287]. Moreover, reverse worded items were used to guard against agreement acquiescence with the scales, as did the use of concept opposite items for acceptance acquiescence[175]. Likewise, social desirability was another potential limitation that could be argued to effect the completion of either of the studies. However, the strictest confidentiality was repeatedly assured in all of the three studies, with all data anonymised prior to analyses.

Some of the potential limitations highlighted above were also assessed during the examination of construct validation using cognitive-interviews (See chapters six and seven), in terms of the use of closed questions, the survey layout, the survey length, use of reversed items, use of different likert scales, along with the construct validity of the measurement for the constructs[293,294,318,319,324,330]. To increase participation the use of both face-to-face and telephone interviews were used, with analyses based largely upon audio recordings and transcripts[318]. Previous research suggested that there was no shortcoming between analysis based upon verbal cues, etc. and those based upon audio recordings[318]. This said the validity of cognitive-interview analyses have been questioned when largely unsystematic analysis have been used rendering descriptions of such analysis as akin to an art form[318]. Therefore, a standardised and widely advocated method of analyses was used to assess construct validity, coupled with the use of a variety of probing methods and questions, standardised topic guides, data capture forms, participation instructions and researcher training, and researcher consistency[318,319,321,339]. To further the validity of the method, member-checking was carried out with a small proportion of respondents[281,286, 297,300].

In addition, the use of well validated and widely used measurement scales for the assessment of the constructs also may be argued to contribute to the robustness of the data[408]. However, construct validity has often been recommended to be triangulated over a number of methods as performed in this programme of research[281,408,483,484]. To this end confirmatory factor analysis (CFA) was used to assess construct validity[349,370,411,485].

Structural equation modelling[362,363,374,411,421,433,462,486-489] was used to analyse construct validity and the hypothesised models (See chapters 9 and 10) in the respondent data, however a number of potential limitations were identified. Firstly, there was a significant amount of missing data which may have potentially distorted the analyses if all affected cases were omitted using listwise deletion. Multiple imputations were used to deal with the missing data[354,375,409,412,490-494] (see chapters 6 and 8). However, these posed practical limitations to the analysis such as having to work with five individual datasets with varyingly imputed data prior to pooling the results in order to mimic the uncertainty caused by the missing data[409,410,412,413,433,495]. This required the implementation of a number of formulas to correctly pool the various results[409,410,412,413,433,495]. However, to date no satisfactory procedures have been developed in the analysis software that were available to the researcher to pool the fit statistics[494]. Therefore, what has been termed as naive pooling techniques were used to display the analysis, which took the form of reporting the median averaged fit statistics along with its range[409,410] (see chapter 6).

A further potential limitation was the violation of multivariate normality within the datasets[408,411]. As multiple imputations had been used it was considered to be inappropriate to treat each of the datasets with individual transformations[408]. Therefore, each of the datasets was bootstrapped in order to provide bootstrapped standard errors with which to interpret the results[411,431-435,437]. Additionally it was considered that the violation of multivariate normality may not have as big a distorting impact upon the analysis owing to the sample sizes involved[408]. This said, the asymptotically distribution free estimation method, was not used instead of the maximum likelihood method owing to its less than optimum performance when used with a less than very large sample[379].

In general, some of the fit statistics appeared at times to only provide borderline acceptable examples of fit in the data. However, this was consistent with prior commitment research, which also found such levels of goodness of fit when using the selected measures[174,191, 197,204,223,496-499]. These measures were subsequently amended to improve fit and construct validity using an iterative process recommended by Loehlin[361] as detailed in (chapters 6 and 9). The response sample was split into two samples as recommended by Loehlin[361] and amendments to construct validity carried

out firstly in the first half of the sample and then the outcomes tested in the second sample to assess whether the amendments made would be robust and enduring across samples, or just relevant to the original half sample[361-363,446]. This provided more rigorous evidence of the replication of the amendments made to improve construct validity[361-363,446].

In the hypothesis testing analysis the items which made up the constructs were subjected to parcelling techniques in order to improve fit[347,440] (see chapter 6 and 8). However, this has at times been thought of as controversial as it may be argued to mask the underlying properties of the constructs, which would be problematic during construct validation[411,439-441]. An alternative to parcelling which has been used is truncating the measures by reducing the number of indicators[463]. One way this has been achieved has been to retain only the top three most reliable indicators for each scale[175]. However, doing so runs the risk of sacrificing the range of content coverage of the measures[175,463]. Similarly, the use of single item measures even when they are composite measures of a number of scale items may be prone to the aforementioned restriction in range[361,362,411,463]. Therefore, the present research opted to use parcelling only for assessing the hypothesised models[411,439-441].

11.6.   Recommendations for further research

There are a number of ways in which the research conducted as a part of this PhD programme may be extended further, should the opportunities arise:

- Affective-professional commitment was found to be one of the more prevalent facets of commitment in community-pharmacy, regardless of subgroup. This research also hinted at the prominent role of personal control in contributing to Affective-professional commitment. Therefore future research may examine this relationship further, perhaps through the examination of constructs such as the internal locus of control (greater control over environment by individual) and external locus of control (i.e. greater control over individual by environment), or similar constructs[500,501].

- The impact of the changing role of a community-pharmacist using the TCM may be worth exploring further. This research programme indicates tentatively that skill utilisation is associated with elevated levels of affective-professional commitment, whilst too much change and a lack of role clarity may be associated with an erosion of normative-professional commitment. Therefore future research should focus on the effect of skill utilisation where this may be too low, and where this may lead to excessive role ambiguity on professional TCM.

- Similar to the two previous points, the issue of workload and perceived work intensification may be of research interest. The present research programme intimated that excessive bureaucracy may contribute to the reduction of affective-professional commitment. This coupled with the perception of changing and expanding job-roles may lead to the perception of workload intensification.

- Another potentially fruitful avenue for future research may be examining the different forms of the TCM through the assessment of the community-pharmacists' psychological contract[75,166,203] with their profession. Similar to TCM the psychological contract is thought to be built over a period of time[75,166,203]. Therefore, the promises made and perceived obligations of the profession towards the community-pharmacist from even prior to pharmacy training, along with expectations and obligations kept by the profession, coupled with perceived discrepancies with expectations, leading to breaches and violations, may all be viewed as influencing not only the facets of the TCM developed but also the magnitudes of these facets[75,166,203]. This is particularly salient owing to the predictive influence found in this programme of research of both normative and continuance-facets of the TCM, for which the examination of the psychological contract may provide crucial insights[203].

- Affective-organisational commitment was found to be just one of the facets to predict organisational-withdrawal behaviour. However, future research may wish to ascertain how, if at all, commitment to the individual community-

pharmacy branch/shop may influence commitment to the organisation as a whole, and how they may both impact on organisational-withdrawal. This would be particularly relevant in employee community-pharmacists employed in medium or large-multiple community (including supermarkets) pharmacies. Equally, commitment to other foci of interest may include work colleagues and the immediate community-pharmacy team, as well as the local community. The effects of such constructs upon additional job-performance constructs such as organisational citizenship and counterproductive work behaviours may also provide additional insights into this[235,254,502,503].

- Indeed as increasing numbers of community-pharmacists are employed in large corporate multiple pharmacies, another interesting avenue to pursue would be to assess the extent to which orientation towards the business side of community-pharmacy and orientation towards the health side of community-pharmacy influences commitment towards both the organisation and profession. It was found in the present research that a positive career outlook in a community-pharmacy organisation may have appeared to contribute positively towards affective-organisational commitment. Therefore, an exploration of the effect of community-pharmacists at different positions in such community-pharmacy organisations would be worth considering in future research.

- The development of organisational TCM in community-pharmacy would be worth considering for future research. Here the use of constructs such as the psychological contract may be of benefit in understanding how the different forms of commitment may develop and change[75,166,203]. Similarly, constructs such as organisational trust and organisational justice may also be assessed in relation to the organisation's interaction with individual employee community-pharmacists [170]. Such concepts have also been found to be pertinent in relation to episodes of organisational change[170], as increasingly the number of different organisations providing community-pharmacy services decrease, owing to mergers and acquisitions[51-53].

- The development and maintenance of professional and organisational TCM over a period of time and how this influences such outcomes such as job

performance, withdrawal behaviours, etc. would also be an important and logical extension from this research.

- Finally, therefore, future research should also consider utilising alternative study designs and construct measurement strategies such as:

  - o The use of the measurement scales modified and validated for community pharmacists in GB should be used in subsequent research to further assess these scales in different community pharmacy samples in GB.
  - o The use of multiple controls such as job satisfaction, perceived organisational support, psychological contract, organisational identity.
  - o The use of multiple sources to measure commitment (e.g. managers, customers, pharmacy technicians, etc.),
  - o the use of commitment profiles which measure every conceivable variation of proposed foci (i.e. professional and organisation) and forms of commitment[481],
  - o the use of latent profile analyses to also assess different commitment profiles across different populations[481],
  - o the use of measurement invariance to assess community-pharmacy subpopulations both together and separately, simultaneously[481],
  - o the use of longitudinal study design utilising latent growth curve modelling to assess change over a period of time[481],
  - o the use of latent class growth modelling to assess commitment profiles over time utilising longitudinal designs[481],
  - o the use of ethnography to assess the natural history of commitment in community-pharmacy[504]
  - o and finally, the use of repertory grid techniques to understand the community-pharmacists perceptions of professional and organisational commitment[504].

11.7.   Concluding remarks

In all, this programme of research has examined the professional and organisational TCM in a population of community-pharmacists in GB, how the different facets of the TCM impact upon work-performance and withdrawal behaviours of these community-pharmacists. Participation has been sought and received from a cross-section of the community-pharmacy population in GB. Different subgroups of community-pharmacists appear to have different experiences of commitment and this has been highlighted by the programme of research.

The results suggest that the different facets of the TCM provided a greater and more nuanced understanding of commitment relating to both the profession and organisation, beyond that of the affective facets of commitment alone. Indeed a variety of combinations of predictors were found to be associated with the withdrawal behaviours and the work performance behaviours. However, the levels of the different facets of TCM did not necessarily reflect the strength of relationship found between the TCM facets and the aforementioned outcome variables. Indeed the levels of the different TCM facets in community pharmacists in GB fluctuated between subgroups, such as female community pharmacists exhibiting significantly higher levels of affective professional commitment and in-role behaviour and significantly lower levels of professional-withdrawal behaviour and reduction-in hours withdrawal behaviour compared to male community-pharmacists, whereas independent/small-chain pharmacists exhibited significantly higher levels of affective and normative organisational commitment and significantly lower levels of organisational withdrawal behaviours compared to large-multiple pharmacists. However the relative levels between facets within the same subgroup population remained relatively stable.

This programme of research can be argued to have been conducted at the right time owing to the huge amount of change that has occurred during the period of the research programme (see section 2.1) and indeed the proposed changes that have been put forward regarding clinical commissioning consortia in the Health and Social Care Act 2012, announced by the current government. Now, more than ever before community-pharmacists are expected to step forward and take on more roles and provide more services[33,76,86,505] whilst their traditional roles, such as dispensing, etc., have increased

to record volumes[94,263]. Therefore, an appropriately committed community-pharmacy workforce is required in GB for both the profession and the employing organisation to thrive further.

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Appendix 1: Glossary of Terms & abbreviation

Absenteeism – the continuous pattern of absence from work.

Academic Pharmacists – pharmacists working in teaching and research at universities.

Affective commitment – a wish and/or desire to remain with the target of the commitment.

Additive models – the effect of the dimensions of the model combined are equal to the sum of the individual dimensions.

All party pharmacy Group - APPG – a group of UK members of parliament and peers who have an interest in pharmacy and healthcare related issues.

Bias – research term, a systematic factor that introduces error, leading to an unfair outcome. It is also a tendency towards a particular point or end.

Care home support – Enhanced services from community pharmacists provided in addition to essential dispensing services. Advice related to safety and effectiveness is given regarding the storage, supply, administration and disposal of medicines and appliances to both staff and patients. In addition services are also provided relating to appropriate record keeping and overall management.

Career orientation – A stable pattern of job related preferences over the course of the individual's working life.

Causality – in relation to research it's the principle of cause and effect, whereby the cause is the required factor for the observable effect.

Centre for Pharmacy Workforce Studies – **CPWS** – an academic research centre focusing on pharmacy workforce issues.

Clinical governance – in relation to pharmacy this is a cohesive programme of quality management, through the propagation of quality improvement activities (e.g. CPD, clinical audits, evidence based practice, R&D, etc.), effective risk management, clear lines of responsibility/accountability for quality (i.e. clinical care), and mechanisms to rectify poor performance.

Clinical practice – this is pharmaceutical input in patient care.

Cognitive advisory role – **pharmaceutical care** – this is a role that consists of greater use of knowledge, skills and abilities, in an authoritative capacity.

Common method variance – **CMV** – this occurs when the data from the variables are collected in the same manner (i.e. all by self-report questionnaire). This can artificially inflate correlations between the variables.

Communality – this is related to structural equation modelling and concerns the extent of shared variance between the measured variable and its corresponding construct.

Community Pharmacy Contractual Framework – **CPCF** – the recently introduced community pharmacists contract which has changed the emphasis from a focus on dispensing activities to remuneration for other more advanced and enhanced services.

Community pharmacist – pharmacists who work in local pharmacies, on the high street, health centres and supermarkets, amongst other venues. They are the largest group of pharmacists registered in Great Britain.

Concordance issues – issues relating to patients taking ownership of their medicines management through the support and advice of pharmacists.

Confirmatory factor analysis – a form of multivariate analysis technique in which the pre-specified relationships of a model are tested.

Construct content domain – the variance that is explained by a particular construct (such as within a nomological network).

Construct validity – an assessment of the validity of a measure in relation to the extent that it captures the construct that it intended to measure.

Contamination – in this context relates to variability not associated with the construct

Contextual revalidation (scales) – the validation of pre validated measurement scale in an alternative context.

Continuing professional development – (CPD) – the continued improvement of knowledge, skills abilities, required to progress in a profession.

Continuance commitment – the need to remain with the target of the commitment as leaving is viewed as too costly, in terms of investments made in the target.

Correlation – this is linear relationship between two variables which is non-causal but is influenced by a third unknown variable.

Correlation matrix – correlations between all pairs of the data set illustrated in the form of a matrix.

Cross contamination – the introduction of variability of measurement in one or both construct that results in the apparent overlapping of content domain not associated (to that extent) with the two constructs.

Cross-sectional (survey) – this is a design of research whereby every variable is measured once only at the same or similar times.

Deficiency – variability in the construct which is not replicated by its measurement.

Department of Health – **DH** – a government department of Great Britain and Northern Ireland, responsible for health-related sector.

Dimensionality – the factor structure of the construct

Discretionary extra-role behaviour – this is behaviour that is within the gift of the individual which may not be rewarded by an explicit remunerations package, but is often desirable for the organisation/employer.

Dispensary – a place where medicines may be prepared and given out.

Divergent validity – also known as discriminant validity is often used with convergent validity. Divergent validity simply means that the construct maintains theoretically espoused relationships with other constructs which demonstrates its distinctiveness from those constructs.

Domestic responsibilities – these are responsibilities such as the care of dependents (children, elderly, or those who lack capacity), or running a house hold.

Embase – is a large bibliographic database consisting of over 22 million records since 1974, with an additional 1 million records added annually? It concentrates broadly on biomedical and pharmaceutical research, taken from an international collection of 7,500 peer-reviewed journals, spanning over 90 countries.

Entry regulation – these are regulations which govern the opening of new non-exempt pharmacies in Great Britain.

Estimation method – technique used to estimate the fit of the specified model in structural equation modelling.

Ethnicity – the ethnic origin of an individual

Ethnic-minority pharmacists – pharmacists registered by the RPSGB that are from ethnic origins that are non-white.

Exchange relationship – this is a relationship in which behaviour is contingent on perceptions that performance shall be reciprocated in proportionate behaviour by others in return.

Exploratory factor analysis- a techniques used to investigate the underlying structure of a set of observed variables

External validity – this is the extent to which the findings of a study are able to be generalised to a wider population

Factor structure – this is the underlying dimensions which accounts for and summarises the measured items within a construct

Financial year – this is in the UK the 12 month period between 1st April of one year and 31st March of the following year.

Focus-groups – this is an organised and facilitated group discussion in which the ideas, experiences, feelings and thoughts of individuals (particularly selected for the group) are discussed to gain a group view of a particular issue.

Free parameters – this is an estimated parameter that represents the specified relationship's strength.

Full clinical medical reviews – this is an enhanced service under the CPCF, in which a pharmacist engages in a more in depth review of a patient's medicines, in conjunction with the GP and the patient, particularly for those patients with long term illnesses that are salient to PCT priorities.

General Practitioners – **GP** – this is a medical practitioner who works in primary care general practice.

General Pharmaceutical Council – **GphC** – this is the new regulatory body for pharmacists in GB that shall take over from the RPSGB.

Goodness of fit Index – this is one of the ways to assess in structural equation modelling (such as confirmatory factor analysis) the extent to which the model fits the data collected.

Grey literature – this refers to literature that is difficult to access

Great Britain – **GB** – this consists of England, Scotland & Wales.

Health Promotion – this the provision of health care advice on appliances, medication, signposting, etc. by pharmacists with the aim of promoting health through various initiatives including smoking cessation, blood pressure management, obesity prevention and management.

Homogeneity of variance – this is an assumption that is often made by parametric tests in which a comparison of means shall be performed. It states that the groups being compared shall hold similar levels of variance.

Hospital pharmacists – pharmacists that are based in the pharmacy departments of hospitals and cater for the pharmacy related needs of patients in hospital in various roles, from attending ward rounds and direct patient contact, to dispensing medicines.

Human resources – **HR** – these are functional departments within organisations which are responsible for the recruitment, retention, development, pastoral management and welfare of employees within the organisation.

Independent pharmacies – single community pharmacy branches owned by the individual community pharmacist.

Independent pharmacist – **independent contractor** – a pharmacist who is an owner of a pharmacy

Indicator variables – **Measured variables** - this is an observed value (item) which is used to measure an underlying latent construct (as this cannot be directly measured, itself).

Industrial pharmacists – this is a pharmacist that works in the industrial sector, typically for a pharmaceutical company.

Interactional models – a model which consists as a combination of the interactions of its dimensional parts.

Internal consistency reliability analysis – this is a technique to establish the reliability of a scale or dimension, by examining whether the items that are purported to measure a particular construct (or dimension of a construct) exhibit similar ratings through the examination of their correlations.

Inter-item correlations – the correlations between the items in a scale of a construct or a dimension of a construct.

International Pharmaceutical Abstracts – **IPA** – is a bibliographic database originating from The American Society of Health-System Pharmacists in 1964. It has a strong focus on pharmacy practice with contribution taken from over 400 health related journals worldwide.

Job satisfaction – this is the extent to which an individual experiences happiness and contentment with the individual's job.

Job stress – this is the extent that an individual experiences distress, pressure and/or strain related to the individual's job.

Large-multiples (pharmacies) - consisted of large national and multinational organisations, often with diverse portfolios of business foci, of which community pharmacy would have been one; with above 50 to over 1000 community pharmacy branches

Latent variables – these are the manifestations of the constructs that are underlying and not directly observable (measureable) in structural equation modelling.

Locum (pharmacist) – this is a pharmacist that works in a pharmacy in a temporary capacity. This is often, when there is no regular pharmacist or the regular pharmacist is unable unavailable.

Maximum likelihood estimation – this is one of the most well-known methods of estimation used in structural equation modelling, in both exploratory and confirmatory models.

Measurement model – this is a form of structural equation modelling which provides the specifications of the constructs and therefore allows for the testing of construct validity.

Medicine use review – **MUR** – this is an advanced service of the CPCF. It is a review with the patient, using a structured patient interview paradigm, of existing medicines to establish that the medicines are being used safely, effectively, without adverse side-effects and that there are no issues relating to access of the medicines.

Medium-sized Multiples (pharmacies) – Small to medium enterprises often localised to particular areas, with community pharmacy being their primary business focus; containing between five and fifty pharmacy branches.

Medline – is a comprehensive biomedical bibliographic database provided by the National Library of Medicine in the United States of America. It consists of over 3,000 journals covering most aspects of medicine and allied health professions.

Mergers and acquisitions – these are the consolidation of organisations through either the purchase of one organisation by another organisation, or a more equitable combination of two organisations into one.

Minor aliments – this is an enhanced service offered in the CPCF, in which ailments such as athletes foot and head lice can be treated by pharmacists, paid for by the NHS.

Moral reciprocity – this is the perception of one's own obligations towards others owing to perceived fulfilment of promises and obligations by others.

Multiples (pharmacies) – these are several pharmacies that make up a single organisational entity.

National Health Service – **NHS** – this is the publically funded health system for England, Scotland, Wales and Northern Ireland (each of whom has their own slight variations).

National Health Service (NHS) contracts – in the context of community pharmacy these are agreements that are in place between the NHS and the community pharmacists, in which it is detailed, the services to be provided and their subsequent remunerations.

Nomological domain (network) – this is the natural network of the constructs in which their relationships towards each other may be examined.

Normative commitment – this is the perception of obligation to stay with the target of the commitment.

Occupational behaviour – this is behaviour related to a variety of factors such as perceptions, orientation, development, performance and engagement in an occupation/profession

Organisational behaviour – this is behaviour related to a variety of factors such as perceptions, orientation, development, performance and engagement in an organisation.

Organisational identification – this is the perception of identifying with an organisation.

Organisational citizenship behaviour – **OCB** – these are discretionary behaviours which are often of great benefit to the organisation, but are not rewarded explicitly by the organisation's remunerations systems. These behaviours can be categorised into five dimensions (142): Altruism (i.e. help other organisational colleagues for the good of the organisation); Conscientiousness (i.e. engaging in behaviour which goes beyond the minimum requirements such as working overtime without pay, etc.); Sportsmanship (i.e. suffering personal detriment for the benefit of the organisation, such as not complaining, etc.); Courtesy (i.e. prevent or facilitate resolution work-related problems between organisational colleagues or maintain the general atmosphere within the organisation); Civic duties (i.e. engaging in activities in order to maintain and improve the welfare of the organisation).

Overseas pharmacists – these are pharmacists who have qualified overseas, have come to GB and have registered with the RPSGB.

Path analysis – this is a technique used in structural equation modelling to establish the strengths of the pathways illustrated in path diagrams.

Parametric statistics – this is a group of statistics which maintain some basic assumptions about the data, as a result if those assumptions are not violated these statistics provide powerful analyses.

Patient group directions – this is an enhanced service of the CPCF, in which a pharmacists undertakes with a medical practitioner to provide guidance to other health professional regarding the supply and/or administration of particular prescription only medication for a particular group of patients. These other health professionals may then follow their own judgment in relation to treating such patients based on the guidance without having to refer the patients for a GP prescription.

Peer group – this is a group of individuals who have a common attribute of interest.

Performance – the engagement and/or completion of an activity or task.

Person-environment fit - this is the goodness of fit between the organisation and the individual, in relation to culture, expectations, ethos, etc.

Purposive sampling – is a sampling method whereby the participants are chosen based on a predetermined rationale. Final sampling size is determined ad-hoc.

Pharmaceutical Care – this refers to the provision of drug therapy responsibly that enables definite patient outcomes which contribute to a positive quality of life.

Pharmacist prescribers – they can be both independent pharmacists (that can prescribe a full range of medicines) and supplementary pharmacists (that can prescribe a limited range of medicines in collaboration with an independent prescriber). These pharmacists may be based in hospitals, primary care and the community.

Prescription interventions – this is the same as an MUR, except that it is initiated due to significant problems with the patient's medication.

Primary care pharmacists – these are pharmacists who are contracted by the local NHS PCT or SHA and are based in primary care (e.g. GP practices as practice pharmacists).

Primary care team – this consists of the health professionals that are based in primary care such as GPs, community nurses, primary care pharmacists, etc.

Primary care trust – **PCT** – this is the organisation which funds and manages the provision of primary care services.

Profile model – this is a model whereby an individual component part may be viewed as equal to the whole.

Pseudo R-squared – this is the closest statistic to R-squared in logistical regression, as there is no exact equivalent. It can be used with categorical data but is only useful when comparing the same data sample and model.

Psychinfo – is a bibliographic database of psychology related research which stretches back to 1806. It is provided by the American Psychological Association and currently consists of over 1,300 international peer-reviewed journals spanning over fifty different countries. In addition, other subject areas are also scanned for salient records and abstracts to be included in the database on a monthly basis.

Psychological contract – this is an unwritten contract removed from the employment contract, between the organisation and its employees, in which the employee perceives that promises and obligations are made by the organisation for which the employee will be obligated to reciprocate appropriately. This contract can take different forms, and is developed over a period of time; however, perceived violations of promises and obligations by the organisation may result in changes to the perceived contract. Similarly, changes can also occur should there be violations on the part of the employee.

Psychometrics – the measurement of psychological constructions and concepts.

Quantitative analyses – this is analyses relating to the measurement of quantity

Qualitative analysis – this is analyses relating to the determination of the nature of the data.

Registered pharmacists – this relates in this context to pharmacists who are registered with the RPSGB.

Reliability – this refers to the extent that a measurement of a scale will remain consistent over time without an intervention.

Repeat authorisations – this is an enhanced service and refers to the management and dispensing of NHS prescriptions (e.g. medicines and appliances) that are repeatable, in collaboration with both the prescriber and patient.

Response rate – This is typically the percentage of the research sample that responded.

Responsible pharmacists – this is the individual who will be responsible for the safe and secure running of a registered pharmacy on any day and at any time.

Revalidation – this refers to the requirement of GB pharmacists to undergo periodic assessments of their fitness to practice.

Role overload – this refers to when an individual perceives that their role is far too large for them to perform adequately.

Role variety – this refers to the variety of different tasks and activities that make up an individual's role

Royal Pharmaceutical Society of Greater Britain – **RPSGB** – this is the former regulator and still the professional body of registered pharmacists in GB.

Scopus – is a huge bibliographic database consisting of over 14,000 peer-reviewed journals from over 4000 publishers internationally. It covers a wide and extensive range of research topics spanning almost 46 years.

Second pharmacist – this refers to a pharmacist in the junior role within a pharmacy.

Section – sec – (abbreviated term used in this report)

Side-effects (medicines) – these are reactions to medicines that are unwanted

Signposting – this is an enhanced service offered under the CPCF, in which a pharmacist shall refer patients to other healthcare professionals, if the pharmacist is unable to treat them in the pharmacy.

Small-chain (pharmacies) – small localised organisations containing between two and five pharmacy branches.

Snowballing – this refers to a sampling technique whereby participants and other relevant contacts are used to garner further research participants, through their social networks.

Socialisation – this is the process whereby an individual learns the skills, knowledge, values, beliefs, social norms and modes of behaviour to fit in and function within a culture.

Socio-cultural – this corresponds with issues relating to both society and culture

Stop smoking services – this is an enhanced service offered by the CPCF and goes beyond the stop smoking health promotion offered in the essential services. This enhanced service provided by pharmacists includes, advice, additional support and nicotine replacement therapy where appropriate.

Standard error – this refers to the amount of the measurement of a scale that may due to chance (i.e. sampling error).

Standard operating procedures – **SOP** – these are operating protocols that are the responsibility of the responsible pharmacist and must be understood by all staff. They highlight the protocols and procedures that must be followed for the smooth and safe operation of all aspects of the pharmacy.

Strategic Health Authorities – **SHA** – they are responsible for the development of service, improvement of the standard and quality of healthcare, implementation of national priorities and general management of the NHS at a local strategic level.

Stratified sampling – this refers to a form of sampling whereby the population is split into a priori categories or 'strata'

Stratified random sampling – this is similar to stratified sampling except that the strata samples are then randomised prior to selection.

Structural barriers - this refers to barriers to individuals which are not explicit but occur as a by-product of organisational rules which are insensitive to the reality of some sections of society thereby effectively excluding them from advancement.

Structural equation modelling – this is a powerful, sophisticated and flexible multivariate analysis technique, which can be applied to various operations such as causal modelling, model testing, and structural exploration.

Structural model – this is a form of structural equation modelling which provides an interesting way of exploring the inter-relationships between the variables of the different constructs.

Supermarket pharmacies – Large national and multinational supermarket organisations in which provisions for a community pharmacy have also been made, in some stores.

Supervised administration of controlled drugs – this refers to the enhanced services offered under the CPCF by pharmacists. Here the pharmacists would supervise the appropriate, safe and effective administration, whilst providing the required support.

Technical dispensary (role) – this refers to the more technical nature of a pharmacist's role that corresponds with the dispensary.

The Three Component Model – TCM – this is the theoretical underpinning of the proposed research, which consists of three forms of commitment, Affective, Normative and Continuance. For greater detail please refer to chap. 3.

Turnover – this refers to the withdrawal of behaviour (e.g. quitting the organisation)

Type one errors – this refers to the probability of falsely rejecting a true hypothesis.

Type two errors – this refers to the probability of falsely accepting a false hypothesis.

United States of America – US or USA

Validation – this refers to the process of determining the validity of a scale.

Validity – this refers to the extent to which an instrument measures what it claims to measure.

Variance – this refers to the dispersion of a set of scores from a measurement instrument

Variance spread – this refers to the pattern and variability of the dispersion of a set of scores from a measurement instrument.

Web of Knowledge (ISI) – provides access to over 8,000 diverse peer-reviewed journals from Science Citation Index Expanded (1945 to date), Social Sciences Citation Index (1956 to date), Arts and Humanities Citation Index (1975 to date), Conference Proceedings - Science (1990 to date), and Conference Proceedings - Social Science and Humanities (1990 to date).

Work attitudes – these are attitudes related to the different aspects of an individual's work.

Work intensification – this refers to the perceptions that the amount of work to be carried out within the same timeframe has increased, thereby increasing the pressure to complete tasks with greater alacrity.

Workload – this refers to the amount of work related activities and tasks that an individual is expected to complete within a given timeframe.

Appendix 3.1 Categorisation of the five major foci of commitment

Categorisation of the five major foci of commitment according to Morrow in 1983[143]

Commitment Foci	Definitions
Value Focus	"Extent to which a person feels that personal worth results only from self-sacrificing work or occupational achievement" ([143] p.488)
Career Focus	"The importance of work and a career in one's total life" ([143] p.488)
Job focus	"1) Degree to which a person is identified psychologically with his work; degree to which work-performance affects self-esteem; 2) measures whether a respondent is job oriented, non-job oriented, or neutral" ([143] p.488)
Organisational focus	"Extent to which a person (a) has a strong desire to remain a member of the organization, (b) is willing to exert high levels of effort for the organization, (c) believes and accepts the values and goals of the organization" ([143] p.488)
Union Focus	"Extent to which a person (a) has a strong desire to remain a member of the union, (b) is willing to exert high levels of effort for the union, (c) belief in the objectives of organized labour". ([143] p.488)

Appendix 3.2: Commitment Measures

Commitment Scale Name	Number of scales and items	Author(s)
Job involvement Scale	20 item scale	Lodahl and Kejner (1965)
Job Involvement Scale	4 item scale	Lawler and Hall (1970)
Organizational Commitment Scale	4 item scale	Hrebiniak and Alutto (1972)
Organizational and Occupational Commitment Scale	Organisational commitment scale (8 items) Occupational commitment scale (8 items)	Alutto, Hrebiniak, and Ramon (1973)
Job Involvement Questionnaire	8 item scale	Kanungo (1982)
Work Involvement Questionnaire	6 item scale	Kanungo (1982)
Organisational Commitment Scales	Affective-organisational commitment (8 items), continuance-organisational commitment (8 items) and normative-organisational commitment (8 items)	Meyer and Allen (1991)
Group Commitment Measure	6 items	Randall and Cote (1991)
Work Commitment Questionnaire	9 items	Cohen (1993)
General Index of Work Commitment	11 items	Blau, Paul and John (1993)
Career Commitment Scale	Career identity scale (4 items), career resilience (4 items) and career planning (4 items)	Carson and Bedian (1994)
Normative Group Commitment Scale	Normative commitment to non-managerial employees (17 items) and normative commitment to managerial employees (17 items)	Becker, Randal and Riegel (1995)
Commitment Scales	Goal commitment (4 items), Membership (4 items) and People commitment (4 years)	Brown (1996)
Work Ethic Measure	Hard work (6 items), non-leisure (6 items), independence jobs (4 item) Asceticism (3 items)	Blau and Ryan (1997)
Group Commitment Measure	7 item scale	Ellemers, et al.(1998)
Occupational Entrenchment Scale	Emotional costs scale (2 items) investments scale (2 items) and Limited alternative scale (2 items)	Blau (2001)
Organisational Commitment Scale	4 items scale adapted from (Mowday et al 1982).	Yoon and Thye (2002)
Occupational commitment Scale	Affective occupational commitment scale (6 items scale), normative occupational commitment scale (6 items), accumulated costs occupational commitment scale (6 items) and limited alternatives occupational commitment scale (6 items)	Blau (2003)
Continuance Commitment Scales	Low-alternatives scale	Powell and Meyer (2004)

Commitment Scale Name	Number of scales and items	Author(s)
	(CC:LoAlt; 3 items) and high-sacrifice (CC:HiSac; 6 items)	
Side-bet Scales	Expectations of others scale (8 items), self-presentation concerns scale (5 items), impersonal bureaucratic arrangements scale (7 items), individual adjustments social position scale (4 items), non-work concerns scale (6 items) and satisfying conditions (5 items) and lack of alternatives (4 items)	Powell and Meyer (2004)
Organisational Commitment Questionnaire	15 items scale	Porter, Steers, Mowday, and Boulian (1974), Mowday, Porter and Steers, (1979; 1982)
Organisational Commitment Questionnaire (Short version)	9 items scale	Mowday, Porter and Steers, (1979)
Career Commitment Scale	6 items scale	Blau (1985; 1988)
TCM organisational commitment	Affective-organisational commitment (6 items), continuance-organisational commitment (6 items) and normative-organisational commitment (6 items)	Meyer and Allen (1993)
TCM professional commitment	Affective-professional commitment (6 items), continuance-professional commitment (6 items) and normative-professional commitment (6 items)	Meyer and Allen (1993)

Appendix 4.1 Stage 1.1 – preliminary validation focus-group study: research objectives

- Examine Organisational Commitment
o   Ascertain contextual appropriateness of Affective Commitment
o   Ascertain contextual appropriateness of Continuance Commitment
o   Ascertain contextual appropriateness of Normative Commitment
- Examine Professional Commitment
o   Ascertain contextual appropriateness of Affective Commitment
o   Ascertain contextual appropriateness of Continuance Commitment
o   Ascertain contextual appropriateness of Normative Commitment
- Examine appropriateness and applicability of In-role behaviour
- Examine appropriateness and applicability of Extra-role behaviour towards the individual
- Examine appropriateness and applicability of Extra-role behaviour towards the organisation
- Examine appropriateness and applicability of Professional Turnover
- Examine appropriateness and applicability of Organisational Turnover
- Examine appropriateness and applicability of Sector Turnover
- Examine appropriateness and applicability of Work Hours reduction

Appendix 4.2 Stage 1.2 – construct validation interview study: research objectives

- Examine Affective-organisational commitment items – Relevance & Validity
- Examine Continuance-organisational Commitment Items – Relevance & Validity
- Examine Normative-organisational Commitment Items – Relevance & Validity
- Examine Affective-professional Commitment Items – Relevance & Validity
- Examine Continuance-professional Commitment Items – Relevance & Validity
- Examine Normative-organisational Commitment Items – Relevance & Validity
- Examine Professional Turnover Items – Relevance & Validity
- Examine Organisational Turnover Items – Relevance & Validity
- Examine Sector Turnover Items – Relevance & Validity
- Examine Work Hours reduction Items – Relevance & Validity
- Examine In-role Behaviour Items – Relevance & Validity
- Examine Discretionary Extra-role Behaviour Items – Relevance & Validity

Appendix 4.3 Stage 2 – survey study: construct validity and hypotheses testing

Assessment of psychometric measurement quality indicators:

- Assess factorial validity of the professional commitment measures in community pharmacists in GB
- Assess factorial validity of the organisational commitment measures in community pharmacists in GB
- Assess factorial validity of the in-role behaviour measures in community pharmacists in GB
- Assess factorial validity of the extra-role behaviour towards the individual measures in community pharmacists in GB
- Assess factorial validity of the extra-role behaviour towards the organisation measures in community pharmacists in GB
- Assess factorial validity of the withdrawal behaviour measures in community pharmacists in GB
- Assess reliability of the organisational commitment measures in community pharmacists in GB
- Assess reliability of the professional commitment measures in community pharmacists in GB
- Assess reliability of the in-role behaviour measures in community pharmacists in GB
- Assess reliability of the extra-role behaviour towards the organisation measures in community pharmacists in GB
- Assess reliability of the extra-role behaviour towards the individual measures in community pharmacists in GB
- Assess reliability of the withdrawal behaviour measures in community pharmacists in GB
- Assess variance in community pharmacists in GB of Organisational Commitment
- Assess variance in community pharmacists in GB of professional Commitment
- Assess variance in community pharmacists in GB of In-role behaviours
- Assess variance in community pharmacists in GB of extra-role behaviour towards the individual
- Assess variance in community pharmacists in GB of extra-role behaviour towards the organisation
- Assess variance in community pharmacists in GB of withdrawal behaviours
- Assess other relevant measurement assumptions in the community pharmacist context in GB

Assessment of the variables' relationship qualities and fit indicators:

- Assess the relationship between organisational commitment and professional commitment and its dimensions within community pharmacy in GB
- Assess the relationship between the different commitment factors and organisational-withdrawal behaviour
- Assess the relationship between the different commitment factors and professional-withdrawal behaviour
- Assess the relationship between the different commitment factors and sector-withdrawal behaviour
- Assess the relationship between the different commitment factors and reduction-in-hours withdrawal behaviour
- Assess the relationship between the different commitment factors and in-role behaviour
- Assess the relationship between the different commitment factors and extra-role behaviour towards the individual
- Assess the relationship between the different commitment factors and extra-role behaviour towards the organisation
  - Examinations and comparisons of commitment relationships between outcomes

Appendix 5.1: Research blog

Pharmacy Commitment PhD is associated with
Faculty of Medical and Human Sciences

The University of Manchester

MANCHESTER 1824

Pharmacy Commitment PhD

▲ Faculty of Medical and Human Sciences

Pharmacy Commitment PhD

▸ About

▸ My Research Project

▸ Project Stage 1.1: Group Session

▸ Project Stage 1.2: Cognitive Interviews

▸ Project Stage 2.1: Survey Study 1

▸ Project Stage 2.2: Survey Study 2

▸ Travel and Parking Information

Amir Rashid
facebook

Onwards to stage 2

📅 18 August 2010   👤 Amir Rashid   💬 No comments

It's been a while since I last regularly posted blog entries. I've been busy and have found it harder to keep this blog up dated during my qualitative fieldwork, then I had anticipated; although I have faired slightly better with updating using twitter. However, as stage 1 of my research is coming to an end with all the field work now complete (thanks again to all who gave up their precious time to participate) and my analyses going well and providing interesting results, I am now at a juncture where I able to develop the use of this blog further. Indeed, I will be doing this in earnest now that I have started to develop my quantitative stage 2 studies in earnest.

Appendix 5.2 Stage 1.1: Invitation letter

Centre for Pharmacy Workforce Studies,
School of Pharmacy and Pharmaceutical Sciences,
University of Manchester,
1st Floor, Stopford Building,
Oxford Road, Manchester,
M13 9PT

Tel: 0161 275 2363
Email: amir.rashid-3@postgrad.manchester.ac.uk

DATE

Dear (Name),

I am writing to invite you to take part in a research study looking at the role of commitment in community pharmacy. This study is a part of my PhD programme based at the University of Manchester. It is of particular significance due to the many influences that commitment is known to have in relation to work-related behaviours that are both positive and negative. Despite this very little if any research has been carried out in community pharmacy in GB. Therefore, you are being asked to participate in this study as you are a community pharmacist. It is felt that you have the necessary knowledge, skills and expertise to provide a valuable contribution to this study. If you are interested you will be asked to take part in a group discussion, with 8-12 other community pharmacists that will be held at the Pharmacy Practice offices at The University of Manchester.

You may also submit your participation in this study as a CPD entry on your online log, as an attendance certificate will be provided.

I have enclosed a copy of the Participant Information Sheet (version), a consent form (version) and a prepaid envelope.

If you do wish to participate in this study then simply read the information sheet and return the completed consent form using the prepaid envelop provided. I shall then contact you by your preferred method, and arrange for you to attend the group session that is most convenient for you.

Please feel free to contact me (details above) if you have any queries about the study.

Yours sincerely with thanks,

Amir Rashid BA, M.Sc., M.Sc.
PhD Student, The University of Manchester

Appendix 5.3 Stage 1.1: Participant information sheet

Participant Information Sheet v3 (23-09-09)

Study Title: "Characterising and understanding professional and organisational commitment in community pharmacists"

Investigators:
Mr. Amir Rashid (PhD Student)
Prof. Karen Hassell (Supervisor)
Dr. Sheena Johnson (Supervisor)

Introduction

You are being invited to take part in a study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully. Talk to others about the study if you wish. Ask me if there is anything that is not clear or if you would like more information. Take time to decide whether you wish to take part.

What is the purpose of the study?

This study seeks to find out what the role of commitment plays in community pharmacy, in relation both to the profession and the (employing) organisation. What is the influence of commitment on behaviours such as the routine job role behaviours (i.e. in-role), as well as those behaviours that go beyond the official job role (i.e. discretionary extra-role)? How does commitment influence a community pharmacist's decision to leave the profession, or engage in other withdrawal behaviours? These are some of the questions that will be tackled by this study, as hardly any research in this area has been carried out before in community pharmacy in GB. This said, commitment is a key factor as it has been found to be important in the successful development and progress of both professions and organisations in other contexts. Commitment has also been found to be extremely important in an individual's and a group's successful adaptation to change. This is particularly significant due to the large amount of change that is going on in community pharmacy.

Why have I been chosen?

You have been invited to participate in this study because you are a pharmacist working in the community sector in GB. Your name and address was provided by the Royal Pharmaceutical Society of Great Britain, register of practicing pharmacists, following the successful completion of the appropriate protocols.

Do I have to take part?

No. It is up to you to decide whether or not to take part. If you do, you will have been given this information sheet to keep and will be required to sign the enclosed consent form. You are still free to withdraw at any time and without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect your position in any way.

What will happen to me if I take part?

The present study forms stage 1.1 of my PhD research programme. If you wish to take part you will be asked to participate in a group session entitled 'Commitment Behaviour in Community Pharmacy', with approximately 8-12 other community pharmacists such as yourself. The session will be split into two parts, in which the first part will be used to hold a discussion on the different views of commitment and some associated behaviours. The second of half of the session will be used to explore the ideas of in-role behaviour and discretionary extra-role behaviour in the community pharmacy context. This may also involve generating examples of these behaviours using techniques such as brainwriting. Overall the group session will take about 2.5 hours (including a refreshment break halfway through), and will be held in the Pharmacy Practice offices, at The University of Manchester, Stopford Building, Oxford Road, Manchester. The session may be audio recorded in order to aid more accurate analysis.

What are the other possible advantages and disadvantages of taking part?

I am not aware of any risks or disadvantages that you may experience. However, participation may provide you with a chance to reflect on your practice and increase your awareness. Therefore, you may also submit your participation in this study as a CPD entry on your online log, as an attendance certificate will be provided.

Will my taking part in the study be kept confidential?

All information which is collected about you during the course of the study will be kept strictly confidential. All your electronic data will be subject to high end encryption. All your hardcopy data and audio media will be destroyed after the minimum period of time required by The University of Manchester.

What if there is a problem?

If you have a concern about any aspect of this study, you should speak with the PhD student and we will do our best to answer your questions. If you remain unhappy and wish to complain formally, you can do this through the University Research Office on 0161 275 7583. This office is independent of the PhD student and supervisors.

What will happen to the results?

The findings of the study will be used to inform the next stage of the PhD research programme. It may also be reported in peer-reviewed publications and/or conferences as well as internal university seminar presentations. It will not be possible to identify you in any publication of the study's findings.

Who has reviewed the study?

This study has been reviewed by the University of Manchester's Committee on the Ethics of Research on Human Beings (ref: 09220). This is an independent group of people with responsibility for advising on whether The University of Manchester research complies with recognised ethical standards. This research has also been reviewed by both supervisors to assess the quality of the proposed study.

What do I have to do?

If you wish to be included in this study you should:
- Return the completed consent form, in the provided prepaid envelope, and I shall be in contact in due course with details of the group session arrangements.
- Alternatively, feel free to contact me by phone or by email (details below) in order to make the necessary arrangements.

Contact Details:

If you would like to ask any questions about this study and what you would be asked to consider, or if you have any other query either now or in the future, please do not hesitate to contact Amir Rashid at:

Centre for Pharmacy Workforce Studies,
School of Pharmacy and Pharmaceutical Sciences,
University of Manchester, 1st Floor, Stopford Building,
Oxford Road, Manchester, M13 9PT

Tel: 0161 275 2363
Email: amir.rashid-3@postgrad.manchester.ac.uk

<div align="center">

THANK YOU FOR READING THIS INFORMATION SHEET

</div>

Study Ethics Reference Number: 09220

Participants Identification Number for this Study:

CONSENT FORM

Title of Project: **"Characterising and understanding professional and organisational commitment in community pharmacists"** - Stage 1.1 (Group Session)

Name of Researcher: **Mr. Amir Rashid** BA, M.Sc., M.Sc.

Please initial box

1. I confirm that I have read and understand the Participant Information Sheet dated (23-09-09) (version 3) for the above study.

2. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

3. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my legal rights being affected.

4. I agree for the group session to be recorded as stated in the Participant Information Sheet dated (23-09-09) (version 3) for the above study.

5. I agree for anonymous quotations from the group session to be used for the purposes of disseminating the results

6. I agree to take part in the above study.

_____   _____   _____
Name of Participant   Date   Signature

Please indicate how you would prefer to be contacted to arrange your participation in a group discussion. Please provide your telephone number / email address:

☐☐ Telephone:...................................   ☐☐
Email:.......................................

Please indicate the size of your current employment organisation or the organisation in which you spend the most amount of time as a pharmacist:

☐ Independent   ☐ Small Multiple (<5)   ☐ Medium Multiple (5< X <300)   ☐ Large Multiple (300<)

Please return this consent form using the prepaid envelope provided

Stage 1.1: Consent Form v3_23.09.09

Centre for Pharmacy Workforce Studies,
School of Pharmacy and Pharmaceutical Sciences,
University of Manchester,
1ˢᵗ Floor, Stopford Building,
Oxford Road, Manchester,
M13 9PT

Tel: 0161 275 2363
Email: amir.rashid-3@postgrad.manchester.ac.uk
Twitter: www.twitter.com/pharmacommitphd
Research blog: www.blogs.mhs.manchester.ac.uk/pharmacommitphd
CPWS Website: www.pharmacy.manchester.ac.uk/CPWS

DATE

Dear (Name),

I am writing to invite you to take part in a research study looking at the role of commitment in community pharmacy. This study is a part of my PhD programme based at the University of Manchester. It is of particular significance due to the many influences that commitment is known to have in relation to work-related behaviours that are both positive and negative. Despite this very little, if any, research has been carried out in community pharmacy in GB. Therefore, you are being asked to participate in this study as you are a community pharmacist. It is felt that you have the necessary knowledge, skills and expertise to provide a valuable contribution to this study. If you are interested, you will be asked to take part in an interview, which may be held at the Pharmacy Practice offices located in the Stopford Building, University of Manchester, or alternatively, any other suitable venue convenient to you. The interview would normally last about an hour and a half and will be used to help prepare and test a survey, a copy of which, you will have completed before the interview (sent to you following the receipt of your consent).

I have enclosed a copy of the Participant Information Sheet (version 5), a consent form (version 5), and a prepaid envelope.

If you do wish to participate in this study then simply read the information sheet and return the completed consent form using the prepaid envelope provided. I shall then contact you by your preferred method, and arrange the interview for your convenience.

Please feel free to contact me (details above) if you have any queries about the study.

Yours sincerely with thanks,

Amir Rashid BA, M.Sc., M.Sc.
PhD Student, The University of Manchester

Stage 1.2: Invitation Letter v5_03.03.10

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Appendix 5.6 Stage 1.2: Participant's information sheet

MANCHESTER 1824

The University of Manchester

cpws The Centre For Pharmacy Workforce Studies @ The Workforce Academy

School of Pharmacy, The University of Manchester

Participant Information Sheet v5 (3-03-10)

Study Title: "Characterising and understanding professional and organisational commitment in community pharmacists" (Stage 1.2)

Investigators:
Mr. Amir Rashid (PhD Student)
Prof. Karen Hassell (Supervisor)
Dr. Sheena Johnson (Supervisor)

Introduction

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully. Talk to others about the study if you wish. Ask me if there is anything that is not clear or if you would like more information. Take time to decide whether you wish to take part.

What is the Purpose of the study?

This study is being used to prepare and test the contents of a survey that will then be carried out in the next phase of this research programme. This research wants to find out what the role of commitment plays in community pharmacy, in relation both to the profession and the (employing) organisation. In addition, what the influence of commitment is on behaviours such as the routine job role (or in-role), as well as those behaviours that go beyond the core job role (i.e. discretionary extra-role). Furthermore, the research will consider the role of commitment in a community pharmacist's decision to leave the profession, and other similar behaviours. These are some of the objectives of our research, as hardly any research in this area has been carried out before in community pharmacy in GB. This said, commitment is a key factor as it has been found to be important in the successful development and progress of both other professions and organisations. Commitment has also been found to be very important in an individual's and a group's successful adaptation to change. This is particularly significant due to the large amount of change that is going on in community pharmacy in GB.

Why have I been chosen?

You have been invited to participate in this study because you are a pharmacist working in the community sector in GB. If you were contacted for this study, then your name and address may have been provided by the Royal Pharmaceutical Society of Great Britain's register of practicing pharmacists, following the successful completion of the appropriate protocols.

Do I have to take part?

No. It is up to you to decide whether or not to take part. If you do, you will have been given this information sheet to keep and will be required to sign the enclosed consent form. You are still free to withdraw at any time and without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect your position in any way.

What will happen to me if I take part?

The present study forms stage 1.2 of my PhD research programme. If you wish to take part you will be asked to complete a questionnaire that shall be sent to you with your consent. You shall then be asked to participate in a cognitive style interview in which the survey questions will be discussed and you shall be asked to give your thoughts, feelings and any other comments you have about each of the questions discussed, as honestly as possible as there are no right or wrong answers. During this interview some disclosure of personal information is possible; however, all information will be kept confidential. In all the interview should take about an hour and a half to complete, and will be held in the Pharmacy Practice offices, at the University of Manchester, Stopford Building, Oxford Road, Manchester. If this is

inconvenient for you, an alternative location can also be arranged, if available. This interview would be audio recorded, as this will reduce the need to make extensive notes and allow me to pay full attention to what you would be saying.

What are the other possible advantages and disadvantages of taking part?

I am not aware of any risks or disadvantages that you may experience. However, participation may provide you with a chance to reflect on your practice, increase your awareness, and potentially identify possible learning needs, for the future.

Will my taking part in the study be kept confidential?

Yes, all information which is collected about you during the course of the study will be kept strictly confidential. All your electronic data will be subject to high end encryption. All your hardcopy data and audio media will be destroyed after the minimum period of time required by The University of Manchester.

What if there is a problem?

If you have a concern about any aspect of this study, you should speak with the researchers and we will do our best to answer your questions. If you remain unhappy and wish to complain formally, you can do this through the University Research Office on 0161 275 7583. This office is independent of the PhD researcher and supervisors.

What will happen to the results?

The findings of the study will be used to inform the next stage of the PhD research programme. It may also be reported in peer-reviewed publications and/or conferences as well as internal university seminar presentations. It will not be possible to identify you in any publication of the research findings.

Who has reviewed the study?

This study has been reviewed by the University of Manchester's Committee on the Ethics of Research on Human Beings (ref: 09322). This is an independent group of people with responsibility for advising on whether The University of Manchester research complies with recognised ethical standards. This research has also been reviewed by both supervisors to assess the quality of the proposed study.

What do I have to do?

If you wish to be included in this study you should:
- Return the completed consent form, in the provided prepaid envelope, and you shall be contacted in due course to arrange a suitable date and time that is convenient for you, for your interview.
- Alternatively, feel free to contact Amir Rashid by phone or by email (details below) in order to make the necessary arrangements.

Contact Details:

If you would like to ask any questions about this study and what you would be asked to consider, or if you have any other query either now or in the future, please do not hesitate to contact Amir Rashid at:

Centre for Pharmacy Workforce Studies,
School of Pharmacy and Pharmaceutical Sciences,
University of Manchester,
1st Floor, Stopford Building,
Oxford Road, Manchester,
M13 9PT
Tel: 0161 275 2363
Email: amir.rashid-3@postgrad.manchester.ac.uk
Twitter: www.twitter.com/pharmacommitphd
Research blog: www.blogs.mhs.manchester.ac.uk/pharmacommitphd

THANK YOU FOR READING THIS INFORMATION SHEET

Appendix 5.7 Stage 1.2: Consent form

Study Ethics Reference Number: 09322

Participants Identification Number for this Study:

CONSENT FORM

Title of Project: **"Characterising and understanding professional and organisational commitment in community pharmacists"** - Stage 1.2 (Interview)

Name of Researcher: **Mr. Amir Rashid** BA, M.Sc., M.Sc.

Please initial box

1. I confirm that I have read and understand the Participant Information Sheet dated 03.03.10 (version 5) for the above study.

2. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

3. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my legal rights being affected.

4. I agree for the interview to be recorded as stipulated in the Participant Information Sheet dated 03.03.10 (version 5) for the above study.

5. I agree for anonymous quotations from the interview to be used for the purposes of disseminating the results

6. I agree to take part in the above study.

_____   _____   _____
Name of Participant   Date   Signature

Please indicate how you would prefer to be contacted to arrange your interview. Please provide your telephone number / email address:

☐☐Telephone:……………………………   ☐☐
Email:…………………………………

Please indicate the size of your current employment organisation or the organisation in which you spend the most amount of time as a pharmacist:

☐Independent   ☐Small Multiple (<5)   ☐Medium Multiple (5< X <300)   ☐Large Multiple (300<)

Please return this consent form using the prepaid envelope provided

Thank you

Stage 1.2: Consent Form v4_02.02.10

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Appendix 5.8 Stage 1.1: Reminder letter

Centre for Pharmacy Workforce Studies,
School of Pharmacy and Pharmaceutical Sciences,
University of Manchester,
1ˢᵗ Floor, Stopford Building,
Oxford Road, Manchester,
M13 9PT

Tel: 0161 275 2363
Email: amir.rashid-3@postgrad.manchester.ac.uk

DATE

Dear (Name),

RE: Stage 1.1 (Group Session) - "Characterising and understanding professional and organisational commitment in community pharmacists"

I am following up my invitation, dated (DATE OF INITIAL LETTER), to my study.

I would like to take this opportunity to remind you that the study will be examining the role of commitment in community pharmacy. It is of particular significance due to the many influences that commitment is known to have in relation to work-related behaviours that are both positive and negative. You are being asked to participate in this study as you are a community pharmacist, who has the necessary knowledge skills and expertise to provide a valuable contribution to the present research. You may also submit your participation in this study as a CPD entry on your online log, as an attendance certificate will be provided.

I have enclosed a copy of the Participant Information Sheet (version), a consent form (version) and a prepaid envelope.

If you do wish to participate in this study then simply read the information sheet and return the completed consent form using the prepaid envelope provided. I shall then contact you by your preferred method, and arrange for you to attend the group session that is most convenient for you.

Please feel free to contact me (details above) if you have any queries regarding the research study.

Yours in anticipation and thanks,

Amir Rashid BA, M.Sc., M.Sc.
PhD Student, The University of Manchester

Stage 1.1: Follow-up Invitation Letter v3_23.09.09

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of Manchester

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Workforce Studies
@ The Workforce Academy

School of Pharmacy, The University of Manchester

Centre for Pharmacy Workforce Studies,
School of Pharmacy and Pharmaceutical Sciences,
University of Manchester,
1st Floor, Stopford Building,
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Tel: 0161 275 2363
Email: amir.rashid-3@postgrad.manchester.ac.uk
Twitter: www.twitter.com/pharmacommitphd
Research blog: www.blogs.mhs.manchester.ac.uk/pharmacommitphd
CPWS Website: www.pharmacy.manchester.ac.uk/CPWS

DATE

Dear (Name),

RE: Stage 1.2 (Interview) - "Characterising and understanding professional and organisational commitment in community pharmacists"

I am following up my invitation, dated (DATE OF INITIAL LETTER), to my study.

I would like to take this opportunity to remind you that the study will be examining the role of commitment in community pharmacy. It is of particular significance due to the many influences that commitment is known to have in relation to work-related behaviours that are both positive and negative. You are being asked to participate in this study as you are a community pharmacist, who has the necessary knowledge skills and expertise to provide a valuable contribution to the present research.

I have enclosed a copy of the Participant Information Sheet (version 5), a consent form (version 5) and a prepaid envelope.

If you do wish to participate in this study then simply read the information sheet and return the completed consent form using the prepaid envelope provided. I shall then contact you by your preferred method, and arrange the interview for your convenience.

Please feel free to contact me (details above) if you have any queries about the study.

Yours in anticipation and thanks,

Amir Rashid BA, M.Sc., M.Sc.
PhD Student, The University of Manchester

Stage 1.2: Follow-up Invitation Letter v5_03.03.10

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Workforce Studies
@ The Workforce Academy

School of Pharmacy, The University of Manchester

Centre for Pharmacy Workforce Studies,
School of Pharmacy and Pharmaceutical Sciences,
University of Manchester,
1st Floor, Stopford Building,
Oxford Road, Manchester,
M13 9PT

Tel: 0161 275 2363
Email: amir.rashid-3@postgrad.manchester.ac.uk

ADDRESS

DATE

Dear (Name),

RE: Stage 1.1 (Group Session) - "Characterising and understanding professional and organisational commitment in community pharmacists"

Thank you for your interest in this study. I am contacting you today in order to confirm that you are scheduled to participate in the group session entitled 'Commitment Behaviour in Community Pharmacy' at (TIME) on (DATE), at (LOCATION).

I have enclosed a map to the (LOCATION). Parking is available at (DETAILS OF PARKING)

I am very much looking forward to meeting you on (DAY & DATE). In the interim, if you require any further information please feel free to contact me (details above).

I would like to thank you again for agreeing to participate.

Yours sincerely,

Amir Rashid BA, M.Sc., M.Sc.
PhD Student, The University of Manchester

Stage 1.1: Confirmation Letter v3_23.09.09

Appendix 5.11 Stage 1.2: Confirmation letter

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@ The Workforce Academy

School of Pharmacy, The University of Manchester

Centre for Pharmacy Workforce Studies,
School of Pharmacy and Pharmaceutical Sciences,
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Tel: 0161 275 2363
Email: amir.rashid-3@postgrad.manchester.ac.uk
Twitter: www.twitter.com/pharmacommitphd
Research blog: www.blogs.mhs.manchester.ac.uk/pharmacommitphd
CPWS Website: www.pharmacy.manchester.ac.uk/CPWS

ADDRESS

DATE

Dear (Name),

RE: Stage 1.2 (Interviews) - "Characterising and understanding professional and organisational commitment in community pharmacists"

Thank you for your interest in this study. I am contacting you today in order to confirm that you are scheduled to participate in an interview at (TIME) on (DATE), at (LOCATION).

Please find enclosed a copy of the Stage 1.2: Questionnaire (version 4) (dated 03.03.10) that I would be grateful if you could complete before the interview, as detailed in the Participant Information Sheet (version 5) (dated 03.03.10). I have enclosed a map to the (LOCATION). Parking is available at (DETAILS OF PARKING)

I am very much looking forward to meeting you on (DAY & DATE). In the interim, if you require any further information please feel free to contact me (details above).

I would like to thank you again for agreeing to participate.

Yours sincerely,

Amir Rashid BA, M.Sc., M.Sc.
PhD Student,

The University of Manchester

Stage 1.2: Confirmation Letter v5_03.03.10

Appendix 5.12 Stage 1.1: Thank you letter

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Workforce Studies
@ The Workforce Academy

School of Pharmacy, The University of Manchester

Centre for Pharmacy Workforce Studies,
School of Pharmacy and Pharmaceutical Sciences,
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1ˢᵗ Floor, Stopford Building,
Oxford Road, Manchester,
M13 9PT

Tel: 0161 275 2363
Email: amir.rashid-3@postgrad.manchester.ac.uk

ADDRESS

DATE

Dear (Name),

RE: Stage 1.1 (Group Session) - "Characterising and understanding professional and organisational commitment in community pharmacists"

I would like to thank you most sincerely for your contribution to this study. The donation of your time, opinions and thoughts are very greatly appreciated.

If there are any further questions or concerns that you may have regarding this study, please do not hesitate to contact me (details above).

I would like to thank you again for participating.

Best wishes,

Amir Rashid BA, M.Sc., M.Sc.
PhD Student, The University of Manchester

Stage 1.1: Thank You Letter v3_29.09.09

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The University
of Manchester

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School of Pharmacy, The University of Manchester

Centre for Pharmacy Workforce Studies,
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Email: amir.rashid-3@postgrad.manchester.ac.uk
Twitter: www.twitter.com/pharmacommitphd
Research blog: www.blogs.mhs.manchester.ac.uk/pharmacommitphd
CPWS Website: www.pharmacy.manchester.ac.uk/CPWS

ADDRESS

DATE

Dear (Name),

RE: Stage 1.2 (Interview) - "Characterising and understanding professional and organisational commitment in community pharmacists"

I would like to thank you most sincerely for your contribution to this research study. The donation of your time, opinions and thoughts are very greatly appreciated.

If there are any further questions or concerns that you may have regarding this study, please do not hesitate to contact me (details above).

I would like to thank you again for participating.

Best wishes,

Amir Rashid BA, M.Sc., M.Sc.
PhD Student,

The University of Manchester

Stage 1.2: Thank You Letter v4_02.02.10

Appendix 5.14 Stage 1.2: Survey

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School of Pharmacy, The University of Manchester

The University of Manchester

"Characterising and understanding professional and organisational commitment in community pharmacists"

Stage 1.2: Questionnaire v4

Listed below are a series of statements that represent possible feelings that pharmacists might have about their profession. Consider your own feelings about your profession and indicate your degree of agreement or disagreement with each statement by circling a number from 1 (strongly agree) to 7 (strongly disagree).

strongly agree						strongly disagree
1. My profession is important to my self-image.						
1	2	3	4	5	6	7
2. I have put too much into my profession to consider changing now.						
1	2	3	4	5	6	7
3. I believe that people who have been trained in a profession have a responsibility to stay in that profession for a reasonable period of time						
1	2	3	4	5	6	7
4. I regret having entered my profession.						
1	2	3	4	5	6	7
5. Changing professions now would be difficult for me to do						
1	2	3	4	5	6	7
6. I do not feel any obligation to remain in my profession.						
1	2	3	4	5	6	7
7. I am proud to be in my profession.						
1	2	3	4	5	6	7
8. Too much of my life would be disrupted if I were to change my profession now						
1	2	3	4	5	6	7
9. I feel a responsibility to my profession to continue in it.						
1	2	3	4	5	6	7
10. I dislike being in my profession						
1	2	3	4	5	6	7
11. It would be costly for me to change my profession now						
1	2	3	4	5	6	7
12. Even if it were to my advantage, I do not feel that it would be right to leave my profession now.						
1	2	3	4	5	6	7
13. I do not identify with my profession						
1	2	3	4	5	6	7
14. There are no pressures to keep me from changing profession						
1	2	3	4	5	6	7
15. I would feel guilty if I left my profession						
1	2	3	4	5	6	7
16. I am enthusiastic about my profession.						
1	2	3	4	5	6	7
17. Changing professions now would require considerable personal sacrifice						
1	2	3	4	5	6	7
18. I am in my profession because of my sense of loyalty to it.						
1	2	3	4	5	6	7

Stage 1.2: Questionnaire v4_03.03.10

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Listed below is a series of statements that represent possible feelings that individuals might have about their employing organization. For the purposes of completing this survey locum community pharmacists should think about the organisation that they work in most frequently. Consider your own feelings about your organization and indicate your degree of agreement and disagreement with each statement by circling a number from 1 (strongly agree) to 7 (strongly disagree).

strongly agree						strongly disagree
1. I would be very happy to spend the rest of my career with this organization						
1	2	3	4	5	6	7
2. Right now, staying with my organization is a matter of necessity as much as desire.						
1	2	3	4	5	6	7
3. I do not feel any obligation to remain with my current employer						
1	2	3	4	5	6	7
4. I really feel as if this organization's problems are my own.						
1	2	3	4	5	6	7
5. It would be very hard for me to leave my organization right now, even if I wanted to						
1	2	3	4	5	6	7
6. Even if it were to my advantage, I do not feel it would be right to leave my organization now.						
1	2	3	4	5	6	7
7. I do not feel a strong sense of "belonging" to my organization.						
1	2	3	4	5	6	7
8. Too much of my life would be disrupted if I decided I wanted to leave my organization now						
1	2	3	4	5	6	7
9. I would feel guilty if I left my organization now.						
1	2	3	4	5	6	7
10. I do not feel "emotionally attached" to this organization						
1	2	3	4	5	6	7
11. I feel that I have too few options to consider leaving this organization						
1	2	3	4	5	6	7
12. This organization deserves my loyalty.						
1	2	3	4	5	6	7
13. I do not feel like "part of the family" at my organization						
1	2	3	4	5	6	7
14. If I had not already put so much of myself into this organization, I might consider working elsewhere						
1	2	3	4	5	6	7
15. I would not leave my organization right now because I have a sense of obligation to the people in it						
1	2	3	4	5	6	7
16. This organization has a great deal of personal meaning for me.						
1	2	3	4	5	6	7
17. One of the few negative consequences of leaving this organization would be the scarcity of available alternatives						
1	2	3	4	5	6	7
18. I owe a great deal to my organization.						
1	2	3	4	5	6	7

Listed below are a series of questions that relate to thoughts about leaving one's profession. Consider your own feelings about leaving your profession and indicate your answer to each question by circling the number between 1 and 7 that most closely represents your thoughts.

1. How frequently do you think about leaving your current profession? (very infrequently = 1 to very frequently = 7)						
1	2	3	4	5	6	7
2. How likely is it that you will search for a job in another profession? (very unlikely = 1 to very likely = 7).						
1	2	3	4	5	6	7
3. How likely is it that you will actually leave the pharmacy profession within the next year? (very unlikely = 1 to very likely = 7)						
1	2	3	4	5	6	7

Listed below are a series of questions that relate to thoughts about leaving one's employing organisation. For the purposes of completing these questions, locum community pharmacists should think about the organisation that they work in most frequently. Consider your own feelings about leaving your employing organisation and indicate your answer to each question by circling the number between 1 and 7 that most closely represents your thoughts.

1. How frequently do you think about leaving your current organization? (very infrequently = 1 to very frequently = 7)						
1	2	3	4	5	6	7
2. How likely is it that you will search for a job in another organization? (very unlikely = 1 to very likely = 7).						
1	2	3	4	5	6	7
3. How likely is it that you will actually leave the organization within the next year? (very unlikely = 1 to very likely = 7)						
1	2	3	4	5	6	7

Listed below are a series of questions that relate to thoughts about leaving one's sector (i.e. community). Consider your own feelings about leaving the community sector and indicate your answer to each question by circling the number between 1 and 7 that most closely represents your thoughts.

1. How frequently do you think about leaving your current pharmacy sector? (very infrequently = 1 to very frequently = 7)						
1	2	3	4	5	6	7
2. How likely is it that you will search for a job in another pharmacy sector? (very unlikely = 1 to very likely = 7).						
1	2	3	4	5	6	7
3. How likely is it that you will actually leave the pharmacy sector within the next year? (very unlikely = 1 to very likely = 7)						
1	2	3	4	5	6	7

Listed below are a series of questions that relate to thoughts about reducing one's hours of work. Consider your own feelings about reducing your hours of work and indicate your answer to each question by circling the number between 1 and 7 that most closely represents your thoughts.

1. How frequently do you think about reducing hours of work? (very infrequently = 1 to very frequently = 7)						
1	2	3	4	5	6	7
2. How likely is it that you will search for a job with different hours of work? (very unlikely = 1 to very likely = 7).						
1	2	3	4	5	6	7
3. How likely is it that you will actually reduce your hours of work within the next year? (very unlikely = 1 to very likely = 7)						
1	2	3	4	5	6	7

Listed below are a series of statements which represent behaviours that an individual may engage in during the performance of a job role. For the purposes of completing this survey locum community pharmacists should think about the organisation that they work in most frequently. Consider your own performance of the job role, and indicate by circling a number 1 (strongly agree) to 5 (strongly disagree) that you feel represents the degree to which you perform the following behaviours

strongly agree				strongly disagree
1. Adequately completes assigned duties				
1	2	3	4	5
2. Fulfils responsibilities specified in job description.				
1	2	3	4	5
3. Performs task that are expected of him/her				
1	2	3	4	5
4. Meets formal performance requirements of the job.				
1	2	3	4	5
5. Engages in activities that will directly affect his/her performance evaluation				
1	2	3	4	5
6. Neglects aspects of the job he/she is obligated to perform.				
1	2	3	4	5
7. Fails to perform essential duties.				
1	2	3	4	5
8. Helps others who have been absent				
1	2	3	4	5
9. Helps others who have heavy workloads.				
1	2	3	4	5
10. Assists supervisors with his/her work (when not asked)				
1	2	3	4	5
11. Takes time to listen to co-workers' problems and worries				
1	2	3	4	5
12. Goes out of way to help new employees				
1	2	3	4	5
13. Takes a personal interest in other employees				
1	2	3	4	5
14. Passes along information to other co-workers				
1	2	3	4	5
15. Attendance at work is above the norm				
1	2	3	4	5
16. Gives advance notice when unable to come to work				
1	2	3	4	5
17. Takes undeserved work breaks				
1	2	3	4	5
18. great deal of time spent with personal phone conversations				
1	2	3	4	5
19. Complains about insignificant things at work				
1	2	3	4	5
20. Conserves and protects organisational property				
1	2	3	4	5
21. Adheres to informal rules devised to maintain order				
1	2	3	4	5

"Characterising and understanding professional and organisational commitment in the community pharmacists"

Focus "Group Session" Schedule for

"Commitment Behaviour in Community Pharmacy"

Warm up – introduction to study

First of all I would like to thank you all for attending today and giving your help in this study. I would like to start off by going through some ground rules:

- I WANT YOU TO DO THE TALKING.
  - I would like everyone to participate.
  - Everyone doesn't have to answer every single question, but I'd like to hear from each of you today as the discussion progresses.
  - I may call on you if I haven't heard from you in a while.
  - One person to speak at a time in order to keep accurate notes
  - The participants to signal you if they have something to say.
  - Inform participants in the beginning that if you interrupt them, you are not being rude. Say that you are just trying to ensure that everyone can participate and that the group stays on task.
  - Please avoid side conversations.
- THERE ARE NO RIGHT OR WRONG ANSWERS
  - Every person's experiences and opinions are important.
  - Speak up whether you agree or disagree.
  - We want to hear a wide range of opinions.
  - Leave mental baggage behind
  - You don't need to agree with others, but you must listen respectfully as others share their views
- WHAT IS SAID IN THIS ROOM STAYS HERE
  - I want folks to feel comfortable sharing when sensitive issues come up.
  - No judgement or discussion of other's ideas
- ONE PERSON TO SPEAK AT A TIME IN ORDER TO KEEP ACCURATE NOTES
- WE WILL BE TAPE RECORDING THE GROUP SESSION
  - I want to capture everything you have to say.
  - I don't identify anyone by name in my research. You will remain anonymous.
  - Inform the participants that everything they say will be kept in the room and that no one will be able to link statements to individuals.
- CELL PHONES OFF!
  - Ask people to turn off their connections to the outside world so they can focus on the topic!

Switch on audio recorder

The reason for this group session is to find out how a pharmacist's commitment affects, if at all, the practice of community pharmacy. This group session will be split into two parts.

Focus Group Schedule V3: 23.09.09   1

In the first half of the session I would like to have your opinions and ideas on commitment. In particular I am interested in your thoughts about commitment to the profession of pharmacy and commitment to the employing organisation.

In the second half of the session today, I would like to have your opinions on what you think the consequences of commitment would be, in terms of both positive and negative consequences.

In fact all concepts will be discussed in greater depth. Remember there are no right or wrong answers, and please share your views they are important. I would also like to say that it is important that we talk one person at a time so that it can be recorded.

Are there any questions?

So to start of with..

I would like every one to quickly introduce yourselves, one by one and say a few words about yourself, mainly for the benefit of the recording so I know who is who when I transcribe the focus group

Excellent.

Well let's jump right in..

- What do you understand by the word 'commitment'?
  Discuss
- Is there a difference between commitment to the profession and commitment to the employing organisation?
  Discuss

- One of the more well known theories on commitment in the work place suggests that there are three main types of commitment. And that these different forms or types of commitment make people respond and behave in different ways to the target of their commitment.

I.e. Commitment is a

"a mindset that can take different forms and binds an individual to a course of action that is of relevance to a particular target".

Examine Professional Commitment

If we look at commitment linked to the profession:

- One form/type of commitment suggests that an individual wishes to be in the profession that the individual identifies with and wants to stay involved in. – Discuss
    - *PROMPT: Can you see this happening?*
    - *PROMPT: Is it relevant in community pharmacy?*
    - *PROMPT: Why would pharmacists feel like this towards their profession?*
    - *PROMPT: How would pharmacists develop such views towards their profession?*
    - *PROMPT: What could happen if someone felt too much of this type of commitment?*
    - *PROMPT: What could happen if someone felt too little of this type of commitment?*
    - *THIS FORM OF COMMITMENT IS KNOWN AS Affective Commitment*

- Another form/type of commitment is to do with someone feeling that they need to stay in the profession as leaving would be too costly in terms of what they would have to give up. There are also no better alternatives available to reduce the cost of leaving – Discuss
    - *PROMPT: Can you see this happening?*
    - *PROMPT: Is it relevant in community pharmacy?*
    - *PROMPT: Why would pharmacists feel like this towards their profession?*
    - *PROMPT: How would pharmacists develop such views towards their profession?*
    - *PROMPT: What could happen if someone felt too much of this type of commitment?*
    - *PROMPT: What could happen if someone felt too little of this type of commitment?*
    - *THIS FORM OF COMMITMENT IS KNOWN AS Continuance Commitment*

- The last form/type of commitment is to do with someone feeling a moral obligation to remain in the profession. – <u>Discuss</u>
    - o *PROMPT: Can you see this happening?*
    - o *PROMPT: Is it relevant in community pharmacy?*
    - o *PROMPT: Why would pharmacists feel like this towards their profession?*
    - o *PROMPT: How would pharmacists develop such views towards their profession?*
    - o *PROMPT: What could happen if someone felt too much of this type of commitment?*
    - o *PROMPT: What could happen if someone felt too little of this type of commitment?*
    - o *THIS FORM OF COMMITMENT IS KNOWN AS Normative Commitment*

Examine Organisational Commitment

These different types of commitment can also be associated with the organisation:

- One form/type of commitment suggests that an individual wishes to be with the employing organisation that the individual identifies with and wants to stay involved. – Discuss
  - PROMPT: Can you see this happening?
  - PROMPT: Is it relevant in community pharmacy?
  - PROMPT: Why would pharmacists feel like this towards their employing organisation?
  - PROMPT: How would pharmacists develop such views towards their employing organisation?
  - PROMPT: What could happen if someone felt too much of this type of commitment?
  - PROMPT: What could happen if someone felt too little of this type of commitment?
  - THIS FORM OF COMMITMENT IS KNOWN AS Affective Commitment

- Another form/type of commitment is to do with someone feeling that they need to stay with the organisation as leaving would be too costly in terms of what they would have to give up. There are also no better alternatives available to reduce the cost of leaving – Discuss
  - PROMPT: Can you see this happening?
  - PROMPT: Is it relevant in community pharmacy?
  - PROMPT: Why would pharmacists feel like this towards their employing organisation?
  - PROMPT: How would pharmacists develop such views towards their employing organisation?
  - PROMPT: What could happen if someone felt too much of this type of commitment?
  - PROMPT: What could happen if someone felt too little of this type of commitment?
  - THIS FORM OF COMMITMENT IS KNOWN AS Continuance Commitment

- The last form/type of commitment is to do with someone feeling a moral obligation to remain with an organisation. – <u>Discuss</u>
  - *PROMPT: Can you see this happening?*
  - *PROMPT: Is it relevant in community pharmacy?*
  - *PROMPT: Why would pharmacists feel like this towards their employing organisation?*
  - *PROMPT: How would pharmacists develop such views towards their employing organisation?*
  - *PROMPT: What could happen if someone felt too much of this type of commitment?*
  - *PROMPT: What could happen if someone felt too little of this type of commitment?*
  - *THIS FORM OF COMMITMENT IS KNOWN AS Normative Commitment*

Excellent, your input so far has been very useful, but I think this a good time to have a

<u>break</u>

Okay, as well as discussing commitment I would also now like to discuss behaviours that pharmacists could engage that would reduce their presence in the world of pharmacy

For instance…

Professional Turnover

- – Discussion regarding appropriateness and applicability
    - o *PROMPT: Is this an issue of note in pharmacy*
    - o *PROMPT: Is it relevant to community pharmacy?*
    - o *PROMPT: How would this be a consequence of commitment?*
    - o *PROMPT: Which commitment?*
    - o *PROMPT: Why?*

Okay, what about leaving the employing organisation could this be considered as withdrawal behaviour?

Organisational Turnover

- – Discussion regarding appropriateness and applicability
    - o *PROMPT: Is this an issue of note in pharmacy*
    - o *PROMPT: Is it relevant to community pharmacy?*
    - o *PROMPT: How would this be a consequence of commitment?*
    - o *PROMPT: Which commitment?*
    - o *PROMPT: Why?*

Okay, how about …

Sector Turnover

- – Discussion regarding appropriateness and applicability
    - o *PROMPT: Is this an issue of note in pharmacy*
    - o *PROMPT: Is it relevant to community pharmacy?*
    - o *PROMPT: How would this be a consequence of commitment?*
    - o *PROMPT: Which commitment?*
    - o *PROMPT: Why?*

Finally what about reducing the number of hours that a pharmacist may work?

Work Hours reduction

- – Discussion regarding appropriateness and applicability
  - o *PROMPT: Is this an issue of note in pharmacy*
  - o *PROMPT: Is it relevant to community pharmacy?*
  - o *PROMPT: How would this be a consequence of commitment?*
  - o *PROMPT: Which commitment?*
  - o *PROMPT: Why?*

Examine In-role behaviour

This time I would like you to think about activities, duties and Behaviours which are central to your professional or organisational roles and that you are paid to do

"Those aspects of job performance that represent duties, activities, and behaviours considered to be part of the job description, for which the individual is explicitly remunerated" *Definition and Explanation by Facilitator*

DISCUSS

- *PROMPT: Would In-role behaviour be different for the organisation and the profession?*
- *PROMPT: If yes, what are the differences?*
- *PROMPT: If no, is there any point of examining professional in-role behaviour in addition to organisational in-role Behaviour?*
  - o *Or should organisational and professional in-role behaviour be viewed as part of the same concept?*

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Examine Extrarole behaviour

This time I would like you to think about activities, duties and behaviours which are central to your professional or organisational role, but that you do not get paid for.

"Behaviour that is discretionary and for which the individual will not receive any direct recompense from any recognised reward system and cannot be compelled to perform as a part of the individual's job role or description." – *Definition and Explanation by Facilitator*

<u>DISCUSS</u>

- *Is there a difference between Organisational Extra-role behaviour and Professional Extra-role behaviour?*

- *If yes, what are the differences?*

- *If no, is there any point of examining professional Extra-role behaviour in addition to Organisational Extra-role Behaviour - Discussion*

  - *Or should organisational and professional extra-role behaviour be viewed as part of the same concept?*

Warm Down - Debrief

> Thank you all for giving up your precious time. This focus group session will help to inform the rest of the research, and therefore is a valuable contribution. If you would like a summary report of the research outcomes, this will be sent to you following the completion of the research. However, if in the interim you have any questions or issues that you would like to discuss regarding the research then please feel free to contact me.

Switch off audio recorder

Please note that this session may be submitted as an entry (or part entry) for your CPD log.

Thank you.

Definition

"a mindset that can take different **forms** and binds an individual to a course of action that is of relevance to a particular **target"**.

Meyer & Herscovitch, 2000

Stage 1.1: Group Session

Affective Professional commitment

"An individual wishes to be in the profession that the individual identifies with and wants to stay involved."

"Individual with a strong affective commitment continue employment in the profession because they **want** to do so."

Meyer, et al., (1993)

Stage 1.1: Group Session

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Continuance Professional commitment

"The need to stay with the Profession as leaving would be too costly in terms of what would have to be given up as there are no better alternatives available"

"Individuals whose primary link to the profession is based on continuance commitment remain because they **need** to do so."

Meyer, et al., (1993)

Stage 1.1: Group Session

Normative Professional commitment

"Feeling a moral obligation to remain in the profession"

"Individuals with a high level of normative commitment feel that they **ought** to remain in the profession."

Meyer, et al., (1993)

Stage 1.1: Group Session

Affective Organisational commitment

"An individual wishes to be with the employing organisation that the individual identifies with and wants to stay involved."

"Individual with a strong affective commitment continue employment with the organisation because they **want** to do so."

Meyer & Allen, (1991)

Stage 1.1: Group Session

Continuance Organisational commitment

"The need to stay with the organisation as leaving would be too costly in terms of what would have to be given up as there are no better alternatives available"

"Individuals whose primary link to the organisation is based on continuance commitment remain because they **need** to do so."

Meyer & Allen, (1991)

Stage 1.1: Group Session

Normative Organisational commitment

"Feeling a moral obligation to remain with an organisation."

"Individuals with a high level of normative commitment feel that they **ought** to remain with the organisation."

Meyer & Allen, (1991)

Stage 1.1: Group Session

Lets take a break

Stage 1.1: Group Session

Part 2

Stage 1.1: Group Session

Professional Turnover

How is this relevant to Community
Pharmacy practice?

Stage 1.1: Group Session

Reduction in Working Hours

How is this relevant to Community Pharmacy practice?

Stage 1.1: Group Session

In-role behaviour

"Those aspects of job performance that represent duties, activities, and accomplishments considered to be part of the job"

Meyer & Allen, (1997)

Stage 1.1: Group Session

Discretionary Extra-role behaviour

"Behaviour that is discretionary and for which the individual will not receive any direct recompense from any recognised reward system and cannot be compelled to perform as a part of the individual's job role or description."

Stage 1.1: Group Session

Thank You

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Stage 1.1: Group Session

"Characterising and understanding professional and organisational commitment in community pharmacists"

Interview Schedule

Warm up – introduction to study

First of all I would like to thank you for participating today and providing your help in this study. The reason for this interview is to prepare a survey for use with community pharmacists in GB. To do this we are testing some of the questions/items on the survey here today.

When I read out a question, I want you to say, out loud, the thoughts that come into your mind when you hear the question – just say out loud what you are thinking. I also want you to think out aloud about the answer you gave and how you arrived at that answer. Remember there are absolutely no right or wrong answers, and please share your views freely and candidly as they are important.

The interview will last about an hour and a half. I would be audio-recording the interview (show recorder), because this saves me having to take detailed notes and I can pay full attention to what you are saying.

Are you OK about the audio recording

Remember there are no right or wrong answers, and please share your views freely as they are important.

Are there any questions before we start?

Switch on audio recorder

To start off with before I give you the main questions..

Could you first introduce yourself by saying who you are?

How long you've been a community pharmacist?

When did you qualify?

Where did you train in Pharmacy?

What is your present post?

How long you have been there?

What appeals to you about community pharmacy?

Excellent.

Interview Schedule v6: 11.10.10   1

So to recap let me explain a little but more how this interview will work. I'm going to read out the questions that you have answered before in the survey. When you hear them, I want you to tell me whatever comes into your mind – just say out loud whatever you are thinking. This is called 'thinking out loud'. We've found that it helps to have some practice at doing this. So let me give you an example.

Let's say I was asked a question about 'how many windows there are in my house". If I was thinking aloud I would say "… Well, there's one window in the kitchen … And then in the main room, there are two windows… (etc).

Now let me ask you the same question: "Try to visualise the place where you live, and think about how many windows there are in that place. As you count up the windows, tell me what you are seeing and thinking about."

Excellent… We are now ready to begin

Examine Professional Commitment

1) My profession is important to my self-image. **A**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What does my profession mean to you?
Comprehension: What does self image mean to you?
Paraphrasing: What would you say that question was asking of you?
Recall/Judgement: What brought that to mind?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

2) I have put too much into my profession to consider changing now. **C**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'consider changing'?
Comprehension: What, to you, is 'too much'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

3) I believe that people who have been trained in a profession have a responsibility to stay in that profession for a reasonable period of time **N**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: In your words, what is 'trained'?
Comprehension: In your words, what is 'responsibility'?
Comprehension: In your words, what is 'reasonable period of time'?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

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4) I regret having entered my profession. **A** (R)

One of the following probes:

General: How did you go about answering this question?

General: How did you arrive at that answer?

General: What went on in your mind when you were asked that question?

General: Can you tell me what you were thinking when you were looking at this?

General: was that easy or difficult to answer? Why was that?

Possible probes:

Comprehension: What does 'regret' mean to you?

Comprehension: What does 'entered' mean to you?

Paraphrasing: What would you say that question was asking of you?

Recall/Judgement: What brought that to mind?

Confidence judgement: How sure are you of your answer?

Sensitivity at the response stage: How did you feel about answering this question?

Possible Spontaneous probes:

Based on Listening: Why do you say that?

Based on Listening: Can you tell me a bit more about that?

5) Changing professions now would be difficult for me to do **C**

One of the following probes:

General: How did you go about answering this question?

General: How did you arrive at that answer?

General: What went on in your mind when you were asked that question?

General: Can you tell me what you were thinking when you were looking at this?

General: was that easy or difficult to answer? Why was that?

Possible probes:

Comprehension: What, to you, is 'difficult'?

Paraphrasing: How would you say that question to yourself?

Recall/Judgement: What brought that to mind?

Confidence judgement: How well do you remember this?

Sensitivity at the response stage: How did you feel about answering this question?

Possible Spontaneous probes:

Based on Listening: Why do you say that?

Based on Listening: Can you tell me a bit more about that?

6) I do not feel any obligation to remain in my profession. **N** (R)

One of the following probes:

General: How did you go about answering this question?

General: How did you arrive at that answer?

General: What went on in your mind when you were asked that question?

General: Can you tell me what you were thinking when you were looking at this?

General: was that easy or difficult to answer? Why was that?

Possible probes:

Comprehension: In your words, what is 'obligation'?

Comprehension: In your words, what is 'remain'?

Paraphrasing: Can your repeat the question in your own words?

Recall/Judgement: How did you work that out?

Confidence judgement: How sure are you of your answer?

Sensitivity at the response stage: How did you feel about answering this question?

Possible Spontaneous probes:

Based on Listening: Why do you say that?

Based on Listening: Can you tell me a bit more about that?

7) I am proud to be in my profession. **A**

One of the following probes:

General: How did you go about answering this question?

General: How did you arrive at that answer?

General: What went on in your mind when you were asked that question?

General: Can you tell me what you were thinking when you were looking at this?

General: was that easy or difficult to answer? Why was that?

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Possible probes:
Comprehension: What does 'proud' mean to you?
Paraphrasing: What would you say that question was asking of you?
Recall/Judgement: What brought that to mind?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

8) Too much of my life would be disrupted if I were to change my profession now **C**
One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'Too much'?
Comprehension: What, to you, is 'my life'?
Comprehension: What, to you, is 'disrupted'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

9) I feel a responsibility to my profession to continue in it. **N**
One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: In your words, what is 'responsibility'?
Comprehension: In your words, what is 'continue in'?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

10) I dislike being in my profession **A (R)**
One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'dislike'?
Comprehension: What, to you, is 'being in'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?

Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

11) It would be costly for me to change my profession now **C**
One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'costly for me'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

12) Even if it were to my advantage, I do not feel that it would be right to leave my profession now. **N**
One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: In your words, what is 'my advantage'?
Comprehension: In your words, what is 'right'?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

13) I do not identify with my profession **A** (R)
One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What does 'identify' mean to you?
Paraphrasing: What would you say that question was asking of you?
Recall/Judgement: What brought that to mind?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

14) There are no pressures to keep me from changing profession **C** (R)
One of the following probes:
General: How did you go about answering this question?

General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'no pressures'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

15) I would feel guilty if I left my profession **N**
One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: In your words, what is 'guilty'?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

16) I am enthusiastic about my profession. **A**
One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What does 'enthusiastic' mean to you?
Paraphrasing: What would you say that question was asking of you?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

17) Changing professions now would require considerable personal sacrifice **C**
One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'considerable'?
Comprehension: What, to you, is 'personal sacrifice'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?

Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

18) I am in my profession because of my sense of loyalty to it. N
One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: In your words, what is 'my sense of loyalty'?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

Examine Organisational Commitment

1) **My organization is important to my self-image** A

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What does my organisation mean to you?
Comprehension: What does self image mean to you?
Paraphrasing: What would you say that question was asking of you?
Recall/Judgement: What brought that to mind?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

2) **I have put too much into my organization to consider changing now C**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'consider changing'?
Comprehension: What, to you, is 'too much'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?

Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

3) **I believe that people who have been trained in a organization have a responsibility to stay in that organization for a reasonable period of time** N

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: In your words, what is 'trained'?
Comprehension: In your words, what is 'responsibility'?
Comprehension: In your words, what is 'reasonable period of time'?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

4) **I regret having entered my organization**. A (R)

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What does 'regret' mean to you?
Comprehension: What does 'entered' mean to you?
Paraphrasing: What would you say that question was asking of you?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

5) **Changing organizations now would be difficult for me to do** C

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'difficult'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:

Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

6) I do not feel any obligation to remain in my organization N (R)

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: In your words, what is 'obligation'?
Comprehension: In your words, what is 'remain'?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

7) I am proud to be in my organization A

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What does 'proud' mean to you?
Paraphrasing: What would you say that question was asking of you?
Recall/Judgement: What brought that to mind?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

8) Too much of my life would be disrupted if I were to change my organization now C

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'Too much'?
Comprehension: What, to you, is 'my life'?
Comprehension: What, to you, is 'disrupted'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

9) I feel a responsibility to my organization to continue in it. N

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One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: In your words, what is 'responsibility'?
Comprehension: In your words, what is 'continue in'?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

10) I dislike being in my organization **A** (R)

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'dislike'?
Comprehension: What, to you, is 'being in'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

11) It would be costly for me to change my organization now **C**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'costly for me'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

12) Even if it were to my advantage, I do not feel that it would be right to leave my organization now **N**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?

Possible probes:
Comprehension: In your words, what is 'my advantage'?
Comprehension: In your words, what is 'right'?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

13) I do not identify with my organization **A** (R)

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What does 'identify' mean to you?
Paraphrasing: What would you say that question was asking of you?
Recall/Judgement: What brought that to mind?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

14) There are no pressures to keep me from changing organizations **C** (R)

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'no pressures'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

15) I would feel guilty if I left my organization **N**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: In your words, what is 'guilty'?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:

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Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

16) I am enthusiastic about my organization **A**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What does 'enthusiastic' mean to you?
Paraphrasing: What would you say that question was asking of you?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

17) Changing organizations now would require considerable personal sacrifice **C**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'considerable'?
Comprehension: What, to you, is 'personal sacrifice'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

18) I am in my organization because of my sense of loyalty to it **N**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: In your words, what is 'my sense of loyalty'?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

Professional Turnover

1. **How frequently do you think about leaving your current profession? (very infrequently to very frequently)**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What does 'frequently' mean to you?
Comprehension: What does 'think about leaving' mean to you?
Comprehension: What does 'current profession' mean to you?
Paraphrasing: What would you say that question was asking of you?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

2. **How likely is it that you will search for a job in another profession?   (very unlikely to very likely).**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'likely'?
Comprehension: What, to you, is 'search'?
Comprehension: What, to you, is 'another profession'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

3. **How likely is it that you will actually leave the pharmacy profession within the next year?   (very unlikely to very likely)**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: In your words, what is 'actually leave'?
Comprehension: In your words, what is 'within the next year'?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

Organisational Turnover

1. **How frequently do you think about leaving your current organization? (very infrequently to very frequently)**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What does 'frequently' mean to you?
Comprehension: What does 'think about leaving' mean to you?
Comprehension: What does 'current organization' mean to you?
Paraphrasing: What would you say that question was asking of you?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

2. **How likely is it that you will search for a job in another organization? (very unlikely to very likely).**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'likely'?
Comprehension: What, to you, is 'search'?
Comprehension: What, to you, is 'another organisation'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

3. **How likely is it that you will actually leave the organization within the next year? (very unlikely to very likely)**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: In your words, what is 'actually leave'?
Comprehension: In your words, what is 'within the next year'?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?

Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

Sector Turnover

1. **How frequently do you think about leaving your current pharmacy sector? (very infrequently to very frequently)**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What does 'frequently' mean to you?
Comprehension: What does 'think about leaving' mean to you?
Comprehension: What does 'current sector' mean to you?
Paraphrasing: What would you say that question was asking of you?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

2. **How likely is it that you will search for a job in another pharmacy sector? (very unlikely to very likely).**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'likely'?
Comprehension: What, to you, is 'search'?
Comprehension: What, to you, is 'another pharmacy sector'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

3. **How likely is it that you will actually leave the pharmacy sector within the next year? (very unlikely to very likely)**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: In your words, what is 'actually leave'?
Comprehension: In your words, what is 'within the next year'?

Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

Work Hours reduction

1. **How frequently do you think about reducing yours hours of work? (very infrequently to very frequently)**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What does 'frequently' mean to you?
Comprehension: What does 'think about reducing your hours of work' mean to you?
Paraphrasing: What would you say that question was asking of you?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

2. **How likely is it that you will search for a job with different hours of work? (very unlikely to very likely).**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'likely'?
Comprehension: What, to you, is 'search'?
Comprehension: What, to you, is 'different hours of work'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

3. **How likely is it that you will actually reduce your hours of work within the next year? (very unlikely to very likely).**

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?

Possible probes:
Comprehension: In your words, what is 'actually leave'?
Comprehension: In your words, what is 'within the next year'?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

Examine In-role behaviour

"Those aspects of job performance that represent duties, activities, and accomplishments considered to be part of the job" *Definition and Explanation by Facilitator*

1. I adequately complete assigned duties

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What does "job performance" mean to you?
Comprehension: What does "duties" mean to you?
Comprehension: What does "activities" mean to you?
Comprehension: What does "duties" mean to you?
Paraphrasing: What would you say that question was asking of you?
Recall/Judgement: What brought that to mind?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

2. I fulfil responsibilities specified in my job description.

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'responsibilities'?
Comprehension: What, to you, is 'job description'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

3. I perform tasks that are expected of me

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: In your words, what is 'performs'?
Comprehension: In your words, what is 'task'?
Paraphrasing: Can your repeat the question in your own words?

Recall/Judgement: How did you work that out?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

4. I meet formal performance requirements of my job.

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What does 'formal performance requirements' mean to you?
Comprehension: What does 'meets' mean to you?
Paraphrasing: What would you say that question was asking of you?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

5. I engage in activities that will directly affect my performance evaluation

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'directly affect'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

6. I neglect aspects of my job I am obligated to perform.

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: In your words, what is 'obligated'?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?

Based on Listening: Can you tell me a bit more about that?

7. I fail to perform essential duties.

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What does 'Fails' mean to you?
Comprehension: What does 'essential duties' mean to you?
Paraphrasing: What would you say that question was asking of you?
Recall/Judgement: What brought that to mind?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

Spontaneous Probes

Based on observation: I noticed that you hesitated before you answered that question – what were you thinking about?
Based on observation: You answered that very quickly – why was that?

Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

Pre-prepared probes
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that

Comprehension: What does X mean to you?
Comprehension: What, to you, is X?
Comprehension: In your words, what is X?

Paraphrasing: What would you say that question was asking of you?
Paraphrasing: How would you say that question to yourself?
Paraphrasing: Can your repeat the question in your own words?

Recall/Judgement: What brought that to mind?
Recall/Judgement: What brought that to mind?
Recall/Judgement: How did you work that out?
Recall/Judgement: What time period were you thinking of? From when to when?
Recall/Judgement: What did you think of as you tried to remember (reference time period)?
Recall/Judgement: Did you try to count each time you (did X), or did you make an estimate?

Confidence judgement: How well do you remember this?
Confidence judgement: How sure are you of your answer?

Sensitivity at the response stage: How did you feel about answering this question?

Visual lay out: I noticed that you were looking here (and here). What were you thinking?
Visual lay out: I noticed you were looking here (and here). What led you to do that?

Examine Extrarole behaviour

"Behaviour that is discretionary and for which the individual will not receive any direct recompense from any recognised reward system and cannot be compelled to perform as a part of the individual's job role or description." – *Definition and Explanation by Facilitator*

1. I help others who have been absent

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'Help'?
Comprehension: What, to you, is 'others'?
Comprehension: What, to you, is 'absent'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

2. I help others who have heavy workloads.

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: In your words, what is 'help'?
Comprehension: In your words, what is 'others'?
Comprehension: In your words, what is 'heavy workloads'?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

3. I assist my supervisor/line-manager with his/her work (when not asked)

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'Assists'?

Comprehension: What, to you, is 'his/her work'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

4. I take time to listen to co-workers' problems and worries

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'Takes time'?
Comprehension: What, to you, is 'problems and worries'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

5. I go out of my way to help new employees

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: In your words, what is 'out of way'?
Comprehension: In your words, what is 'help'?
Comprehension: In your words, what is 'new employees'?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

6. I take a personal interest in other employees

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What does 'personal interest' mean to you?
Comprehension: In your words, what is 'other employees'?
Paraphrasing: What would you say that question was asking of you?
Recall/Judgement: What brought that to mind?

Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

7. I pass along information to other co-workers

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'passes along information'?
Comprehension: What, to you, is 'other co-workers'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

8. My attendance at work is above the norm

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: In your words, what is 'attendance'?
Comprehension: In your words, what is 'above the norm'?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

9. I give advance notice when unable to come to work

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What does 'advance notice' mean to you?
Comprehension: What does 'unable' mean to you?
Paraphrasing: What would you say that question was asking of you?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?

Based on Listening: Can you tell me a bit more about that?

10. I take undeserved work breaks

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'undeserved work breaks'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

11. A great deal of my time is spent with personal phone/email/other communications

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: In your words, what is 'Great deal of time'?
Comprehension: In your words, what is 'personal phone/email/other communications'?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

12. I complain about insignificant things at work

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What does "Complains" mean to you?
Comprehension: What does "insignificant things" mean to you?
Paraphrasing: What would you say that question was asking of you?
Recall/Judgement: What brought that to mind?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

13. I conserve and protect organisational property

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: What, to you, is 'conserves and protects'?
Comprehension: What, to you, is 'organisational property'?
Paraphrasing: How would you say that question to yourself?
Recall/Judgement: What brought that to mind?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

14. I adhere to informal rules devised to maintain order

One of the following probes:
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that?
Possible probes:
Comprehension: In your words, what is 'informal rules'?
Comprehension: In your words, what is 'maintain order'?
Comprehension: In your words, what is 'Adheres?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: How did you work that out?
Confidence judgement: How well do you remember this?
Sensitivity at the response stage: How did you feel about answering this question?
Possible Spontaneous probes:
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?

Spontaneous Probes

Based on observation: I noticed that you hesitated before you answered that question – what were you thinking about?
Based on observation: You answered that very quickly – why was that?
Based on Listening: Why do you say that?
Based on Listening: Can you tell me a bit more about that?
Pre-prepared probes
General: How did you go about answering this question?
General: How did you arrive at that answer?
General: What went on in your mind when you were asked that question?
General: Can you tell me what you were thinking when you were looking at this?
General: was that easy or difficult to answer? Why was that
Comprehension: What does X mean to you?
Comprehension: What, to you, is X?
Comprehension: In your words, what is X?
Paraphrasing: What would you say that question was asking of you?
Paraphrasing: How would you say that question to yourself?
Paraphrasing: Can your repeat the question in your own words?
Recall/Judgement: What brought that to mind?
Recall/Judgement: What brought that to mind?
Recall/Judgement: How did you work that out?
Recall/Judgement: What time period were you thinking of? From when to when?
Recall/Judgement: What did you think of as you tried to remember (reference time period)?

Recall/Judgement: Did you try to count each time you (did X), or did you make an estimate?
Confidence judgement: How well do you remember this?
Confidence judgement: How sure are you of your answer?
Sensitivity at the response stage: How did you feel about answering this question?
Visual lay out: I noticed that you were looking here (and here). What were you thinking?
Visual lay out: I noticed you were looking here (and here). What led you to do that?

Warm Down - Debrief

Thank you for giving up your precious time. This interview will help to inform the rest of the research, and therefore is a valuable contribution. If you would like a summary report of the research outcomes following the completion of the research, then please let me know. However, if in the interim you have any questions or issues that you would like to discuss regarding the research then please feel free to contact me.

Switch off audio recorder

Thank you.

Appendix 6 Thematic analysis categories

Higher level theme	Lower level theme
APC	+ Alignment of personal values and goals with the profession + Skill utilisation and variety within the profession + Perceived versatility and flexibility within the profession + Motivated to engage further in pharmacy +/- Opportunities for personal control - Affective commitment to role =/= Affective commitment to professional body - Significant changes to the profession had been abruptly imposed from external sources - bewildered by change - too much unnecessary bureaucracy
CPC	+ Being trapped or stuck in a profession + Pharmacy was seen as just a job to maintain a lifestyle + Novelty of community pharmacists' being able to dip in and out of the profession + Little alternative but to stay in the profession owing to the perceived prohibitive costs of changing profession
NPC	- Moral obligation in normative-professional commitment may have been a little too strong to be prevalent, + Training funded by the state + Felt obligation to the community - Lack of role clarity - Perceived lack of equitable protection and support in comparison to others
AOC	+ Alignment between professional and organisational goals + Positive professional career outlook - Less felt need to be loyal to employers in general + Greater perceived attachment to colleagues - Misalignment between professional and organisational goals and values - Pharmacist: Health care professional Vs. Pharmacist: Business manager - Locum and the organisation: State of affective commitment
COC	+ Just a means to maintain an accustomed lifestyle - Perceived viable alternative forms of employment + Developed a "comfort zone" + Perceived financial loss of leaving an employing organisation
NOC	+ Potential felt obligation to work colleagues + Feeling of reciprocation of a supportive organisation - No real moral obligation + Locum: Possible obligation to colleagues, but not to the organisation
PWB	+ Too much change, too many impositions
OWB	+ Turnover perceived as more likely due to misalignment between professional and organisational goals/values - The intangible costs of changing organisations +/- Multiple Pharmacies: Branch V organisation
SWB	+ Easier to change sector rather than leave the profession as a whole + Professional Vs. Organisational considerations + Professional considerations drive changes in sector + Perceived accessibility and satisfaction in other sectors
RHWB	+ Lower hours increase commitment and satisfaction with role + Excessive hours risk patients health + Maintaining minimal presence as required to safe guard investments and/or benefits + Flexibility of profession
IRB	- Blurred role between employees and contractors - Requirements of job-role beyond job description

	• Job description dependent upon PCT priorities • Locums are expected to do everything that is needed to be done on shift. • Difference between organisational and professional requirements. • Blur between organisational and professional requirements
ERB	• Locums do all that is required • Professional and Organisational extra-role behaviours are relatively indistinct

Appendix 7.1 Descriptive statistics of demographics by gender

	Male N= N (%)	Female N= N (%)	P-Value*

Age –
  Below 30 years old
  31 to 40 years old
  41 to 50 years old
  51 to 60 years old
  61 years old and above
	
	19 (6.86)
	38 (13.72)
	78 (28.16)
	85 (30.69)
	57 (20.58)
		
		47 (11.55)
		72 (17.69)
		133 (32.68)
		131 (32.19)
		24 (5.90)
			
			0.001

Ethnicity –
  White
  Ethnic-minority
	
	208 (74.02)
	73 (25.98)
		
		319 (77.43)
		93 (22.57)
			
			0.302

Living arrangements –
  Living Alone
  Married / Living with partner
  Living with other
	
	25 (8.99)
	242 (87.05)
	11 (3.96)
		
		42 (10.32)
		340 (83.54)
		25 (6.14)
			
			0.361

Breadwinner –
  Yes
  No
  Joint
	
	218 (81.04)
	6 (2.23)
	45 (16.73)
		
		132 (33.08)
		122 (30.58)
		145 (36.34)
			
			0.001

Dependents –
  No
  Yes, young
  Yes, older
  Yes, both
	
	114 (41.16)
	126 (45.49)
	16 (5.78)
	21 (7.58)
		
		151 (36.92)
		200 (48.90)
		29 (7.09)
		29 (7.09)
			
			0.646

Number of years qualified as a pharmacist –
  2 to 5 years
  6 to 10 years
  11 to 20 years
  21 to 30 years
  31 to 40 years
  41 years or higher
	
	18 (6.38)
	16 (5.67)
	48 (17.02)
	83 (29.43)
	81 (28.72)
	36 (12.77)
		
		38 (9.27)
		36 (8.78)
		81 (19.76)
		135 (32.93)
		108 (26.34)
		12 (2.93)
			
			0.001

Number of years in community pharmacy –
  2 to 5 years
  6 to 10 years
  11 to 20 years
  21 to 30 years
  31 to 40 years
  41 years or higher
	
	17 (6.03)
	22 (7.8)
	53 (18.79)
	84 (29.79)
	77 (27.30)
	29 (10.28)
		
		43 (10.60)
		47 (11.44)
		102. (24.82)
		143 (34.79)
		77 (17.27)
		5 (1.22)
			
			0.001

Job-role –
  Proprietor/Owner
  Manager
  Relief
  Second
  Locum
  Non-store
  Others
	
	49 (17.31)
	88 (31.10)
	14 (4.95)
	7 (2.47)
	98 (34.63)
	6 (2.12)
	21 (7.42)
		
		23 (5.61)
		115 (28.05)
		52 (12.68)
		49 (11.95)
		123 (30.00)
		10 (2.44)
		38 (9.27)
			
			0.001

Type of employment –			

	Male N= N (%)	Female N= N (%)	P-Value*
Employee	136 (48.06)	264 (64.39)	0.001
Non-employee	147 (51.94)	146 (35.61)	
Type of community pharmacist –			
Locum	98 (34.63)	123 (30.00)	0.199
Non-locum	185 (65.37)	287 (70)	
Type of community pharmacy –			
Independent	62 (22.22)	75 (18.34)	0.002
Small-chain (2-5 stores)	36 (12.90)	38 (9.29)	
Medium-sized multiple (6-300 stores)	57 (20.43)	71 (17.36)	
Large-multiple (over 300 stores)	108 (38.71)	216 (52.36)	
More than one size of Organisation	16 (5.73)	9 (2.20)	
Averaged hours of actual work –			
Up to 10 hours	15 (5.34)	31 (7.56)	0.001
11 to 20 hours	24 (8.54)	76 (18.54)	
21 to 30 hours	37 (13.17)	100 (24.39)	
31 to 40 hours	67 (23.84)	111 (27.07)	
41 to 50 hours	99 (35.23)	74 (18.05)	
51 hours and over	39 (13.88)	18 (4.39)	
Type of hours worked –			
Part-time	76 (27.05)	207 (50.49)	0.001
Full-time	205 (72.95)	203 (49.51)	
Job outside community pharmacy –			
No	242 (87.36)	360 (88.02)	0.797
Yes	35 (12.64)	49 (11.98)	

*Pearson's χ^2

Appendix 7.2 Descriptive statistics of demographics by ethnicity (dichotomous)

	white N= N (%)	Minority N= N (%)	P-Value
Age –			
Below 30 years old	39 (7.42)	27 (17.20)	0.001
31 to 40 years old	67 (12.81)	43 (27.39)	
41 to 50 years old	162 (30.91)	45 (28.66)	
51 to 60 years old	181 (34.61)	35 (22.29)	
61 years old and above	74 (14.15)	7 (4.46)	
Gender –			
Male	208 (39.47)	73 (43.98)	0.302
Female	319 (60.53)	93(56.02)	
Living arrangements –			0.001
Living Alone	54 (10.36)	12 (7.50)	
Married / Living with partner	449 (86.18)	130 (11.25)	
Living with other	18 (3.45)	18 (11.25)	
Breadwinner –			
Yes	266 (52.47)	80 (50.96)	0.161
No	104 (20.51)	24 (15.29)	
Joint	137 (27.02)	53 (33.76)	
Dependents –			
No	222 (42.61)	42 (26.09)	0.001
Yes, young	243 (46.64)	82 (50.93)	
Yes, older	29 (5.57)	15 (9.32)	
Yes, both	27 (5.18)	22 (13.66)	
Number of years qualified as a pharmacist –			
2 to 5 years	29 (5.52)	27 (16.56)	0.001
6 to 10 years	31 (5.90)	21 (12.88)	
11 to 20 years	82 (15.62)	46 (28.22)	
21 to 30 years	172 (32.76)	43 (26.38)	
31 to 40 years	163 (31.05)	26 (15.95)	
41 years or higher	48 (9.14)	0 (0.00)	
Number of years in community pharmacy –			
2 to 5 years	28 (5.32)	32 (19.63)	0.001
6 to 10 years	42 (7.98)	27 (16.56)	
11 to 20 years	112 (21.29)	43 (26.38)	
21 to 30 years	185 (35.17)	38 (23.31)	
31 to 40 years	125 (23.76)	23 (14.11)	
41 years or higher	34 (6.26)	0 (0.00)	
Job-role –			
Proprietor/Owner	45 (8.57)	27 (16.46)	0.082
Manager	152 (28.95)	51 (31.10)	
Relief	53 (10.10)	10 (6.10)	
Second	43 (8.19)	13 (7.93)	
Locum	171 (32.57)	49 (29.88)	
Non-store	13 (2.48)	3 (1.83)	
Others	48 (9.14)	11 (6.71)	
Type of employment –			

	white N= N (%)	Minority N= N (%)	P-Value
Employee Non-employee	309 (58.86) 216 (41.14)	88 (53.66) 76 (46.34)	0.240

Type of community pharmacist –
  Locum
  Non-locum
	
	171 (32.57)
	354 (67.43)
		
		49 (29.88)
		115 (70.12)
			
			0.518

Type of community pharmacy –
  Independent
  Small-chain (2-5 stores)
  Medium-sized multiple (6-300 stores)
  Large-multiple (over 300 stores)
  More than one size of Organisation
	
	98 (18.70)
	57 (10.88)
	103 (19.66)
	249 (47.52)
	17 (3.24)
		
		39 (24.38)
		17 (10.63)
		25 (15.63)
		71 (44.38)
		8 (5.00)
			
			0.363

Averaged hours of actual work –
  Up to 10 hours
  11 to 20 hours
  21 to 30 hours
  31 to 40 hours
  41 to 50 hours
  51 hours and over
	
	39 (7.46)
	88 (16.83)
	108 (20.65)
	136 (26.00)
	121 (23.14)
	31 (5.93)
		
		7 (4.27)
		11 (6.71)
		28 (17.07)
		41 (25.00)
		51 (31.10)
		26 (15.86)
			
			0.001

Type of hours worked –
  Part-time
  Full-time
	
	235 (44.93)
	288 (55.07)
		
		46 (28.05)
		118 (71.95)
			
			0.001

Job outside community pharmacy –
  No
  Yes
	
	454 (87.48)
	65 (12.52)
		
		145 (88.96)
		18 (11.04)
			
			0.614

Appendix 7.3 Descriptive statistics of demographics by part-time status

	Part-time N= N (%)	Full-time N= N (%)	P-Value
Age –			
Below 30 years old	7 (2.50)	59 (14.79)	0.001
31 to 40 years old	36 (12.86)	72 (18.05)	
41 to 50 years old	84 (30.00)	125 (31.33)	
51 to 60 years old	93 (33.21)	122 (30.58)	
61 years old and above	60 (21.43)	21 (5.26)	
Gender –			
Male	76 (26.86)	205 (50.25)	0.001
Female	207 (73.14)	203 (49.75)	
Living arrangements –			
Living Alone	14 (5.00)	52 (13.00)	0.001
Married / Living with partner	254 (90.71)	324 (81.00)	
Living with other	12 (4.29)	24 (6.00)	
Breadwinner –			
Yes	92 (33.58)	255 (65.55)	0.001
No	95 (34.67)	32 (8.23)	
Joint	87 (31.75)	102 (26.22)	
Dependents –			
No	100 (35.71)	163 (40.65)	0.127
Yes, young	145 (51.79)	179 (44.64)	
Yes, older	20 (7.14)	24 (5.99)	
Yes, both	15. (5.36)	35 (8.73)	
Number of years qualified as a pharmacist –			
2 to 5 years	4 (1.42)	52 (12.78)	0.001
6 to 10 years	12 (4.26)	39 (9.58)	
11 to 20 years	52 (18.44)	77 (18.92)	
21 to 30 years	84 (29.79)	132 (32.43)	
31 to 40 years	92 (32.62)	97 (23.83)	
41 years or higher	38 (13.48)	10 (2.46)	
Number of years in community pharmacy –			
2 to 5 years	10 (3.55)	50 (12.25)	0.001
6 to 10 years	20 (7.09)	48 (11.76)	
11 to 20 years	66 (23.40)	88 (21.57)	
21 to 30 years	87 (30.85)	139 (34.07)	
31 to 40 years	73 (25.89)	75 (18.38)	
41 years or higher	26 (9.22)	9 (1.96)	
Job-role –			
Proprietor/Owner	10 (3.53)	62 (15.23)	0.001
Manager	31 (10.95)	171 (42.01)	
Relief	44 (15.55)	22 (5.41)	
Second	38 (13.43)	18 (4.42)	
Locum	139 (49.12)	82 (20.15)	
Non-store	5 (1.77)	11 (2.70)	
Others	16 (5.65)	41 (10.07)	
Type of employment –			

	Part-time N= N (%)	Full-time N= N (%)	P-Value
Employee	134 (47.35)	263 (64.62)	0.001
Non-employee	149 (52.65)	144 (35.38)	
Type of community pharmacist –			
Locum	139 (49.12)	82 (20.15)	0.001
Non-locum	144 (50.88)	325 (79.85)	
Type of community pharmacy –			
Independent	60 (21.28)	77 (19.11)	0.900
Small-chain (2-5 stores)	30 (10.64)	44 (10.92)	
Medium-sized multiple (6-300 stores)	49 (17.38)	79 (19.60)	
Large-multiple (over 300 stores)	132 (46.81)	190 (47.15)	
More than one size of Organisation	11 (3.90)	13 (3.23)	
Job outside community pharmacy –			0.005
No	236 (83.69)	365 (90.80)	
Yes	46 (16.31)	37 (9.20)	

Appendix 7.4 Descriptive statistics of demographics by locum status

	Locum N= N (%)	Non-Locum N= N (%)	P-Value
Age –			
Below 30 years old	10 (4.65)	55 (11.80)	0.001
31 to 40 years old	28 (13.02)	81 (17.38)	
41 to 50 years old	49 (22.79)	162 (34.76)	
51 to 60 years old	76 (35.35)	139 (29.83)	
61 years old and above	52 (24.19)	29 (6.22)	
Gender –			
Male	98 (44.34)	185 (39.19)	0.199
Female	123 (55.66)	287 (60.81)	
Ethnicity –			
White			
Ethnic-minority			
Living arrangements –			
Living Alone	22 (10.05)	44 (9.48)	0.636
Married / Living with partner	183 (83.56)	398 (85.78)	
Living with other	14 (6.39)	22 (4.74	
Breadwinner –			
Yes	120 (55.30)	229 (51.12)	0.599
No	39 (17.97)	88 (19.64)	
Joint	58 (26.73)	131 (29.24)	
Dependents –			
No	100 (46.08)	164 (35.19)	0.004
Yes, young	82 (37.79)	243 (52.15)	
Yes, older	19 (8.76)	25 (5.36)	
Yes, both	16 (7.37)	34 (7.80)	
Number of years qualified as a pharmacist –			
2 to 5 years	10 (4.52)	45 (9.57)	0.001
6 to 10 years	12 (5.43)	40 (8.51)	
11 to 20 years	34 (15.38)	95 (20.21)	
21 to 30 years	54 (24.43)	164 (34.89)	
31 to 40 years	79 (35.75)	110 (23.40)	
41 years or higher	32 (14.48)	16 (3.40)	
Number of years in community pharmacy –			
2 to 5 years	16 (7.24)	43 (9.13)	0.001
6 to 10 years	15 (6.79)	54 (11.46)	
11 to 20 years	46 (20.81)	109 (23.14)	
21 to 30 years	61 (27.60)	166 (35.24)	
31 to 40 years	62 (28.05)	86 (18.26)	
41 years or higher	21 (9.50)	13 (2.76)	
Type of community pharmacy –			
Independent	57 (26.03)	80 (17.09)	0.001
Small-chain (2-5 stores)	28 (12.79)	45 (9.62)	
Medium-sized multiple (6-300 stores)	50 (22.83)	78 (16.67)	
Large-multiple (over 300 stores)	62 (28.31)	262 (55.98)	
More than one size of Organisation	22 (10.05)	3 (0.64)	

	Locum N= N (%)	Non-Locum N= N (%)	P-Value
Averaged hours of actual work –			
Up to 10 hours	28 (12.67)	18 (3.84)	0.001
11 to 20 hours	58 (26.24)	42 (8.96)	
21 to 30 hours	53 (23.98)	84 (17.91)	
31 to 40 hours	42 (19.00)	135 (28.78)	
41 to 50 hours	33 (14.33)	140 (29.85)	
51 hours and over	7 (3.17)	50 (10.66)	
Type of hours worked –			
Part-time	139 (62.90)	144 (30.70)	0.001
Full-time	82 (37.10)	325 (69.30)	
Job outside community pharmacy –			
No	181 (81.90)	421 (90.73)	0.001
Yes	40 (18.10)	43 (9.27)	

Appendix 7.5 Descriptive statistics of demographics by size of pharmacy (dichotomous)

	Independents and Small-chains N= N (%)	Large-multiples N= N (%)	P-Value

Age –
  Below 30 years old
  31 to 40 years old
  41 to 50 years old
  51 to 60 years old
  61 years old and above
	8 (3.86)
	22 (10.63)
	59 (28.50)
	89 (43.00)
	29 (14.01)
		45 (14.20)
		63 (19.97)
		100 (31.55)
		76 (23.97)
		33 (10.41)
			0.001

Gender –
  Male
  Female
	98 (46.45)
	113 (53.55)
		108 (33.33)
		216 (66.67)
			0.002

Ethnicity –
  White
  Ethnic-minority
	155 (73.46)
	56 (26.54)
		249 (77.81)
		71 (22.19)
			0.250

Living arrangements –
  Living Alone
  Married / Living with partner
  Living with other
	17 (8.25)
	180 (87.38)
	9 (4.37)
		34 (10.56)
		271 (84.16)
		17 (5.28)
			0.590

Breadwinner –
  Yes
  No
  Joint
	111 (54.41)
	26 (12.75)
	67 (32.84)
		148 (47.44)
		77 (24.68)
		87 (27.88)
			0.004

Dependents –
  No
  Yes, young
  Yes, older
  Yes, both
	81 (38.76)
	92 (44.02)
	16 (7.66)
	20 (9.57)
		121 (37.58)
		171 (53.11)
		15 (4.66)
		15 (4.66)
			0.033

Number of years qualified as a pharmacist –
  2 to 5 years
  6 to 10 years
  11 to 20 years
  21 to 30 years
  31 to 40 years
  41 years or higher
	8 (3.81)
	7 (3.33)
	25 (11.90)
	81 (38.57)
	69 (32.86)
	20 (9.52)
		38 (11.73)
		32 (9.88)
		73 (22.53)
		89 (27.47)
		73 (22.53)
		19 (5.86)
			0.001

Number of years in community pharmacy –
  2 to 5 years
  6 to 10 years
  11 to 20 years
  21 to 30 years
  31 to 40 years
  41 years or higher
	13 (6.16)
	11 (5.21)
	31 (14.69)
	88 (41.71)
	53 (25.12)
	15 (7.11)
		35 (10.80)
		42 (12.96)
		85 (26.23)
		93 (28.70)
		56 (17.28)
		13 (4.01)
			0.001

Job-role –
  Proprietor/Owner
  Manager
  Relief
  Second
	67 (31.90)
	31 (14.76)
	3 (1.43)
	11 (5.24)
		0 (0.00)
		117 (36.11)
		57 (17.59)
		36 (11.11)
			0.001

	Independents and Small-chains N= N (%)	Large-multiples N= N (%)	P-Value
Locum	85 (40.48)	62 (19.14)	
Non-store	2 (0.95)	11 (3.4)	
Others	11 (5.24)	41 (12.66)	
Type of employment –			
Employee	58 (27.62)	259 (79.94)	0.001
Non-employee	152 (72.38)	65 (20.06)	
Averaged hours of actual work –			
Up to 10 hours	13 (6.16)	22 (6.83)	0.096
11 to 20 hours	29 (13.74)	49 (15.22)	
21 to 30 hours	48 (22.75)	61 (18.94)	
31 to 40 hours	47 (22.27)	83 (26.09)	
41 to 50 hours	46 (21.80)	85 (26.40)	
51 hours and over	28 (13.27)	21 (6.52)	
Type of hours worked –			
Part-time	90 (42.65)	132 (40.99)	0.704
Full-time	121 (57.35)	190 (59.01)	
Job outside community pharmacy –			
No	178 (85.17)	288 (90.00)	0.093
Yes	31 (14.83)	32 (10.00)	

Commitment in Community Pharmacists

Introduction

The purpose of this PhD research study is to see what impact a community pharmacist's commitment to the profession of pharmacy, and employing organisation, has on job performance, and behaviours such as leaving the profession of pharmacy. A secondary objective of the research is to see if commitment can be measured effectively. The reason being that commitment has been found to be a key factor in the successful development and progress of both other professions and organisations. Commitment has also been found to be very important in an individual's and a group's successful adaptation to change. This is particularly noteworthy due to the significant changes that are occurring in community pharmacy at present.

"Characterising and understanding professional and organisational commitment in community pharmacists" Stage 2 Survey.

Thank you for taking this Survey. We greatly appreciate your time and honesty in answering these questions.

1. Your Name
    (Optional)

2. Please can you enter your Reference Number*
    This to ensure that any community pharmacist who has completed the survey online will not receive unnecessary reminders sent to community pharmacists whom have yet to respond, and thereby prevent duplication. If you do not have a Reference Number or have forgotten/misplaced your Reference Number, please email amir.rashid-3@postgrad.manchester.ac.uk for a replacement/new Reference Number.

Section One

Listed below are a series of statements that represent possible feelings that community pharmacists might have about the pharmacy profession. Consider your own feelings about the pharmacy profession and indicate the extent to which you agree or disagree with each statement by circling a number from 1 (strongly agree) to 7 (strongly disagree).

3. Commitment to the Profession of Pharmacy*
   1 = strongly agree to 7 = strongly disagree

	1	2	3	4	5	6	7
1. My profession is important to my self-image.	○	○	○	○	○	○	○
2. I have put too much into my profession to consider changing now.	○	○	○	○	○	○	○
3. I believe that people who have been trained in a profession have a responsibility to stay in that profession for a reasonable period of time.	○	○	○	○	○	○	○
4. I regret having entered my profession.	○	○	○	○	○	○	○
5. Changing professions now would be difficult for me to do.	○	○	○	○	○	○	○
6. I do not feel any obligation to remain in my profession.	○	○	○	○	○	○	○
7. I am proud to be in my profession.	○	○	○	○	○	○	○
8. Too much of my life would be disrupted if I were to change my profession now.	○	○	○	○	○	○	○
9. I feel a responsibility to my profession to continue in it.	○	○	○	○	○	○	○
10. I dislike being in my profession.	○	○	○	○	○	○	○
11. It would be costly for me to change my profession now.	○	○	○	○	○	○	○
12. Even if it were to my advantage, I do not feel that it would be right to leave my profession now.	○	○	○	○	○	○	○
13. I do not identify with my profession.	○	○	○	○	○	○	○

14. There are no

pressures to keep me from changing profession.	○	○	○	○	○	○	○
15. I would feel guilty if I left my profession.	○	○	○	○	○	○	○
16. I am enthusiastic about my profession.	○	○	○	○	○	○	○
17. Changing professions now would require considerable personal sacrifice.	○	○	○	○	○	○	○
18. I am in my profession because of my sense of loyalty to it.	○	○	○	○	○	○	○

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Section Two

Listed below is a series of statements that represent possible feelings that individuals might have about their employing organisation. Consider your own feelings about your organisation and indicate the extent to which you agree or disagree with each statement by circling a number from 1 (strongly agree) to 7 (strongly disagree). Locum community pharmacists should think about the organisation that they work in most frequently. If you cannot easily identify which community pharmacy you work in most often, please identify the community pharmacy in which you worked MOST RECENTLY as your organisational setting.

4. Commitment to the Pharmacy Company*
    1 = strongly agree to 7 = strongly disagree

	1	2	3	4	5	6	7
1. I would be very happy to spend the rest of my career with this organisation.	○	○	○	○	○	○	○
2. Right now, staying with my organisation is a matter of necessity as much as desire.	○	○	○	○	○	○	○
3. I do not feel any obligation to remain with my current employer.	○	○	○	○	○	○	○
4. I really feel as if this organisation's problems are my own.	○	○	○	○	○	○	○
5. It would be very hard for me to leave my organisation right now, even if I wanted to.	○	○	○	○	○	○	○
6. Even if it were to my advantage, I do not feel it would be right to leave my organisation now.	○	○	○	○	○	○	○
7. I do not feel a strong sense of "belonging" to my organisation.	○	○	○	○	○	○	○
8. Too much of my life would be disrupted if I decided I wanted to leave my organisation now.	○	○	○	○	○	○	○
9. I would feel guilty if I left my organisation now.	○	○	○	○	○	○	○
10. I do not feel "emotionally attached" to this organisation.	○	○	○	○	○	○	○
11. I feel that I have too few options to consider leaving this organisation.	○	○	○	○	○	○	○

12. This organisation

http://www.mhs.manchester.ac.uk/surveys/Print.aspx?SurveyID=1169&Title=N&Bre...   22/10/2010

deserves my loyalty.	○	○	○	○	○	○	○
13. I do not feel like "part of the family" at my organisation.	○	○	○	○	○	○	○
14. If I had not already put so much of myself into this organisation, I might consider working elsewhere.	○	○	○	○	○	○	○
15. I would not leave my organisation right now because I have a sense of obligation to the people in it	○	○	○	○	○	○	○
16. This organisation has a great deal of personal meaning for me.	○	○	○	○	○	○	○
17. One of the few negative consequences of leaving this organisation would be the scarcity of available alternatives.	○	○	○	○	○	○	○
18. I owe a great deal to my organisation.	○	○	○	○	○	○	○

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Section Three

This section is split into four parts related to leaving the pharmacy profession, the employing organisation, the community pharmacy sector and reducing hours of work.

5. Withdrawal from the Pharmacy Profession*

Listed below are a series of questions that relate to thoughts about leaving one's profession. Consider your own feelings about leaving your profession and indicate your answer to each question by circling the number between 1 and 7 that most closely represents your thoughts.

	1	2	3	4	5	6	7
1. How frequently do you think about leaving your current profession? (very infrequently = 1 to very frequently = 7)	○	○	○	○	○	○	○
2. How likely is it that you will search for a job in another profession? (very unlikely = 1 to very likely = 7)	○	○	○	○	○	○	○
3. How likely is it that you will actually leave the pharmacy profession within the next year? (very unlikely = 1 to very likely = 7)	○	○	○	○	○	○	○

6. Withdrawal from the Community Pharmacy Organisation*

Listed below are a series of questions that relate to thoughts about leaving one's employing organisation. Consider your own feelings about leaving your employing organisation and indicate your answer to each question by circling the number between 1 and 7 that most closely represents your thoughts. Locum community pharmacists should think about the organisation that they work in most frequently. If you cannot easily identify which community pharmacy you work in most often, please identify the community pharmacy in which you worked MOST RECENTLY as your organisational setting.

	1	2	3	4	5	6	7
1. How frequently do you think about leaving your current organisation? (very infrequently = 1 to very frequently = 7)	○	○	○	○	○	○	○
2. How likely is it that you will search for a job in another organisation? (very unlikely = 1 to very likely = 7)	○	○	○	○	○	○	○
3. How likely is it that you will actually leave the organisation within the next year? (very unlikely = 1 to very likely = 7)	○	○	○	○	○	○	○

7. Withdrawal from the Community Pharmacy Sector*

Listed below are a series of questions that relate to thoughts about leaving one's sector (i.e. community). Consider your own feelings about leaving the community sector and indicate your answer to each question by circling the

number between 1 and 7 that most closely represents your thoughts.

	1	2	3	4	5	6	7
1. How frequently do you think about leaving the current pharmacy sector? (very infrequently = 1 to very frequently = 7)	○	○	○	○	○	○	○
2. How likely is it that you will search for a job in another pharmacy sector? (very unlikely = 1 to very likely = 7)	○	○	○	○	○	○	○
3. How likely is it that you will actually leave this pharmacy sector within the next year? (very unlikely = 1 to very likely = 7)	○	○	○	○	○	○	○

8.   Reducing Hours of Work*
Listed below are a series of questions that relate to thoughts about reducing one's hours of work. Consider your own feelings about reducing your hours of work and indicate your answer to each question by circling the number between 1 and 7 that most closely represents your thoughts.

	1	2	3	4	5	6	7
1. How frequently do you think about reducing hours of work? (very infrequently = 1 to very frequently = 7)	○	○	○	○	○	○	○
2. How likely is it that you will search for a job with less hours of work? (very unlikely = 1 to very likely = 7)	○	○	○	○	○	○	○
3. How likely is it that you will actually reduce your hours of work within the next year? (very unlikely = 1 to very likely = 7)	○	○	○	○	○	○	○

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Section Four

Listed below are a series of statements which represent behaviours that an individual may engage in during the performance of a job role. Consider your own performance of the job role, and indicate by circling a number 1 (strongly agree) to 5 (strongly disagree) that you feel represents the degree to which you perform the following behaviours. Locum community pharmacists should think about the organisation that they work in most frequently. If you cannot easily identify which community pharmacy you work in most often, please identify the community pharmacy in which you worked MOST RECENTLY as your organisational setting.

9.   Job Performance*
      1 = strongly agree to 5 = strongly disagree

	1	2	3	4	5
1. I adequately complete my assigned duties.	○	○	○	○	○
2. I fulfil responsibilities specified in my job description.	○	○	○	○	○
3. I perform the tasks expected of me.	○	○	○	○	○
4. I meet the formal performance requirements of my job.	○	○	○	○	○
5. I engage in activities that will directly affect my performance evaluation.	○	○	○	○	○
6. I neglect aspects of my job I am obligated to perform.	○	○	○	○	○
7. I fail to perform essential duties.	○	○	○	○	○
8. I help others who have been absent.	○	○	○	○	○
9. I help others who have heavy work loads.	○	○	○	○	○
10. I assist my supervisor/line-manager with his/her work (when not asked).	○	○	○	○	○
11. I take time to listen to co-workers' problems and worries.	○	○	○	○	○
12. I go out of my way to help new employees.	○	○	○	○	○
13. I take a personal interest in other employees.	○	○	○	○	○
14. I pass along information to co-workers.	○	○	○	○	○
15. My attendance at work is above the norm.	○	○	○	○	○

16. I give advance notice when I am

unable to come to work.	○	○	○	○	○
17. I take undeserved work breaks.	○	○	○	○	○
18. A great deal of my time is spent on personal phone/email/other communications.	○	○	○	○	○
19. I complain about insignificant things at work.	○	○	○	○	○
20. I conserve and protect organisational property.	○	○	○	○	○
21. I adhere to informal rules devised to maintain order.	○	○	○	○	○

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Section Five

This section contains questions about your background which may potentially play a role in your levels of commitment to towards the pharmacy profession and the community pharmacy company that provides you with your main or only source of employment in this sector

10. Gender
Please select the appropriate choice

- ○ Male
- ○ Female

11. Date of Birth

- ○ 25 years or less
- ○ 26 to 30 years
- ○ 31 to 40 years
- ○ 41 to 50 years
- ○ 51 to 60 years
- ○ 61 to 70 years
- ○ 71 years or higher (please specify)

12. Ethnic Origin
Indicate, by selecting the most relevant option(s), your ethnic background:
Select at least 1 and no more than 2.

- ☐ White - British
- ☐ White - Irish
- ☐ White - Other
- ☐ Black or Black British - Caribbean
- ☐ Black or Black British - African
- ☐ Black or Black British - Other
- ☐ Mixed - White & Black Caribbean
- ☐ Mixed - White & Black African
- ☐ Mixed - White & Asian
- ☐ Mixed - Other
- ☐ Asian or Asian British - Indian
- ☐ Asian or Asian British - Pakistani
- ☐ Asian or Asian British - Bangladeshi
- ☐ Asian or Asian British - Other
- ☐ Chinese
- ☐ Other Ethnic Group
- ☐ Other, please specify

13. Living status
Which of the following applies to you?

○ Living alone
○ Married / Living with partner
○ Living with other, please specify

[   ]

14. **Household Income generation**
Please indicate which of the following applies to you?

○ Main Breadwinner – Yes
○ Main Breadwinner – No
○ Joint Breadwinner

15. **Do you have responsibility for any dependents?**

☐ Young dependents - Yes
☐ Young dependents - No
☐ Elderly dependents - Yes
☐ Elderly dependents - No
☐ If yes, please specify

[   ]

16. **How long have you been qualified as a pharmacist?**
Please indicate which one of the following apply to you?

○ 1 years or less
○ 2 to 5 years
○ 6 to 10 years
○ 11 to 20 years
○ 21 to 30 years
○ 31 to 40 years
○ 41 years or higher (please specify)

[   ]

17. **How long have you been working in community pharmacy?**
Please indicate which one of the following apply to you?

○ 1 years or less
○ 2 to 5 years
○ 6 to 10 years
○ 11 to 20 years
○ 21 to 30 years
○ 31 to 40 years
○ 41 years or higher (please specify)

[   ]

18. **What is your job role/title?**
Please indicate which one of the following applies to you

○ Proprietor/Owner
○ Manager

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○ Relief Pharmacist
○ Second Pharmacist
○ Locum
○ Non-store based pharmacist
○ Other, please specify
[   ]

19. What size of community pharmacy company do you work for primarily?
     Please indicate which one of the following applies to you
     ○ Independent pharmacy
     ○ Small chain (2-5 stores)
     ○ Medium sized multiple (6-300 stores)
     ○ Large multiple (over 300 stores)
     ○ Other, please specify
     [   ]

20. What are your contracted/intended hours of work per week in community pharmacy?
     Please indicate which one of the following applies to you
     ○ Up to 10 hours
     ○ 11 to 20 hours
     ○ 21 to 30 hours
     ○ 31 to 40 hours
     ○ 41 to 50 hours
     ○ Over 51 hours, please specify
     [   ]

21. What are your actual hours of work per average week in community pharmacy?
     Please indicate which one of the following applies to you
     ○ Up to 10 hours
     ○ 11 to 20 hours
     ○ 21 to 30 hours
     ○ 31 to 40 hours
     ○ 41 to 50 hours
     ○ 51 to 60 hours
     ○ Other hours, please specify
     [   ]

22. Do you have a job outside of community pharmacy?

     ○ Yes, I also work in Hospital
     ○ Yes, I also work in Primary Care
     ○ Yes, I also work in Academia
     ○ Yes, I also work in Industry
     ○ Yes, other Pharmacy
     ○ Yes, other please specify

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End of Survey

Many Thanks for Participating in this Survey

23. Further Information
If they would like to be informed of the conclusion of the overall research programme via a summary report please provide your email address below

Alternatively, if you are interested in commitment research in pharmacy, finding out more about this research project or if you would like to follow the outcome of yours participation then please visit the official research blog for this project at:

www.blogs.mhs.manchester.ac.uk/pharmacommitphd

or if you are on facebook and would like to learn about the latest developments of this project, check out the research project's facebook page at:

www.facebook.com/pharmacommitphd

or if you are on twitter and would like to learn about the latest developments of this project, check out the research project's twitter page at:

www.twitter.com/pharmacommitphd

or if you want to know the latest about what's happening at the Centre for Pharmacy Workforce Studies, check out the centre's website at:

www.pharmacy.manchester.ac.uk/cpws

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The University of Manchester

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School of Pharmacy, The University of Manchester

Centre for Pharmacy Workforce Studies,
School of Pharmacy and Pharmaceutical Sciences,
University of Manchester,
1st Floor, Stopford Building,
Oxford Road, Manchester,
M13 9PT

Tel: 0161 275 2363
Email: amir.rashid-3@postgrad.manchester.ac.uk
Twitter: www.twitter.com/pharmacommitphd
Facebook: www.facebook.com/pharmacommitphd
Research blog: www.blogs.mhs.manchester.ac.uk/pharmacommitphd
CPWS Website: www.pharmacy.manchester.ac.uk/CPWS
Online survey link: http://www.mhs.manchester.ac.uk/surveys/

Ref No. *******

DATE

Dear (Name),

I am writing to invite you to take part in a research study looking at the role of commitment in community pharmacy. This study is a part of my PhD programme based at the University of Manchester. The research is of particular significance because commitment can affect work-related behaviours in positive and negative ways. At a time when the profession is experiencing yet more change, we're keen to investigate how committed pharmacists presently feel. Very little, if any, research has been carried out in community pharmacy in Great Britain. That is why you are being asked to take part in this study as you are a community pharmacist. You have the necessary knowledge and experience to make an important contribution to this research.

I have sent with this invitation, a copy of the Participant Information Sheet, the Survey called **"Characterising and understanding professional and organisational commitment in community pharmacists"** and a freepost envelope.

If you do want to take part in this study then simply read the participant information sheet, fill in the survey called **"Characterising and understanding professional and organisational commitment in community pharmacists"** and return the completed survey using the freepost envelope provided. Alternatively you can fill in the survey online at http://www.mhs.manchester.ac.uk/surveys/ using the Survey ID ****** (Please also give the reference number written above, when asked)

Please feel free to contact me (details above) if you have any questions about the study.

Yours sincerely with thanks,

Amir Rashid BA, M.Sc., M.Sc.

PhD Student,
The University of Manchester

Stage 2: Invitation Letter v4_11.10.10

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School of Pharmacy, The University of Manchester

Participant Information Sheet v4 (11-10-10)

Study Title: "Characterising and understanding professional and organisational commitment in community pharmacists" (Stage 2)

Investigators:
Mr. Amir Rashid (PhD Student)
Prof. Karen Hassell (Supervisor)
Dr. Sheena Johnson (Supervisor)

Introduction

You are being invited to take part in a research study. Before you decide to take part or not, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully. Talk to others about the study if you wish. Ask me if there is anything that is not clear or if you would like more information. Take time to decide whether you wish to take part.

What is the Purpose of the study?

The purpose of this PhD research study is to see what impact a community pharmacist's commitment to the profession of pharmacy, and employing organisation, has on job performance, and behaviours such as leaving the profession of pharmacy. A secondary objective of the research is to see if commitment can be measured effectively. The reason being that commitment has been found to be a key factor in the successful development and progress of both other professions and organisations. Commitment has also been found to be very important in an individual's and a group's successful adaptation to change. This is particularly noteworthy due to the significant changes that are occurring in community pharmacy at present.

Why have I been chosen?

You have been invited to participate in this study because you are a pharmacist working in the community sector in Great Britain and have been randomly selected for this study. Your name and address has been provided by the Royal Pharmaceutical Society of Great Britain's register of practicing pharmacists, following their approval of use for this study.

Do I have to take part?

No. It is up to you to decide whether or not to take part. If you do, you will be asked to complete the survey. You are still free to withdraw at any time and without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect you in any way.

What will happen to me if I take part?

The present study forms stage 2 of my PhD research programme. If you wish to take part you will be asked to complete the survey entitled "**Characterising and understanding professional and organisational commitment in community pharmacists**" that will take a maximum of twenty minutes and then send it back in the free post envelope enclosed. Alternatively, you may instead complete the survey online at http://www.mhs.manchester.ac.uk/surveys/ using the Survey ID ****** (Please also provide the reference number given on your invitation letter, when requested). If you do not have your invitation letter then you may also contact Amir Rashid (details below) for a replacement number.

What are the other possible advantages and disadvantages of taking part?

There are no risks or disadvantages to taking part. However, participation may provide you with a chance to reflect on your practice, increasing your awareness of how you see your profession, your employing organisation and your job performance.

Stage 2: Participant Information Sheet v4 (11-10-10)

Will my taking part in the study be kept confidential?

Yes, all information which is collected about you during the course of the study will be kept strictly confidential. All your electronic data will be subject to encryption. All hardcopy data will be destroyed after the minimum period of 5 years required by The University of Manchester.

What if there is a problem?

If you have a concern about any aspect of this study, you should speak with the researchers and we will do our best to answer your questions. If you remain unhappy and wish to complain formally, you can do this through the University Research Office on 0161 275 7583. This office is independent of the PhD researcher and supervisors.

What will happen to the results?

The findings of the study will be used to help inform policy and any subsequent research. It may also be reported in peer-reviewed publications in various formats, conferences and other forms of academic and policy dissemination as well as internal university seminar presentations. It will not be possible at all to identify you in any way, shape or form in any publication of the research findings.

Who has reviewed the study?

This study has been reviewed and agreed by the University of Manchester's Committee on the Ethics of Research on Human Beings (ref: 09***). This is an independent group of people with responsibility for advising on whether The University of Manchester's research complies with recognised ethical standards. This research has also been reviewed by both supervisors and statisticians to assess the quality of the proposed study.

What do I have to do?

If you wish to be included in this study you should:
- Complete the survey entitled "**Characterising and understanding professional and organisational commitment in community pharmacists**" and return it in the freepost envelope provided.
- Alternatively, you may complete the survey online at http://www.mhs.manchester.ac.uk/surveys/ using the Survey ID ******, and the reference number on your invitation letter.

Contact Details:

If you would like to ask any questions about this study, or if you have any other query either now or in the future, please do not hesitate to contact Amir Rashid at:

Centre for Pharmacy Workforce Studies,
School of Pharmacy and Pharmaceutical Sciences,
University of Manchester, 1st Floor, Stopford Building,
Oxford Road, Manchester, M13 9PT
Tel: 0161 275 2363
Email: amir.rashid-3@postgrad.manchester.ac.uk
Twitter page: www.twitter.com/pharmacommitphd
Facebook page: www.facebook.com/pharmacommitphd
Research blog: www.blogs.mhs.manchester.ac.uk/pharmacommitphd
Research centre website: www.manchester.ac.uk/pharmacy/cpws

THANK YOU FOR READING THIS INFORMATION SHEET

The University of Manchester

MANCHESTER 1824

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School of Pharmacy, The University of Manchester

"Characterising and understanding professional and organisational commitment in community pharmacists"

Stage 2 Survey Pack

Stage 2: Survey v3

Ref No:	B	A					

Section 1

Listed below are a series of statements that represent possible feelings that community pharmacists might have about the **pharmacy profession**. Consider your own feelings about the pharmacy profession and indicate the extent to which you agree or disagree with each statement by circling a number from **1 (strongly agree)** to **7 (strongly disagree)**.

1 = strongly agree						7 = strongly disagree
1. My profession is important to my self-image.						
1	2	3	4	5	6	7
2. I have put too much into my profession to consider changing now.						
1	2	3	4	5	6	7
3. I believe that people who have been trained in a profession have a responsibility to stay in that profession for a reasonable period of time.						
1	2	3	4	5	6	7
4. I regret having entered my profession.						
1	2	3	4	5	6	7
5. Changing professions now would be difficult for me to do						
1	2	3	4	5	6	7
6. I do not feel any obligation to remain in my profession.						
1	2	3	4	5	6	7
7. I am proud to be in my profession.						
1	2	3	4	5	6	7
8. Too much of my life would be disrupted if I were to change my profession now.						
1	2	3	4	5	6	7
9. I feel a responsibility to my profession to continue in it.						
1	2	3	4	5	6	7
10. I dislike being in my profession.						
1	2	3	4	5	6	7
11. It would be costly for me to change my profession now.						
1	2	3	4	5	6	7
12. Even if it were to my advantage, I do not feel that it would be right to leave my profession now.						
1	2	3	4	5	6	7
13. I do not identify with my profession.						
1	2	3	4	5	6	7
14. There are no pressures to keep me from changing profession.						
1	2	3	4	5		
15. I would feel guilty if I left my profession.						
1	2	3	4	5	6	7
16. I am enthusiastic about my profession.						
1	2	3	4	5	6	7
17. Changing professions now would require considerable personal sacrifice.						
1	2	3	4	5	6	7
18. I am in my profession because of my sense of loyalty to it.						
1	2	3	4	5	6	7

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Section 2

Listed below is a series of statements that represent possible feelings that individuals might have about their **employing organisation**. Consider your own feelings about your organisation and indicate the extent to which you agree or disagree with each statement by circling a number from **1 (strongly agree)** to **7 (strongly disagree)**. Locum community pharmacists should think about the organisation that they work in most frequently. If you cannot easily identify which community pharmacy you work in most often, please identify the community pharmacy in which you worked *MOST RECENTLY* as your organisational setting.

strongly agree						strongly disagree
1. I would be very happy to spend the rest of my career with this organisation.						
1	2	3	4	5	6	7
2. Right now, staying with my organisation is a matter of necessity as much as desire.						
1	2	3	4	5	6	7
3. I do not feel any obligation to remain with my current employer.						
1	2	3	4	5	6	7
4. I really feel as if this organisation's problems are my own.						
1	2	3	4	5	6	7
5. It would be very hard for me to leave my organisation right now, even if I wanted to.						
1	2	3	4	5	6	7
6. Even if it were to my advantage, I do not feel it would be right to leave my organisation now.						
1	2	3	4	5	6	7
7. I do not feel a strong sense of "belonging" to my organisation.						
1	2	3	4	5	6	7
8. Too much of my life would be disrupted if I decided I wanted to leave my organisation now						
1	2	3	4	5	6	7
9. I would feel guilty if I left my organisation now.						
1	2	3	4	5	6	7
10. I do not feel "emotionally attached" to this organisation.						
1	2	3	4	5	6	7
11. I feel that I have too few options to consider leaving this organisation.						
1	2	3	4	5	6	7
12. This organisation deserves my loyalty.						
1	2	3	4	5	6	7
13. I do not feel like "part of the family" at my organisation.						
1	2	3	4	5	6	7
14. If I had not already put so much of myself into this organisation, I might consider working elsewhere						
1	2	3	4	5	6	7
15. I would not leave my organisation right now because I have a sense of obligation to the people in it						
1	2	3	4	5	6	7
16. This organisation has a great deal of personal meaning for me.						
1	2	3	4	5	6	7
17. One of the few negative consequences of leaving this organisation would be the scarcity of available alternatives						
1	2	3	4	5	6	7
18. I owe a great deal to my organisation.						
1	2	3	4	5	6	7

Section 3

This section is split into four parts related to <u>leaving</u> the **pharmacy profession**, the **employing organisation**, the **community pharmacy sector** and **reducing hours of work.**

Listed below are a series of questions that relate to thoughts about leaving one's **profession**. Consider your own feelings about leaving your profession and indicate your answer to each question by circling the number between 1 and 7 that most closely represents your thoughts.

1. How frequently do you think about leaving your current profession? (**very infrequently = 1** to **very frequently = 7**)						
1	2	3	4	5	6	7
2. How likely is it that you will search for a job in another profession? (**very unlikely = 1** to **very likely = 7**).						
1	2	3	4	5	6	7
3. How likely is it that you will actually leave the pharmacy profession within the next year? (**very unlikely = 1** to **very likely = 7**)						
1	2	3	4	5	6	7

Listed below are a series of questions that relate to thoughts about leaving one's **employing organisation**. Consider your own feelings about leaving your employing organisation and indicate your answer to each question by circling the number between 1 and 7 that most closely represents your thoughts. <u>Locum community pharmacists</u> should think about the organisation that they work in most frequently. If you cannot easily identify which community pharmacy you work in most often, please identify the community pharmacy in which you worked *MOST RECENTLY* as your organisational setting.

1. How frequently do you think about leaving your current organisation? (**very infrequently = 1** to **very frequently = 7**)						
1	2	3	4	5	6	7
2. How likely is it that you will search for a job in another organisation? (**very unlikely = 1** to **very likely = 7**).						
1	2	3	4	5	6	7
3. How likely is it that you will actually leave the organisation within the next year? (very **unlikely** = 1 to very **likely** = 7)						
1	2	3	4	5	6	7

Listed below are a series of questions that relate to thoughts about leaving one's **sector (i.e. community)**. Consider your own feelings about leaving the community sector and indicate your answer to each question by circling the number between 1 and 7 that most closely represents your thoughts.

1. How frequently do you think about leaving the current pharmacy sector? (very **infrequently = 1** to very **frequently = 7**)						
1	2	3	4	5	6	7
2. How likely is it that you will search for a job in another pharmacy sector? (**very unlikely = 1** to **very likely = 7**).						
1	2	3	4	5	6	7
3. How likely is it that you will actually leave this pharmacy sector within the next year? (**very unlikely = 1** to **very likely = 7**)						
1	2	3	4	5	6	7

Listed below are a series of questions that relate to thoughts about **reducing one's hours of work**. Consider your own feelings about reducing your hours of work and indicate your answer to each question by circling the number between 1 and 7 that most closely represents your thoughts.

1. How frequently do you think about reducing hours of work? (**very infrequently = 1** to **very frequently = 7**)						
1	2	3	4	5	6	7
2. How likely is it that you will search for a job with less hours of work? (**very unlikely = 1** to **very likely = 7**).						
1	2	3	4	5	6	7
3. How likely is it that you will actually reduce your hours of work within the next year? (**very unlikely = 1** to **very likely = 7**)						
1	2	3	4	5	6	7

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Section 4

Listed below are a series of <u>statements which represent behaviours</u> that an individual may engage in during the <u>performance of a job role</u>. Consider your own performance of the job role, and indicate by circling a number **1 (strongly agree)** to **5 (strongly disagree)** that you feel represents the degree to which you perform the following behaviours. <u>Locum community pharmacists</u> should think about the organisation that they work in most frequently. If you cannot easily identify which community pharmacy you work in most often, please identify the community pharmacy in which you worked *MOST RECENTLY* as your organisational setting.

1 = strongly agree				5 = strongly disagree
1.	I adequately complete my assigned duties			
1	2	3	4	5
2.	I fulfil responsibilities specified in my job description.			
1	2	3	4	5
3.	I perform the tasks expected of me.			
1	2	3	4	5
4.	I meet the formal performance requirements of my job.			
1	2	3	4	5
5.	I engage in activities that will directly affect my performance evaluation			
1	2	3	4	5
6.	I neglect aspects of my job I am obligated to perform.			
1	2	3	4	5
7.	I fail to perform essential duties.			
1	2	3	4	5
8.	I help others who have been absent.			
1	2	3	4	5
9.	I help others who have heavy work loads.			
1	2	3	4	5
10.	I assist my supervisor/line-manager with his/her work (when not asked).			
1	2	3	4	5
11.	I take time to listen to co-workers' problems and worries.			
1	2	3	4	5
12.	I go out of my way to help new employees.			
1	2	3	4	5
13.	I take a personal interest in other employees.			
1	2	3	4	5
14.	I pass along information to co-workers.			
1	2	3	4	5
15.	My attendance at work is above the norm.			
1	2	3	4	5
16.	I give advance notice when I am unable to come to work.			
1	2	3	4	5
17.	I take undeserved work breaks.			
1	2	3	4	5
18.	A great deal of my time is spent on personal phone/email/other communications.			
1	2	3	4	5
19.	I complain about insignificant things at work.			
1	2	3	4	5
20.	I conserve and protect organisational property			
1	2	3	4	5
21.	I adhere to informal rules devised to maintain order			
1	2	3	4	5

Section Five

This section contains questions about your background which may potentially play a role in your levels of commitment to towards the pharmacy profession and the community pharmacy organisation that provides you with your main or only source of employment in this sector.

<u>Please tick the appropriate answer or write on the lines and spaces provided</u>

1) Gender (tick)	Male	
	Female	

2) What is your age?

	Tick
25 years or less	
26 to 30 years	
31 to 40 years	
41 to 50 years	
51 to 60 years	
61 to 70 years	
71 years or higher (please specify)	
…………………………………	

3) Ethnic Origin

A. White	Tick
British	
Irish	
Other (specify)	
…………………………………	

B. Black or Black British	Tick
Caribbean	
African	
Other (specify)	
…………………………………	

C. Mixed	Tick
White & Black Caribbean	
White & Black African	
White & Asian	
Other (specify)	
…………………………………	

D. Asian or Asian British	Tick
Indian	
Pakistani	
Bangladeshi	
Other (specify)	
…………………………………	

E. Chinese	Tick
Chinese	

F. Other Ethnic Group	Tick
Other (specify)	
…………………………………	

4) Living status

	Tick
Living alone	
Married / Living with partner	
Living with other (please specify)	
…………………………………	

5) Household Income generation

	Tick
Main Breadwinner – Yes	
Main Breadwinner – No	
Joint Breadwinner	

6) Dependents – do you have responsibility for:

Younger dependents	Tick
No	
Yes	
If yes (please specify number)	
…………………………………	

Older dependents	Tick
No	
Yes	
If yes (please specify number)	
…………………………………	

Stage 2: Survey v3

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7) How long have you been qualified as a pharmacist?

	Tick
1 years or less	
2 to 5 years	
6 to 10 years	
11 to 20 years	
21 to 30 years	
31 to 40 years	
41 years or higher (please specify) ……………………………	

8) How long have you been working in community pharmacy?

	Tick
1 years or less	
2 to 5 years	
6 to 10 years	
11 to 20 years	
21 to 30 years	
31 to 40 years	
41 years or higher (please specify) ……………………………	

9) What is your job role/title?

	Tick
Proprietor/Owner	
Manager	
Relief Pharmacist	
Second Pharmacist	
Locum	
Non-store based pharmacist	
Other (please specify) ……………………………	

10) What size of community pharmacy organisation do you work for primarily?

	Tick
Independent pharmacy	
Small chain (2-5 stores)	
Medium sized multiple (6-300 stores)	
Large multiple (over 300 stores)	
Other (please specify) ……………………………	

11) What are your contracted/intended hours of work per week in community pharmacy?

	Tick
Up to 10 hours	
11 to 20 hours	
21 to 30 hours	
31 to 40 hours	
41 to 50 hours	
Over 50 hours (please specify) ……………………………	

12) What are your actual hours of work per average week in community pharmacy?

	Tick
Up to 10 hours	
11 to 20 hours	
21 to 30 hours	
31 to 40 hours	
41 to 50 hours	
51 to 60 hours	
Other hours (please specify) ……………………………	

13) Do you have a job outside of community pharmacy?

	Tick
Yes, I also work in Hospital	
Yes, I also work in Primary Care	
Yes, I also work in Academia	
Yes, I also work in Industry	
Yes, other **in** pharmacy profession (please specify) ……………………………	
Yes, other **outside** of pharmacy profession (please specify) ……………………………	
No.	

Thank You for your participation

Please send the completed survey in the freepost and addressed envelope enclosed with this survey.

Alternatively, you may send the completed survey back by freepost using the following address:

Amir Rashid, PhD Student
School of Pharmacy and Pharmaceutical Sciences
University of Manchester
FREEPOST MR 9661
Room 1.131, 1st Floor Stopford Building
Oxford Road
Manchester, M13 9PT

<u>Further Information</u>

If you would like to be informed of the conclusion of the overall research programme via a summary report please provide your email address below

Alternatively, if you are interested in commitment research in pharmacy, finding out more about this research project or if you would like to follow the outcome of yours participation then please visit the official research blog for this project at:

www.blogs.mhs.manchester.ac.uk/pharmacommitphd

or if you are on facebook and would like to learn about the latest developments of this project, check out the research project's facebook page at:

www.facebook.com/pharmacommitphd

or if you are on twitter and would like to learn about the latest developments of this project, check out the research project's twitter page at:

www.twitter.com/pharmacommitphd

or if you want to know the latest about what's happening at the Centre for Pharmacy Workforce Studies, check out the centre's website at:

www.pharmacy.manchester.ac.uk/cpws

Stage 2: Survey v3

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Appendix 7.10 Stage 2: Reminder letter

Centre for Pharmacy Workforce Studies,
School of Pharmacy and Pharmaceutical Sciences,
University of Manchester,
1st Floor, Stopford Building,
Oxford Road, Manchester,
M13 9PT

Tel: 0161 275 2363
Email: amir.rashid-3@postgrad.manchester.ac.uk
Twitter: www.twitter.com/pharmacommitphd
Facebook: www.facebook.com/pharmacommitphd
Research blog: www.blogs.mhs.manchester.ac.uk/pharmacommitphd
CPWS Website: www.pharmacy.manchester.ac.uk/CPWS
Online survey link: http://www.mhs.manchester.ac.uk/surveys/

Ref No. *******

DATE

Dear (Name),

RE: Stage 2 (Survey Study) - "Characterising and understanding professional and organisational commitment in community pharmacists"

I am following up my invitation, dated (DATE OF INITIAL LETTER), to my study.

I would like to take this opportunity to remind you that the study will be examining the role of commitment in community pharmacy. The research is of particular significance because it can affect work-related behaviours in positive and negative ways. At a time when the profession is experiencing yet more change, we're keen to investigate how committed pharmacists presently feel. You are being asked to participate in this study as you are a community pharmacist, and you have the necessary knowledge and experience to make an important contribution to this research.

I have also sent with this invitation, a copy of the Participant Information Sheet, the Survey called **"Characterising and understanding professional and organisational commitment in community pharmacists"** and a freepost envelope.

If you do want to take part in this study then simply read the participant information sheet, fill in the survey called **"Characterising and understanding professional and organisational commitment in community pharmacists"** and return the completed survey using the freepost envelope provided. Alternatively you can fill in the survey online at http://www.mhs.manchester.ac.uk/surveys/ using the Survey ID ****** (Please also give the reference number written above, when asked)

Please feel free to contact me (details above) if you have any queries about the study.

Yours sincerely with thanks,

Amir Rashid BA, M.Sc., M.Sc.

PhD Student,
The University of Manchester

Stage 2: Reminder Letter v4_11.10.10

Appendix 7.11 Missing data

Dealing with missing data is an often neglected part of the process and thus is not given the required consideration[374, 493]. This may be problematic as missing data can significantly distort the outcome of the research[374, 413, 493]. There are three broad categories of missing data, Missing Completely At Random (MCAR), missing values are distributed randomly throughout the data set; Missing At Random (MAR), not randomly distributed throughout the data set but, randomly distributed within a subsample of the data set; and Not Missing At Random (NMAR), missing values not randomly distributed throughout the dataset or a subsample and may depend on unobserved variables not within the dataset[374, 408, 409, 411, 424, 493, 506]. There are also a number of strategies about how best to deal with missing data[354, 408, 410, 411, 413, 433, 437, 490, 491, 493-495, 507-510]. This includes using listwise deletion (i.e. delete all incomplete records), which has been popular and may comfortably deal with missing data where this concerns less than 5 per cent of cases in MCAR data. However, it can create severe distortions through loss of data, if more than 5 per cent of the cases exhibit missing data, and the assumption of MCAR is violated[354, 362, 408, 410, 411, 413, 433, 437, 490, 491, 493-495, 507-510]. Pairwise deletion (i.e. ignores cases which are not involved in the test being carried out, ergo, samples can vary between tests) is also very popular, but again is difficult to justify owing to the potentially significant problems involved in calculating standard errors and biased X^2 values[354, 408, 410, 411, 413, 433, 437, 490, 491, 493-495, 507-510].

There are also strategies in which the missing values are replaced by values calculated from a variety of different predictive distributions[354, 408, 410, 411, 413, 433, 437, 490, 491, 493-495, 507-510]. Mean substitution (i.e. inputting the mean of a variable in the place of the missing entry) is one such strategy and is viewed as a convenient alternative but is fraught with problems owing to biased parameter estimates caused by artificial restrictions in the size of standard deviations[354, 408, 410, 411, 413, 433, 437, 490, 491, 493-495, 507-510]. Expectation-maximization (EM) imputation (i.e. has steps, whereby the missing data is predicted based on the probability of being in an assumed distribution) is far more sophisticated than the previous strategies mentioned[354, 408, 410, 411, 413, 433, 437, 490, 491, 493-495, 507-510]. However, it is still a single imputation strategy that does not provide enough variability in its imputations and thus suffers from under estimated standard errors[354, 408, 410, 411, 413, 433, 437, 490, 491, 493-495, 507-510]. Regression imputation (i.e. calculates linear regression predictions based on the non-missing data) has similar limitations to other single imputation strategies mentioned[354, 408, 410, 411, 413, 433, 437, 490, 491, 493-495, 507-510].

The more robust and approved strategies available include the Full Information Maximum Likelihood (FIML) method of dealing with missing data in SEM[354, 408, 410, 411, 413, 433, 437, 490, 491, 493-495, 507-510]. This method does not provide an imputation but rather uses all available data in its specialised ML estimation of SEM models[354, 408, 410, 411, 413, 433, 437, 490, 491, 493-495, 507-510]. It however, unfortunately does have its limitations as it is only able to use the ML estimation method with its necessary assumptions (see section 7.7.1)[354, 408, 410, 411, 413, 433, 437, 490, 491, 493-495, 507-510]. It is therefore unable to deal with non-normal datasets and does not allow for the use of bootstrapping (see section 7.7.3)[410, 411]. In addition, FIML cannot compute modification indices and therefore it is far more difficult to modify a miss-specified model to improve model fit[410, 411]. The gold standard is an accolade given to multiple imputations (MI: i.e. use of multiple values from a pool of simulated values which mirrors natural uncertainty within the dataset)[493]

and is found to be by far the preferred and most robust method of dealing with missing data[354, 408, 410, 411, 413, 433, 437, 490, 491, 493-495, 507-510]. It achieves strong standard errors by producing multiply-imputed datasets in which the required variability may replicate the uncertainty inherent in the missing data[354, 408, 410, 411, 413, 433, 437, 490, 491, 493-495, 507-510]. It also allows for the use of bootstrapped samples and thereby is able to deal with non-normal data in SEM[354, 408, 410, 411, 413, 433, 437, 490, 491, 493-495, 507-510]. However, MIs take significantly longer to conduct analyses because of having to fit each model to each of the datasets unless the analyses provides a pooling function (not all applications provide this option). However, whilst there are ways to pool estimated parameters[354, 408, 410, 411, 413, 433, 437, 490, 491, 493-495, 507-510], no software adequately pools all recommended goodness of fit indices with only median averaged values provided at best[424, 511].

Therefore, guidance as detailed in SPSS Missing Value 19[409] was followed to provide a clear picture of the missing data situation. If it was found that more than five per cent of cases contain missing data then five MI datasets shall be produced using the procedure as detailed in Arbuckle[410].

Appendix 7.12 model fit statistical indices

One of the most widely used fit statistic is the Chi-Square fit statistic (X^2), which represents the discrepancy between the research sample covariance matrix and the implied covariance matrix of the a-priori model[361-363, 379, 410, 411, 429, 430]. Therefore, if there is a significant difference (i.e. $p \leq 0.05$) between the two the a-priori model would be deemed to not fit the research sample data, adequately[361-363, 379, 410, 411, 429, 430]. Unfortunately, the X^2 is highly susceptible to sample size and is far more likely to detect a significant difference between the aforementioned matrices, and thereby reject the model[361, 363, 379, 410, 411, 429, 430]. Therefore, it is widely advocated that other fit statistics should also be used to supplement the X^2 [347, 361, 363, 379, 410, 411, 429, 430, 512].

Out of the plethora of permutations of fit statistics, the Standardised Root Mean Squared Residual (SRMR), the Tucker-Lewis Index (TLI), the Comparative Fit Index (CFI), the Root Mean Squared Error of Approximation (RMSEA), and the x^2/df are the most widely advocated and reported fit statistics, owing in part to the work of Hu and Bentler[425, 426]. The SRMR, which is the standardised average residual value, is based upon the correlation (i.e. standardised) matrices, rather than the covariance matrices (i.e. unstandardised), and therefore would provide a value ranging from 0 to 1[347, 361, 362, 425, 426, 513, 514]. There is some debate about what constitutes acceptable fit with values ranging from below 0.08[354, 362, 379, 425, 426, 515] to below 0.07[514] and below 0.05[379]. The <u>TLI</u> provides an indication of the extent to which the a-priori model's x^2 represents an improvement relative to the baseline model (completely uncorrelated model) and places a penalty upon more complex models, as well as remaining unaffected by sample size[379, 410, 411, 414, 429, 488]. It generally ranges in value from 0 to 1 with a cut-off values ranging from 0.90 and above as acceptable[379, 410, 516, 517] and 0.95 and above as excellent[363, 421, 425, 426, 514, 515]. Similarly, the <u>CFI</u> compares the a-priori model with the baseline model, except this time using the noncentrality x^2 distribution; and also remains unaffected by sample size[362, 363, 379, 408, 411, 414, 421, 453, 454]. It generally ranges in value from 0 to 1 with a cut-off values ranging from 0.90 and above as acceptable[379, 410, 516, 517] and 0.95 and above as excellent[363, 421, 425, 426, 514, 515].

The <u>RMSEA</u> also makes use of the noncentrality x^2 distribution as well as the research samples error of approximation[347, 361, 362, 374, 379, 411, 414, 421, 423, 453, 488, 518]. It generally ranges in value from 0 to 1 with cut-off values ranging from 1.0 or above indicating poor fit[362, 410, 423, 433, 512], between 0.08 and 1.0 indicating mediocre fit[512], below 0.08 indicating reasonable fit[408, 410, 421, 423, 512, 515], below 0.06 indicating close-fit[425, 426] and below 0.05 indicating close fit[362, 363, 379, 408, 421]. In addition to the <u>RMSEA</u>, is the <u>P-close</u> value, which provides information about the closeness of fit of the a-priori model in the research sample[362, 379, 410, 411, 423, 512], with a value equal to or above 0.05 representing a close fit between the a-priori model and the research sample. The <u>x^2/df</u> is also being used widely as an alternative that is not as affected by sample size as the x^2[363, 410, 411, 422, 433], although not everyone agrees with its usage[362]. Again, what constitutes a good fit is debatable and as a result numerous cut-off values have been given, which range from 2 and below[379, 408] to 5 and below[363, 379].

Finally, the Expected Cross-Validation Index (ECVI) assesses the difference between the fit of the research sample covariance matrix and the probable covariance matrix of an alternative research sample that is of similar size and from the same population[379, 411]. The ECVI therefore does not have a cut-off per say that denotes an acceptable model, rather when two non-nested (non-hierarchical) models are compared the model with the smallest ECVI values is deemed as being the best fitting[379, 411]. Consequently, the aforementioned fit statistics are used to assess the SEM models. However, many researchers warn against relying too heavily on fit statistics alone to assess SEM models[519, 520], and therefore other criteria should be considered alongside.

Appendix 7.13 Bootstrapping for non-normal data

Bootstrapping does this by allowing multiple samples (e.g. 200+) to be generated randomly, through resampling, from a single research sample[356, 362, 379, 411, 431-435]. Each sample's parameters may be estimated individually for each sample, and when considered together, with the rest of the samples as a whole, may function as a bootstrap generated sampling distribution[411, 431-435, 437]. This also means that the parameter estimates elicited from this process may be viewed as more durable and accurate as they have been derived from the actual research sample along with the sampling distribution, rather than from an assumed distribution which may be inconsistent with the research sample[379, 411, 431, 433]. Therefore, in real world situation where non-normal datasets are not the exception, the bootstrapped sampling distribution may be used as an alternative to the standard ML distribution, as it does not require multivariate normality to be achieved in the dataset[356, 362, 379, 411, 431-435]. This said some issues must be borne in mind, for instance the research sample must be representative of the sampling frame, and ergo the research sample must have undergone some form of randomisation[379, 411, 431, 433]. The original sample should be moderately large (i.e. 200+) for the bootstrapping procedure to yield adequately accurate parameter estimates[379, 411, 431, 433]. Thirdly, the fit statistics chosen need to operate consistently well in the bootstrapped sampling distribution[379, 411, 431, 433].

Appendix 7.14 Model Modification

In the measurement model or CFA, insignificant, wrongly directed, or poor standardised regression loadings of one or more of the indicators of a latent variable may be indicative of an inappropriately specified indicator, which may in fact better load on an alternative latent variable, indicate that the latent variable should be split (if more than one poor loading occurs) or even cross load onto more than one latent variable. In this situation diagnostic information such as modification indices (provided by AMOS) may be consulted as they provide approximation of how much the X^2 would improve should a particular modification be made (e.g. re-alignment of an indicator with an alternative latent variable). Similarly the standardised residual matrix may also be able to offer additional information about sources of miss-specification where there are excessively large values of standardised residuals of 2.58 and higher[362, 411, 521] between parameters (e.g. indicators, etc.). Therefore, in such a situation, the problematic indicator may be considered for omission from the latent variable. This said, due caution must be taken against making such amendments if the surviving latent variable would no longer represent the underlying construct that it was intending to do, adequately[361].

Again assessing the standardised residual matrix may be fruitful to ascertain sources of miss-specification in the measurement model, which may be counteracted additionally in one of two ways. Firstly, critical ratios may be assessed to ascertain whether a pair of parameters (e.g. indicators, etc.) with similar critical ratios may be constrained to zero, thereby reducing the number of degrees of freedom in the model and only slightly increasing the X^2. Secondly, the modification indices may be assessed to ascertain if there are any error-terms associated with a pair of indicators which may be covaried (i.e. freely estimated rather than constrained to zero). This may occur as a result of how the items, which these indictors represent, were answered, as a result of artefacts that are relevant either to the research sample, the items themselves, or both. In terms of the latter this may be due to the wording of the items being similar in content, which may occur when both items load onto the same or similar content domains of latent variables. If they are an artefact related to the research population of interest this may take the form of a particular bias in the sample (e.g. a tendency to respond negatively, social desirability, etc.). Such a modification would improve the X^2 substantially, whilst increasing the degrees of freedom slightly. Again, any modification should only be made where there is sound theoretical reasoning for such modifications and imposed incrementally.

In terms of the structural model again many of the same sources of information as mentioned above (e.g. assessing standardised residuals, etc.) may be relevant here. Nonetheless, any modification to the structural model shall initiate the beginning of a new theory, which will then require additional cross-validation. This said, two main types of modifications are often mentioned, one relates to an assessment of the modification indices whereby linear regression paths between the latent variables maybe identified that would improve the X^2. The second also relates to the assessment of linear regression paths, but this

time the removal of those which are found to be non-significant, from the model. However, these modifications are widely used with an eye to parsimony[363, 408, 411, 430, 451]. In the current context as the hypothesised model is subsequently to be compared to subsets of the full respondent research sample this structural model would not be modified, so that subsequent analyses in the other research sub-samples would be testing the parameters hypothesised a priori, rather than new theoretical parameters derived from the new theory[361, 362, 522, 523]. Moreover, the deletion of regression paths on statistical basis at odds with substantive rationale would never be recommended[361-363, 408, 451, 453]. Loehlin, argues that the removal of such paths may have negative consequences for the realisation of an optimal solution [361, 362], such as a reduction in the estimation of total effects, as well as a reduction in the total variance explained [524]. Therefore, to remain consistent with the a-priori substantive theory behind the structural model, this model would not be modified afterward [361].

Appendix 7.15 Assessing the Psychometric Properties of the measurement scales

Discriminant validity can be measured by assessing, for instance, a three factor model separately as a one factor model, a two factor model as well as a three factor model and then comparing the fit between each individual model[414, 448, 525]. If there are significant differences between the original three factor model and the other two models, and the three factor model exhibited a better fit to the data, then this would support the idea of discriminant validity[414, 448, 525]. An extension of this would be assess the entire measurement model as one model and then alternative a-priori factor structure models as well as the actual factor structured measurement model. Again, a comparison could be made to assess whether the actual measurement model was significantly different and indeed a better fit then the alternative models based on the same indicators[414, 448, 525]. An additional and more rigorous test for discriminant validity recommended by Hair and colleagues is to calculate the average variance extracted (i.e. AVE; the percentage of averaged variance explained by the items of an individual construct) for two different constructs and then compare these values to the squared correlation estimate (SC) between the aforementioned constructs[379, 414, 448, 525]. Should discriminant validity be achieved then the AVE should be larger than the SC, as a latent variable should account for more shared variance with its indicators then it does with other constructs[379, 414, 448, 525]. A final way to assess discriminant validity using CFA is to assess the standardised regression and modification fit indices, etc. for evidence of cross loading (see section 7.9.1). If there is such evidence then this would highlight a potential problem with the discriminant validity of the measurement scales[414, 448, 525].

Convergent validity may also be assessed by inspecting the standardised regression loadings of the indictors on the latent factors[379, 414, 448, 525]. Higher loadings would suggest that the indicators converge on the latent factor with the latter explaining more of the extracted variance of the indicators[379, 414, 448, 525]. Hair and colleagues suggest that a minimum acceptable loadings for evidence of convergent validity should be at least 0.5, with higher loadings being more indicative of convergent validity, and less of error variance[379, 414, 448, 525]. Another measurement of good convergent validity is a high AVE (mentioned above) of a latent factor which is the common variance extracted from its indicators that is accounted for by the aforementioned factor[379, 414, 448, 525]. Again, a minimum acceptable value of AVE for good convergent validity is 0.5 as any lower would imply that error variance accounted for more common variance extracted in a factor's indictors then it did[379, 414, 448, 525]. Finally, Hair and colleagues recommend the calculation of the composite reliability (CR; or construct reliability) as a last indicator of convergent validity[379, 414, 448, 525]. It is worth noting that there are a number of different reliability estimates that may be used[379, 408, 414]. However, with the significant potential for non-normal data in applied research coupled with the ability to use bootstrapped estimates and standard errors in the calculation of CR, it was viewed as the most appropriate reliability estimate to use[379, 408, 414, 448, 525]. This said, as with other forms of reliability estimates an acceptable level of reliability which would indicate that all the indicators consistently map onto the underlying domain of the factor construct, is equal to or higher than 0.7[379, 414, 448, 525].

Appendix 8.1 A Comparison of overall model fit between the various models of modified professional commitment in Sample 1 and final comparison in sample 2, using naive pooling (median) of multiply-imputed datasets (see Appendix 12)

Model	$X^2(df)$	X^2/df	B-S P-Value	SRMR	TLI	CFI	RMSEA
Model 1. Sample 1 3 Factor Model	526.141 (132)***	3.986	.002	.1001	.825	.850	.092***
Model 2. Sample 1 3 Factor Model minus PC1 (My profession is important to my self-image), PC2 (I have put too much into my profession to consider changing now) and PC14 (There are no pressures to keep me from changing professions)	293.182 (87)***	3.370	.002	.0643	.890	.908	.082***
Model 3. Sample 1 3 Factor Model minus PC1, PC2 and PC14; plus covaried er8 (Changing professions now would be difficult for me to do) - er9 (Too much of my life would be disrupted if I were to change my profession now)	266.616 (86)***	3.100	.002	.0635	.902	.920	.078***
Model 4. Sample 1 3 Factor Model minus PC1, PC2 and PC14; plus covaried er8-er9 and er2 (I regret having entered my profession) - er4 (I dislike being in my profession)	211.858 (85)***	2.492	.002	.0584	.930	.943	.065*
Final Model. Sample 1 3 Factor Model minus PC1, PC2 and PC14; plus covaried er8-er9, er2-er4 and er17 I would feel guilty if I left my profession – er18 (I am in my profession because of my sense of loyalty to it) (Final Model)	176.629 (84)***	2.103	.002	0558	.949	.959	.056++
Final Model. Sample 2 3 Factor Model minus PC1, PC2 and PC14; plus covaried er8-er9, er2-er4 and er17-er18 (Final Model)	149.522 (84)***	1.780	.002	.0472	.965	.972	.047++

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1

Appendix 8.2 Combined Datasets Standardised Regression Loadings of the Professional Commitment Final Model in Sample 1 and Sample 2

Combined Datasets Standardised Regression Loadings of the Professional Commitment Final Model in Sample 1

			ML Estimate	SE Estimate	CR	df	p	ML Estimate
Standardized Regression Weights								
PC16A6	<---	APC	0.796	0.033	24.449	8915.938	0.000	***
PC13A5Reverse	<---	APC	0.708	0.050	14.025	426911.456	0.000	***
PC10A4Reversed	<---	APC	0.705	0.050	14.215	4319.633	0.000	***
PC7A3	<---	APC	0.749	0.045	16.467	10083.361	0.000	***
PC4A2Reversed	<---	APC	0.638	0.050	12.667	77471.886	0.000	***
PC17C6	<---	CPC	0.774	0.050	15.565	200457.351	0.000	***
PC11C4	<---	CPC	0.769	0.052	14.895	51906.081	0.000	***
PC8C3	<---	CPC	0.721	0.052	13.894	238264.247	0.000	***
PC5C2	<---	CPC	0.479	0.059	8.055	49474.070	0.000	***
PC18N6	<---	NPC	0.705	0.038	18.505	253400.373	0.000	***
PC15N5	<---	NPC	0.661	0.038	17.469	24676.552	0.000	***
PC12N4	<---	NPC	0.685	0.043	15.912	778764.227	0.000	***
PC9N3	<---	NPC	0.901	0.024	37.503	925444.000	0.000	***
PC6N2Reverse	<---	NPC	0.648	0.040	16.259	572112.145	0.000	***
PC3N1	<---	NPC	0.619	0.043	14.348	19298.982	0.000	***

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1

Combined Datasets Standardised Regression Loadings of the Professional Commitment Final Model in Sample 2

			ML Estimate	SE Estimate	CR	df	p	ML Estimate
Standardized Regression Weights								
PC16A6	<---	APC	0.797	0.036	21.903	9773.495	0.000	***
PC13A5Reverse	<---	APC	0.721	0.041	17.381	371944.272	0.000	***
PC10A4Reversed	<---	APC	0.799	0.030	27.059	45758.243	0.000	***
PC7A3	<---	APC	0.775	0.037	20.988	76886.723	0.000	***
PC4A2Reversed	<---	APC	0.702	0.036	19.357	21888.003	0.000	***
PC17C6	<---	CPC	0.743	0.044	16.837	82682.543	0.000	***
PC11C4	<---	CPC	0.813	0.038	21.435	124076.609	0.000	***
PC8C3	<---	CPC	0.800	0.042	19.119	1757713.500	0.000	***
PC5C2	<---	CPC	0.460	0.066	6.949	152283.585	0.000	***
PC18N6	<---	NPC	0.733	0.034	21.542	21394.233	0.000	***
PC15N5	<---	NPC	0.683	0.040	16.989	39812.566	0.000	***
PC12N4	<---	NPC	0.615	0.047	13.059	21402.264	0.000	***
PC9N3	<---	NPC	0.815	0.031	26.006	67374.580	0.000	***
PC6N2Reverse	<---	NPC	0.739	0.036	20.485	431051.934	0.000	***
PC3N1	<---	NPC	0.607	0.041	14.892	81375.895	0.000	***

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1

Table: The Average Variance Extracted (AVE), Maximum Shared Squared Variance (MSV), and Average Shared Squared Variance (ASV), Composite Reliabilities (CR) and Correlations in the final model of Professional Commitment in Sample 1 (see section 7.8)

	CR	AVE	MSV	ASV	CPC	APC	NPC
CPC	0.785	0.485	0.032	0.016	0.696		
APC	0.843	0.520	0.249	0.125	-0.022	0.721	
NPC	0.856	0.503	0.249	0.140	0.178	0.499	0.709

APC= affective-professional commitment, CPC= continuance-professional commitment, NPC=normative-professional commitment

Table The Average Variance Extracted (AVE), Maximum Shared Squared Variance (MSV), and Average Shared Squared Variance (ASV), Composite Reliabilities (CR) and Correlations in the final model of Professional Commitment in Sample 2 (see section 7.8)

	CR	AVE	MSV	ASV	CPC	APC	NPC
CPC	0.804	0.516	0.039	0.038	0.718		
APC	0.872	0.577	0.365	0.200	0.190	0.760	
NPC	0.852	0.493	0.365	0.202	0.198	0.604	0.702

APC= affective-professional commitment, CPC= continuance-professional commitment, NPC=normative-professional commitment

Appendix 8.4 A Comparison of overall model fit between the various models of modified Organisational Commitment in Sample 1 and final comparison in sample 2, using naive pooling (median) of multiply-imputed datasets (see Appendix 12)

Model	$X^2(df)$	X^2/df	B-S P-Value	SRMR	TLI	CFI	RMSEA
Model 1: Sample 1 4 Factor Model	507.887 (129)***	3.937	.002	.0786	.858	.880	.092***
Model 2: Sample 1 4 Factor Model minus OC2 (Right now, staying with my organisation is a matter of necessity as much as desire) and OC14 (If I had not already put so much of myself into this organisation, I might consider working elsewhere)	398.938 (100)***	3.989	.002	.0705	.878	.898	.093***
Model 3: Sample 1 4 Factor Model minus OC2 and OC14; plus covaried er14 (Even if it were to my advantage, I do not feel it would be right to leave my organisation now) - er15 (I would feel guilty if I left my organisation now)	371.626 (99)***	3.754	.002	.0699	.887	.907	.089***
Model 4: Sample 1 4 Factor Model minus OC2 and OC14; plus covaried er14-er15 and er3 (I do not feel a strong sense of "belonging" to my organisation) - er5 (I do not feel like "part of the family" at my organisation)	352.228 (98)***	3.594	.002	.0688	.894	.914	.086***
Model 5: Sample 1 4 Factor Model minus OC2 and OC14; plus covaried er14-er15, er3-er5 and er4 (I do not feel "emotionally attached" to this organisation) - er5 (I do not feel like "part of the family" at my organisation)	339.304 (97)***	3.498	.002	.0681	.898	.918	.085***
Final Model: Sample 1 4 Factor Model minus OC2 and OC14; plus covaried er14-er15, er3-er5, er4-er5 and er3 (I do not feel a strong sense of "belonging" to my organisation) -er4 (I do not feel "emotionally attached" to this organisation) - er5 (I do not feel like "part of the family" at my organisation) (Final Model)	317.808 (96)***	3.310	.002	.0674	.906	.925	.081***
Final Model: Sample 2 4 Factor Model minus OC2 and OC14; plus covaried er14-er15, er3-er5, er4-er5 and er3-er4 (Final Model)	286.277 (96)***	2.982	.002	.0631	.924	.940	.075***

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1

Appendix 8.5 combined datasets standardised regression loadings of the organisational commitment final model in sample 1 and sample 2

Combined Datasets Standardised Regression Loadings of the Organisational Commitment Final Model in Sample 1

			ML Estimate	SE Estimate	CR	df	p	ML Estimate
Standardized Regression Weights								
OC16A6	<---	AOC	0.827	0.026	31.619	24441.539	0.000	***
OC13A5Reverse	<---	AOC	0.642	0.047	13.606	65488.928	0.000	***
OC10A4Reverse	<---	AOC	0.702	0.046	15.429	177227.309	0.000	***
OC7A3Reverse	<---	AOC	0.724	0.039	18.699	110992.624	0.000	***
OC4A2	<---	AOC	0.642	0.043	14.803	78253.402	0.000	***
OC1A1	<---	AOC	0.678	0.032	21.383	92821.778	0.000	***
OC18N6	<---	NOC	0.797	0.027	29.734	20773.029	0.000	***
OC15N5	<---	NOC	0.737	0.044	16.884	823253.778	0.000	***
OC12N4	<---	NOC	0.806	0.027	29.609	15252.250	0.000	***
OC9N3	<---	NOC	0.725	0.033	21.847	35763.879	0.000	***
OC6N2	<---	NOC	0.624	0.046	13.515	14825.564	0.000	***
OC3N1Reverse	<---	NOC	0.603	0.047	12.814	5236.840	0.000	***
OC8C3	<---	COC_HiSac	0.796	0.028	28.214	16621.802	0.000	***
OC5C2	<---	COC_HiSac	0.801	0.028	28.508	494.461	0.000	***
OC17C6	<---	COC_LoAlt	0.761	0.029	26.320	1661.556	0.000	***
OC11C4	<---	COC_LoAlt	0.784	0.029	26.954	3697.549	0.000	***

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1

Combined Datasets Standardised Regression Loadings of the Organisational Commitment Final Model in Sample 2

			ML Estimate	SE Estimate	CR	df	p	ML Estimate
Standardized Regression Weights								
OC16A6	<---	AOC	0.880	0.023	38.157	100413.538	0.000	***
OC13A5Reverse	<---	AOC	0.706	0.037	18.875	8698.671	0.000	***
OC10A4Reverse	<---	AOC	0.735	0.038	19.091	264281.674	0.000	***
OC7A3Reverse	<---	AOC	0.771	0.034	22.871	4187.076	0.000	***
OC4A2	<---	AOC	0.596	0.047	12.706	19496.512	0.000	***
OC1A1	<---	AOC	0.676	0.035	19.046	199333.751	0.000	***
OC18N6	<---	NOC	0.794	0.028	27.942	19228.444	0.000	***
OC15N5	<---	NOC	0.779	0.026	29.707	1766.052	0.000	***
OC12N4	<---	NOC	0.840	0.022	37.362	6096.525	0.000	***
OC9N3	<---	NOC	0.716	0.037	19.241	38166.148	0.000	***
OC6N2	<---	NOC	0.646	0.047	13.783	9403.868	0.000	***
OC3N1Reverse	<---	NOC	0.689	0.035	19.413	5425.916	0.000	***
OC8C3	<---	COC_HiSac	0.763	0.031	24.333	41956.694	0.000	***
OC5C2	<---	COC_HiSac	0.739	0.033	22.326	110224.000	0.000	***
OC17C6	<---	COC_LoAlt	0.677	0.033	20.279	3540.250	0.000	***
OC11C4	<---	COC_LoAlt	0.751	0.040	18.604	5470.356	0.000	***

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1

Table The Average Variance Extracted (AVE), Maximum Shared Squared Variance (MSV), and Average Shared Squared Variance (ASV), Composite Reliabilities (CR) and Correlations in the final model of Organisational Commitment in Sample 1 (see section 7.8)

	CR	AVE	MSV	ASV	NOC	AOC	COC_LoAlt	COC_HiSac
NOC	0.864	0.518	0.928	0.363	0.719			
AOC	0.855	0.498	0.928	0.358	0.963	0.705		
COC_LoAlt	0.748	0.597	0.383	0.156	-0.077	-0.280	0.773	
COC_HiSac	0.779	0.638	0.383	0.202	0.394	0.258	0.619	0.799

AOC=affective-organisational commitment, NOC=normative-organisational commitment, COC_LoAlt=low-alternative organisational commitment, COC_HiSac=High-sacrifice organisational commitment

Table The Average Variance Extracted (AVE), Maximum Shared Squared Variance (MSV), and Average Shared Squared Variance (ASV), Composite Reliabilities (CR) and Correlations in the final model of Organisational Commitment in Sample 2 (see section 7.8)

	CR	AVE	MSV	ASV	NOC	AOC	COC_LoAlt	COC_HiSac
NOC	0.883	0.558	0.927	0.367	0.747			
AOC	0.873	0.537	0.927	0.351	0.963	0.733		
COC_LoAlt	0.676	0.511	0.521	0.179	-0.028	-0.120	0.715	
COC_HiSac	0.721	0.564	0.521	0.268	0.415	0.334	0.722	0.751

AOC=affective-organisational commitment, NOC=normative-organisational commitment, COC_LoAlt=low-alternative organisational commitment, COC_HiSac=High-sacrifice organisational commitment

Model	$X^2(df)$	X^2/df	B-S P-Value	SRMR	TLI	CFI	RMSEA
Model 1: Sample 1 4 Factor Model	453.437 (48)***	9.447	.002	.0730	.733	.806	.156***
Model 2: Sample 1 4 Factor Model plus covaried er5 (How likely is it that you will search for a job in another organisation?) - er8 (How likely is it that you will search for a job in another sector?)	384.691 (47)***	8.188	.002	.0774	.773	.839	.144***
Model 3: Sample 1 4 Factor Model plus covaried er5-er8 and er6 (How likely is it that you will actually leave the organisation within the next year) - er9 (How likely is it that you will actually leave the sector within the next year?)	322.525 (46)***	7.011	.002	.0706	.810	.868	.131***
Model 4: Sample 1 4 Factor Model plus covaried er5-er8, er6-er9 and er3 (How likely is it that you will actually leave the pharmacy profession within the next year) - er9 (How likely is it that you will actually leave the sector within the next year?)	287.512 (45)***	6.353	.002	.0674	.832	.884	.123***
Model 5: Sample 1 4 Factor Model plus covaried er5-er8, er6-er9, er3-er9 and er3 (How likely is it that you will actually leave the pharmacy profession within the next year) - er6 (How likely is it that you will actually leave the organisation within the next year)	221.475 (44)***	5.034	.002	.0652	.873	.916	.108***
Model 6: Sample 1 4 Factor Model plus covaried er5-er8, er6-er9, er3-er9, er3-er6 and er1 (How frequently do you think about leaving your current profession?) - er4 (How frequently do you think about leaving your current organisation?)	213.670 (43)***	4.969	.002	.0638	.875	.919	.107***
Model 7: Sample 1 4 Factor Model plus covaried er5-er8, er6-er9, er3-er9, er3-er6, er1-er4 and er2 (How likely is it that you will search for a job in another profession?) -er5 (How likely is it that you will search for a job in another organisation?)	200.902 (42)***	4.783	.002	.0626	.881	.924	.104***
Final Model: Sample 1 4 Factor Model plus covaried er5-er8, er6-er9, er3-er9, er3-er6, er1-er4, er2-er5 and er2 (How likely is it that you will search for a job in another profession?) - er8 (How likely is it that you will search for a job in another sector?)	170.124 (41)***	4.149	.002	.0624	.901	.939	.095***
Final Model: Sample 2 4 Factor Model plus covaried er5-er8, er6-er9, er3-er9, er3-er6, er1-er4, er2-er5 and er2-er8	189.580 (41)***	4.624	.002	.0521	.904	.940	.101***

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1

Appendix 8.8 Combined Datasets Standardised Regression Loadings of the Withdrawal Behaviour Final model in sample 1 and sample 2

Combined Datasets Standardised Regression Loadings of the Withdrawal Behaviour Final Model in Sample 1

			ML Estimate	SE Estimate	CR	df	p	ML Estimate
Standardized Regression Weights								
PWB3	<---	PWB	0.700	0.046	15.192	865030.531	0.000	***
PWB2	<---	PWB	0.666	0.048	13.760	10600812.457	0.000	***
PWB1	<---	PWB	0.734	0.047	15.599	2568726.264	0.000	***
OWB3	<---	OWB	0.815	0.034	23.753	85846.085	0.000	***
OWB2	<---	OWB	0.703	0.048	14.668	116984.358	0.000	***
OWB1	<---	OWB	0.742	0.047	15.673	2567.660	0.000	***
SWB3	<---	SWB	0.827	0.034	24.305	1654939.309	0.000	***
SWB2	<---	SWB	0.712	0.050	14.229	27147573.444	0.000	***
SWB1	<---	SWB	0.847	0.035	24.203	104250906.778	0.000	***
RHWB3	<---	RHWB	0.754	0.036	20.712		0.000	***
RHWB2	<---	RHWB	0.788	0.043	18.320	237478373.444	0.000	***
RHWB1	<---	RHWB	0.797	0.033	24.135	36626704.000	0.000	***

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1

Combined Datasets Standardised Regression Loadings of the Withdrawal Behaviour Final Model in Sample 2

			ML Estimate	SE Estimate	CR	df	p	ML Estimate
Standardized Regression Weights								
PWB3	<---	PWB	0.610	0.053	11.499	12983641.541	0.000	***
PWB2	<---	PWB	0.681	0.050	13.665	5922256.265	0.000	***
PWB1	<---	PWB	0.723	0.048	15.056	2028408.938	0.000	***
OWB3	<---	OWB	0.762	0.036	21.150	598191.755	0.000	***
OWB2	<---	OWB	0.763	0.043	17.875	497713.843	0.000	***
OWB1	<---	OWB	0.784	0.038	20.670	89825.085	0.000	***
SWB3	<---	SWB	0.735	0.043	17.084	875793.481	0.000	***
SWB2	<---	SWB	0.625	0.049	12.757	32703148.444	0.000	***
SWB1	<---	SWB	0.886	0.030	29.701	761752.458	0.000	***
RHWB3	<---	RHWB	0.818	0.031	26.346	413020.444	0.000	***
RHWB2	<---	RHWB	0.856	0.031	27.475	44103.636	0.000	***
RHWB1	<---	RHWB	0.756	0.033	22.806	56508.082	0.000	***

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1

Appendix 8.9 construct validity of withdrawal behaviours

The Average Variance Extracted (AVE), Maximum Shared Squared Variance (MSV), and Average Shared Squared Variance (ASV), Composite Reliabilities (CR) and Correlations in the final model of Withdrawal behaviour in Sample 1 (see section 7.8)

	CR	AVE	MSV	ASV	SWB	PWB	OWB	RHWB
SWB	0.839	0.636	0.489	0.363	0.798			
PWB	0.742	0.490	0.489	0.331	0.700	0.700		
OWB	0.799	0.570	0.405	0.273	0.636	0.520	0.755	
RHWB	0.823	0.608	0.234	0.191	0.441	0.484	0.380	0.780

PWB=professional-withdrawal behaviour, Organisational-withdrawal behaviour, SWB=sector-withdrawal behaviour, RHWB=Reduction-in-hours withdrawal behaviour.

The Average Variance Extracted (AVE), Maximum Shared Squared Variance (MSV), and Average Shared Squared Variance (ASV), Composite Reliabilities (CR) and Correlations in the final model of Withdrawal Behaviour in Sample 2 (see section 7.8)

	CR	AVE	MSV	ASV	SWB	PWB	OWB	RHWB
SWB	0.797	0.572	0.655	0.424	0.757			
PWB	0.712	0.453	0.655	0.472	0.809	0.673		
OWB	0.813	0.592	0.461	0.386	0.641	0.679	0.770	
RHWB	0.852	0.658	0.299	0.264	0.455	0.546	0.536	0.811

PWB=professional-withdrawal behaviour, Organisational-withdrawal behaviour, SWB=sector-withdrawal behaviour, RHWB=Reduction-in-hours withdrawal behaviour.

Appendix 8.10 A Comparison of overall model fit between the various models of modified Work-performance Behaviour in Sample 1 and final comparison in sample 2, using naive pooling (median) of multiply-imputed datasets (see Appendix 12)

Model	$X^2(df)$	X^2/df	B-S P-Value	SRMR	TLI	CFI	RMSEA
Model 1: Sample 1 3 Factor Model	756.699 (186)***	4.068	.002	.0715	.822	.842	.094***
Model 2: Sample 1 3 Factor Model minus OCB5 (I engage in activities that will directly affect my performance evaluation), OCB6 (I neglect aspects of my job I am obligated to perform), OCB7 (I fail to perform essential duties), OCB10 (I assist my supervisor/line-manager with his/her work (when not asked)) and OCB19 (I complain about insignificant things at work)	422.627 (101)***	4.188	.002	.0638	.875	.895	.096***
Model 3: Sample 1 3 Factor Model minus OCB5, OCB6, OCB7, OCB10 and OCB19; plus covaried er8 (I help others who have been absent) - er9 (I help others who have a heavy workload)	279.248 (100)***	2.792	.002	.0543	.930	.941	.072***
Final Model: Sample 1 3 Factor Model minus OCB5, OCB6, OCB7, OCB10 and OCB19; plus covaried er8-er9 and er20 (I conserve and protect organisational property) - er21 (I adhere to informal rules devised to maintain order) (Final Model)	145.497 (99)**	1.470	.096	.0404	.982	.985	.037++
Final Model: Sample 2 3 Factor Model minus OCB5, OCB6, OCB7, OCB10 and OCB19; plus covaried er8-er9 and er20-er21 (Final Model)	170.779 (99)***	1.764	.020	.0405	.972	.977	.046++

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1

Appendix 8.11 combined datasets standardised regression loadings of the work-performance behaviour final model in sample 1 and sample 2

Combined Datasets Standardised Regression Loadings of the Work-performance Behaviour Final Model in Sample 1

			ML Estimate	SE Estimate	CR	df	p	ML Estimate
Standardized Regression Weights								
IRBfour4	<--	IRB	0.843	0.032	26.344	4559648.444	0.000	***
IRBthree3	<--	IRB	0.956	0.014	68.286	449519666304	0.000	***
IRBtwo2	<--	IRB	0.931	0.015	61.984	565504.000	0.000	***
IRBone1	<--	IRB	0.869	0.037	23.490	130195706.77	0.000	***
ERBIfourteen7	<--	ERBI	0.735	0.060	12.241	1112494.478	0.000	***
ERBIthirteen6	<--	ERBI	0.797	0.030	26.575	25020004.000	0.000	***
ERBItwelve5	<--	ERBI	0.779	0.036	21.398	2893313.770	0.000	***
ERBIeleven4	<--	ERBI	0.745	0.041	18.050	248376.912	0.000	***
ERBInine2	<--	ERBI	0.497	0.069	7.199	43751610.25	0.000	***
ERBIeight1	<--	ERBI	0.474	0.056	8.391	868951.048	0.000	***
ERBOtwentyone7	<--	ERBO	0.464	0.078	5.930	72175408.15	0.000	***
ERBOtwenty6	<--	ERBO	0.385	0.074	5.200	5215133.444	0.000	***
ERBOeighteen4Reverse	<--	ERBO	0.565	0.091	6.205	3895736.057	0.000	***
ERBOseventeen3Reverse	<--	ERBO	0.626	0.106	5.907	34270291.67	0.000	***
ERBOsixteen2	<--	ERBO	0.678	0.076	8.977	55110.944	0.000	***
ERBOfifteen1	<--	ERBO	0.668	0.079	8.477	14707887.84	0.000	***

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1

Combined Datasets Standardised Regression Loadings of the Work-performance Behaviour Final Model in Sample 2

			ML Estimate	SE Estimate	CR	df	p	ML Estimate
Standardized Regression Weights								
IRBfour4	<--	IRB	0.851	0.029	29.282	271582.525	0.000	***
IRBthree3	<--	IRB	0.941	0.012	76.875	97604.174	0.000	***
IRBtwo2	<--	IRB	0.909	0.021	43.089	53679.098	0.000	***
IRBone1	<--	IRB	0.868	0.023	36.956	107630.862	0.000	***
ERBIfourteen7	<--	ERBI	0.787	0.041	19.088	37108.213	0.000	***
ERBIthirteen6	<--	ERBI	0.764	0.052	14.646	95275.111	0.000	***
ERBItwelve5	<--	ERBI	0.826	0.027	30.069	3493.383	0.000	***
ERBIeleven4	<--	ERBI	0.795	0.031	25.944	612306.250	0.000	***
ERBInine2	<--	ERBI	0.580	0.057	10.161	50279.723	0.000	***
ERBIeight1	<--	ERBI	0.504	0.054	9.274	10299.111	0.000	***
ERBOtwentyone7	<--	ERB	0.627	0.055	11.37	169788.664	0.00	***

	-	O				7		0	
ERBOtwenty6	<--	ERB O	0.607	0.056	10.75 0	2059664.57 3	0.00 0	***
ERBOeighteen4Reverse	<--	ERB O	0.403	0.102	3.954	153132.334	0.00 0	***
ERBOseventeen3Reverse	<--	ERB O	0.724	0.071	10.18 4	48483.517	0.00 0	***
ERBOsixteen2	<--	ERB O	0.724	0.080	9.020	76767.080	0.00 0	***
ERBOfifteen1	<--	ERB O	0.620	0.077	8.074	362625.629	0.00 0	***

*** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1

Table The Average Variance Extracted (AVE), Maximum Shared Squared Variance (MSV), and Average Shared Squared Variance (ASV), Composite Reliabilities (CR) and Correlations in the final model of Work-performance Behaviour in Sample 1 (see section 7.8)

	CR	AVE	MSV	ASV	ERBI	IRB	ERBO
ERBI	0.836	0.468	0.502	0.358	0.684		
IRB	0.945	0.812	0.330	0.272	0.463	0.901	
ERBO	0.740	0.330	0.502	0.416	0.708	0.575	0.575

IRB=In-role behaviour, ERBI=Extra-role behaviour towards the individual, ERBO=Extra-role behaviour towards the organisation

Table The Average Variance Extracted (AVE), Maximum Shared Squared Variance (MSV), and Average Shared Squared Variance (ASV), Composite Reliabilities (CR) and Correlations in the final model of Work-performance behaviour in Sample 2 (see section 7.8)

	CR	AVE	MSV	ASV	ERBI	IRB	ERBO
ERBI	0.862	0.518	0.627	0.428	0.720		
IRB	0.940	0.797	0.332	0.281	0.479	0.893	
ERBO	0.790	0.393	0.627	0.479	0.792	0.576	0.627

IRB=In-role behaviour, ERBI=Extra-role behaviour towards the individual, ERBO=Extra-role behaviour towards the organisation

Appendix 8.13 A comparison of the different models of the Full Measurement Model using naive pooling (median) of the multiply-imputed datasets (see Appendices 12)

Model	$X^2(df)$	X^2/df	B-S P-Value	SRMR	TLI	CFI	RMSEA	ECVI
One Factor Model (all indicators load onto one latent variable)	20979.445 (2277) ***	9.222	.002	.1372	.253	.275	.108	30.192
Four Factor Model (PC, OC, WB and WPB load onto four separate latent variables)	13144.155 (2271) ***	5.788	.002	.0940	.565	.579	.082***	19.080
Five Factor Model (AC, CC, NC, WB and WPB each load onto five separate latent variables)	13100.037 (2267) ***	5.779	.002	.0948	.566	.580	.082***	19.030
Thirteen Factor Model Orthogonal (AOC, COC, NOC, APC, CPC, NPC, PWB, OWB, SWB, RHWB, IRB ERBI and ERBO all loaded on thirteen separate latent variables)	6957.24 (2202) ***	3.153	.005	.0657	.804	.816	.055***	10.454
Fourteen Factor Model Orthogonal (AOC, COC_HiSac, COC_LoAlt, NOC, APC, CPC, NPC, PWB, OWB, SWB, RHWB, IRB ERBI and ERBO all loaded on fourteen separate latent variables)	6736.055 (2191) ***	3.074	.005	.0613	.811	.825	.054***	10.205
Fourteen Factor Model Oblique (AOC, COC_HiSac, COC_LoAlt, NOC, APC, CPC, NPC, PWB, OWB, SWB, RHWB, IRB ERBI and ERBO all loaded on fourteen separate latent variables)	3566.141 (1551) ***	2.299	.002	.0509	.905	.914	.043++	5.688

APC= affective-professional commitment, CPC= continuance-professional commitment, NPC=normative-professional commitment, AOC=affective-organisational commitment, NOC=normative-organisational commitment, COC_LoAlt=low-alternative organisational commitment, COC_HiSac=High-sacrifice organisational commitment, PWB=professional-withdrawal behaviour, Organisational-withdrawal behaviour, SWB=sector-withdrawal behaviour, RHWB=Reduction-in-hours withdrawal behaviour, IRB=In-role behaviour, ERBI=Extra-role behaviour towards the individual, ERBO=Extra-role behaviour towards the organisation ***** p < 0.001, ** p<0.01, * p<0.05, + p≥0.05, ++ p≥0.1**

Appendix 8.14 Convergent and discriminant validity of the full measurement models

	CR	AVE	MSV	ASV	RHWB	IRB	ERBI	ERBO	NOC	COC_LoAlt	COC_HiSac	CPC	NPC	AOC	APC	OWB	PWB	SWB
RHWB	0.837	0.631	0.272	0.073	0.794													
IRB	0.943	0.805	0.326	0.052	-0.111	0.897												
ERBI	0.849	0.492	0.565	0.069	-0.056	0.472	0.702											
ERBO	0.767	0.359	0.565	0.080	-0.100	0.571	0.751	0.599										
NOC	0.875	0.541	0.922	0.159	-0.226	0.053	0.072	0.015	0.735									
COC_LoAlt	0.715	0.556	0.443	0.068	0.051	-0.104	-0.017	0.007	-0.047	0.746								
COC_HiSac	0.749	0.599	0.443	0.079	0.032	-0.044	-0.005	-0.005	0.410	0.665	0.774							
CPC	0.797	0.504	0.258	0.050	-0.041	0.079	0.154	0.236	0.035	0.429	0.508	0.710						
NPC	0.855	0.499	0.306	0.085	-0.111	0.053	0.051	0.006	0.521	0.036	0.229	0.197	0.707					
AOC	0.866	0.521	0.922	0.163	-0.266	0.106	0.145	0.090	0.960	-0.209	0.283	0.015	0.390	0.722				
APC	0.861	0.553	0.335	0.129	-0.290	0.210	0.235	0.196	0.385	-0.322	-0.111	0.098	0.553	0.441	0.744			
OWB	0.813	0.592	0.430	0.151	0.474	-0.113	-0.047	-0.111	-0.510	0.204	-0.074	0.035	-0.254	-0.584	-0.419	0.770		
PWB	0.736	0.481	0.568	0.153	0.522	-0.105	-0.001	-0.081	-0.304	0.164	-0.045	0.212	0.375	0.317	0.579	0.627	0.694	
SWB	0.810	0.589	0.568	0.141	0.454	-0.117	-0.042	-0.112	-0.382	0.147	-0.063	0.149	0.242	0.410	0.418	0.656	0.754	0.767

Below 30 years of age

	apc	cpc	npc	aoc	coc	Hsoc	Laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.40	1													
Npc	0.31	0.13	1												
Aoc	0.33	-0.05	0.29	1											
Coc	-0.06	0.51*	0.22	-0.17	1										
Hsoc	0.14	0.44	0.34	0.10	0.79*	1									
Laoc	-0.21	0.40	0.04	-0.32	0.84*	0.35	1								
Noc	0.29	0.12	0.50	0.74*	0.06	0.28	-0.12	1							
Pwb	-0.57*	-0.13	-0.18	-0.19	0.14	-0.04	0.21	-0.13	1						
Owb	-0.18	0.11	-0.09	-0.47*	0.12	-0.03	0.15	-0.38	0.45*	1					
Swb	-0.37	-0.09	-0.09	-0.06	0.07	-0.01	0.08	-0.13	0.66*	0.48*	1				
Rhwb	-0.31	-0.18	0.14	-0.11	0.20	0.15	0.10	-0.04	0.43*	0.32	0.34	1			
Irb	0.12	-0.01	0.08	-0.19	0.02	-0.15	0.20	-0.11	-0.08	-0.06	-0.08	-0.18	1		
Erbi	0.07	0.22	0.08	-0.13	0.22	0.11	0.24	-0.14	0.04	0.09	0.06	0.10	0.37	1	
Erbo	0.29	0.15	0.02	-0.12	0.11	0.09	0.08	-0.22	-0.29	-0.07	-0.10	-0.19	0.36	0.50*	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.09	1													
Npc	0.37*	0.03	1												
Aoc	0.30	0.05	0.32	1											
Coc	-0.05	0.25	0.19	0.10	1										
Hsoc	-0.01	0.17	0.24	0.26	0.83*	1.00									
Laoc	-0.11	0.28	0.08	-0.10	0.83*	0.40*	1.00								
Noc	0.26	0.07	0.43*	0.86*	0.24	0.38*	0.01	1							
Pwb	-0.48*	-0.15	-0.35	-0.38*	0.10	0.03	0.16	-0.33	1						
Owb	-0.39*	0.01	-0.20	-0.52*	0.09	-0.06	0.20	-0.41*	0.56*	1					
Swb	-0.39*	-0.11	-0.26	-0.37*	0.10	-0.01	0.19	-0.33	0.70*	0.57*	1				
Rhwb	-0.25	-0.07	-0.22	-0.21	0.03	0.05	-0.02	-0.17	0.53*	0.33	0.36*	1			
Irb	0.17	0.15	-0.08	0.08	-0.05	-0.11	0.01	-0.01	-0.13	0.01	-0.02	-0.13	1		
Erbi	0.18	0.13	0.01	0.01	-0.07	0.01	-0.12	-0.01	0.05	-0.01	0.10	-0.08	0.19	1	
Erbo	0.16	0.23	0.03	0.02	-0.04	-0.11	0.03	-0.06	-0.14	-0.07	-0.21	-0.22	0.32	0.42*	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

	apc	cpc	npc	aoc	coc	Hsoc	Laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.09	1													
Npc	0.39*	0.21	1												
Aoc	0.35*	-0.01	0.31	1											
Coc	-0.29*	0.45*	0.10	-0.05	1										
Hsoc	-0.23	0.42*	0.20	0.07	0.89*	1.00									
Laoc	-0.29	0.39*	0.00	-0.18	0.90*	0.62*	1.00								
Noc	0.26	-0.01	0.49*	0.80*	0.11	0.25	-0.05	1							
Pwb	-0.67*	-0.17	-0.26	-0.29*	0.17	0.10	0.22	-0.24	1						
Owb	-0.37*	0.03	-0.20	-0.68*	0.16	0.09	0.21	-0.55*	0.52*	1					
Swb	-0.43*	-0.10	-0.14	-0.42*	0.12	0.11	0.12	-0.36*	0.65*	0.61*	1				
Rhwb	-0.30*	0.01	-0.08	-0.13	0.17	0.20	0.10	-0.03	0.40*	0.32*	0.38*	1			
Irb	0.41*	-0.02	0.21	0.24	-0.20	-0.17	-0.19	0.17	-0.26	-0.24	-0.23	-0.11	1		
Erbi	0.27	0.08	0.09	0.25	-0.04	-0.01	-0.07	0.20	-0.13	-0.22	-0.23	-0.18	0.37*	1	
Erbo	0.24	0.01	0.01	0.26	-0.14	-0.12	-0.13	0.12	-0.21	-0.28*	-0.27*	-0.23	0.48*	0.40*	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

51 to 60 years of age

	apc	cpc	npc	aoc	coc	Hsoc	Laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.0991	1													
Npc	0.49*	0.2282	1												
Aoc	0.46*	0.0387	0.32*	1											
Coc	-0.14	0.37*	0.21*	-0.08	1										
Hsoc	-0.03	0.31*	0.33*	0.13	0.85*	1.00									
Laoc	-0.23	0.33*	0.05	-0.25	0.89*	0.53*	1.00								
Noc	0.45*	0.03	0.56*	0.78*	0.12	0.33*	-0.09	1							
Pwb	-0.50*	-0.17	-0.31*	-0.36*	0.04	-0.05	0.12	-0.40*	1						
Owb	-0.42*	-0.04	-0.20	-0.49*	0.10	-0.06	0.25	-0.45*	0.64*	1					
Swb	-0.41*	-0.15	-0.10	-0.32*	0.10	-0.01	0.18	-0.26	0.58*	0.62*	1				
Rhwb	-0.20	0.04	-0.02	-0.27*	0.11	0.09	0.11	-0.16	0.40*	0.49*	0.38*	1			
Irb	0.27*	-0.03	0.10	0.15	-0.09	-0.02	-0.14	0.08	-0.24	-0.24	-0.25	-0.21	1		
Erbi	0.24	0.03	0.08	0.17	-0.01	-0.03	-0.02	0.11	-0.10	-0.08	-0.13	0.01	0.36*	1	
Erbo	0.24	0.13	0.03	0.18	0.01	0.02	-0.01	0.07	-0.12	-0.11	-0.07	-0.05	0.43*	0.37*	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

61 years and older

	apc	cpc	npc	aoc	coc	Hsoc	Laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.19*	1													
Npc	0.69*	0.2391	1												
Aoc	0.47*	0.06	0.45*	1											
Coc	-0.03	0.37	0.33	0.02	1										
Hsoc	0.05	0.31	0.38	0.12	0.91*	1.00									
Laoc	-0.10	0.34	0.24	-0.10	0.91*	0.68*	1.00								
Noc	0.45*	0.07	0.55*	0.77*	0.19	0.27	0.11	1							
Pwb	-0.48*	-0.19	-0.34	-0.29	-0.14	-0.16	-0.12	-0.39	1						
Owb	-0.39	-0.06	-0.18	-0.46*	-0.02	-0.06	-0.04	-0.47*	0.65*	1					
Swb	-0.45*	-0.18	-0.37	-0.19	-0.26	-0.23	-0.24	-0.38	0.85*	0.58*	1				
Rhwb	-0.27	0.14	-0.11	-0.47*	0.13	0.13	0.08	-0.43	0.42	0.54*	0.3187	1			
Irb	0.29	0.08	0.34	0.23	0.04	0.17	-0.08	0.22	-0.33	-0.28	-0.27	-0.08	1		
Erbi	0.15	0.23	0.27	0.32	0.01	0.00	0.05	0.38	-0.10	-0.21	-0.08	-0.14	0.34	1	
Erbo	0.37	0.34	0.42	0.29	0.13	0.09	0.12	0.32	-0.13	-0.02	-0.20	0.08	0.37	0.48*	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

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Gender: Male

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.16	1													
Npc	0.50*	0.13	1												
Aoc	0.35*	0.01	0.43*	1											
Coc	-0.22	0.42*	0.11	-0.02	1										
Hsoc	-0.15	0.35*	0.24	0.16	0.90*	1									
Laoc	-0.25*	0.4*	-0.04	-0.20	0.88*	0.60*	1								
Noc	0.30*	0.01	0.58*	0.80*	0.13	0.29*	-0.04	1							
Pwb	-0.50*	-0.21	-0.27*	-0.27*	0.08	0.03	0.11	-0.25*	1						
Owb	-0.36*	-0.10	-0.29*	-0.48*	0.08	-0.01	0.14	-0.44*	0.66*	1					
Swb	-0.36*	-0.19	-0.21	-0.28*	0.06	0.01	0.08	-0.23	0.70*	0.60*	1				
Rhwb	-0.26*	-0.10	-0.11	-0.25*	0.08	0.09	0.04	-0.22	0.43*	0.40*	0.40	1			
Irb	0.27*	0.02	0.13	0.08	-0.14	-0.13	-0.15	0.01	-0.25	-0.17	-0.21	-0.16	1		
Erbi	0.25*	0.06	0.17	0.11	-0.14	-0.13	-0.13	0.09	-0.09	-0.12	-0.13	-0.04	0.36*	1	
Erbo	0.34*	0.11	0.14	0.18	-0.14	-0.11	-0.16	0.07	-0.20	-0.18	-0.28*	-0.10	0.43*	0.47*	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Gender: Female

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.11	1													
Npc	0.40*	0.22*	1												
Aoc	0.42*	0.03	0.25	1											
Coc	-0.14	0.38*	0.22*	-0.05	1										
Hsoc	-0.02	0.34*	0.30*	0.12	0.85*	1									
Laoc	-0.22*	0.32*	0.11	-0.19	0.88*	0.52*	1								
Noc	0.36*	0.07	0.47*	0.78*	0.16	0.34*	-0.03	1							
Pwb	-0.56*	-0.15	-0.30*	-0.35*	0.07	-0.04	0.16	-0.34*	1						
Owb	-0.37*	0.05	-0.13	-0.58*	0.14	0.01	0.24*	-0.47*	0.52*	1					
Swb	-0.42*	-0.10	-0.13	-0.33*	0.07	-0.01	0.13	-0.32*	0.63*	0.58*	1				
Rhwb	-0.23*	0.01	-0.05	-0.20*	0.11	0.11	0.8	-0.09	0.43*	0.40*	0.36*	1			
Irb	0.27*	0.001	0.11	0.16	-0.07	-0.06	-0.05	0.11	-0.16	-0.18	-0.16	-0.11	1		
Erbi	0.18	0.11	0.01	0.18	0.05	0.07	0.01	0.12	-0.01	-0.08	-0.06	0.01	0.31	1	
erbo	0.19	0.13	0.01	0.12	0.01	-0.03	0.03	0.03	-0.13	-0.13	-0.10	-0.15	0.39*	0.36*	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Appendix 9.3 Inter-correlations by Ethnicity

Ethnicity: White

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1.00														
Cpc	0.12	1.00													
Npc	0.41*	0.15	1.00												
Aoc	0.36*	0.04	0.31*	1.00											
Coc	-0.18*	0.39*	0.16	-0.01	1.00										
Hsoc	-0.09	0.34*	0.24*	0.15	0.87*	1.00									
Laoc	-0.25*	0.35*	0.04	-0.17*	0.88*	0.55*	1.00								
Noc	0.32*	0.04	0.48*	0.81*	0.14	0.30*	-0.04	1.00							
Pwb	-0.54*	-0.21*	-0.29*	-0.31*	0.05	-0.04	0.13	-0.35*	1.00						
Owb	-0.36*	-0.05	-0.19*	-0.55*	0.07	-0.06	0.18	-0.49*	0.56*	1.00					
Swb	-0.36*	-0.14	-0.16	-0.31*	0.04	-0.02	0.10	-0.32*	0.63*	0.60*	1.00				
Rhwb	-0.19*	-0.02	-0.04	-0.24*	0.06	0.06	0.05	-0.19*	0.41*	0.40*	0.34*	1.00			
Irb	0.29*	0.01	0.11	0.13	-0.13	-0.12	-0.13	0.09	-0.23*	-0.24*	-0.19*	-0.13	1.00		
Erbi	0.22*	0.09	0.12	0.18*	-0.01	-0.01	-0.02	0.14	-0.06	-0.13	-0.10	-0.02	0.34*	1.00	
erbo	0.26*	0.14*	0.01	0.15	-0.03	-0.04	-0.03	0.04	-0.15	-0.16	-0.17*	-0.09	0.41*	0.39*	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Ethnicity: Minority

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1.00														
Cpc	0.15	1.00													
Npc	0.53*	0.26	1.00												
Aoc	0.45*	-0.03	0.33*	1.00											
Coc	-0.20	0.39*	0.17	-0.11	1.00										
Hsoc	-0.09	0.35*	0.29	0.09	0.86*	1.00									
Laoc	-0.23	0.34*	0.01	-0.27	0.87*	0.51*	1.00								
Noc	0.34*	0.07	0.59*	0.74*	0.16	0.34*	-0.04	1.00							
Pwb	-0.52*	-0.03	-0.29	-0.33*	0.18	0.12	0.18	-0.17	1.00						
Owb	-0.39*	0.14	-0.20	-0.51*	0.28	0.18	0.28	-0.39*	0.58*	1.00					
Swb	-0.49*	-0.09	-0.22	-0.33*	0.14	0.05	0.17	-0.23	0.73*	0.53*	1.00				
Rhwb	-0.41*	0.01	-0.22	-0.19	0.26	0.26	0.15	-0.04	0.49*	0.39*	0.39*	1.00			
Irb	0.25	0.02	0.11	0.12	0.02	0.01	0.06	0.01	-0.16	-0.04	-0.22	-0.22	1.00		
Erbi	0.24	0.11	0.05	0.08	-0.01	0.01	-0.02	0.02	-0.05	0.00	-0.06	-0.08	0.38*	1.00	
Erbo	0.26	0.08	0.24	0.15	-0.07	-0.10	-0.06	0.09	-0.19	-0.13	-0.19	-0.23	0.40*	0.46*	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Appendix 9.4 Inter-correlations by Breadwinner

Main Breadwinner - Yes

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1.00														
Cpc	0.10	1.00													
Npc	0.47*	0.11	1.00												
Aoc	0.36*	0.00	0.36*	1.00											
Coc	-0.19	0.40*	0.14	-0.07	1.00										
Hsoc	-0.11	0.35*	0.26*	0.13	0.87*	1.00									
Laoc	-0.22*	0.35*	0.00	-0.23*	0.88*	0.56*	1.00								
Noc	0.36*	-0.02	0.55*	0.80*	0.10	0.29*	-0.08	1.00							
Pwb	-0.55*	-0.15	-0.24*	-0.28*	0.12	0.03	0.18	-0.27*	1.00						
Owb	-0.34*	-0.02	-0.19	-0.48*	0.12	0.00	0.18	-0.42*	0.54*	1.00					
Swb	-0.43*	-0.15	-0.18	-0.26*	0.06	-0.01	0.10	-0.28*	0.64*	0.52*	1.00				
Rhwb	-0.25*	-0.08	-0.08	-0.25*	0.04	0.04	0.02	-0.22*	0.43*	0.42*	0.36*	1.00			
Irb	0.34*	0.01	0.12	0.12	-0.22*	-0.22*	-0.19	0.06	-0.25*	-0.17	-0.22*	-0.20	1.00		
Erbi	0.29*	0.05	0.17	0.13	-0.08	-0.10	-0.04	0.09	-0.08	-0.11	-0.13	-0.07	0.36*	1.00	
Erbo	0.31*	0.08	0.11	0.13	-0.12	-0.10	-0.13	0.03	-0.13	-0.11	-0.20	-0.11	0.44*	0.45*	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1.00														
Cpc	0.20	1.00													
Npc	0.43*	0.29	1.00												
Aoc	0.46*	0.02	0.26	1.00											
Coc	-0.12	0.36*	0.27	-0.10	1.00										
Hsoc	0.03	0.36*	0.33	0.05	0.85*	1.00									
Laoc	-0.22	0.29	0.14	-0.20	0.88*	0.50*	1.00								
Noc	0.35*	0.09	0.45*	0.79*	0.18	0.30	0.03	1.00							
Pwb	-0.45*	-0.16	-0.31	-0.41*	0.00	-0.10	0.07	-0.44*	1.00						
Owb	-0.43*	0.02	-0.09	-0.60*	0.14	0.00	0.24	-0.50*	0.57*	1.00					
Swb	-0.31	-0.04	-0.10	-0.39*	0.13	0.03	0.19	-0.35*	0.63*	0.64*	1.00				
Rhwb	-0.23	0.05	0.05	-0.21	0.12	0.16	0.05	-0.06	0.47*	0.37*	0.39*	1.00			
Irb	0.19	0.03	0.12	0.08	0.03	-0.03	0.09	0.07	-0.08	-0.15	-0.02	-0.03	1.00		
Erbi	0.16	0.17	-0.05	0.06	-0.05	-0.06	-0.01	0.01	0.08	0.00	0.06	0.03	0.35*	1.00	
Erbo	0.23	0.13	-0.05	0.06	-0.06	-0.19	0.05	-0.03	-0.14	-0.18	-0.11	-0.19	0.50*	0.39*	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Joint Breadwinner

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1.00														
Cpc	0.13	1.00													
Npc	0.41*	0.22	1.00												
Aoc	0.37*	0.01	0.27	1.00											
Coc	-0.18	0.39*	0.16	0.04	1.00										
Hsoc	-0.09	0.29*	0.25	0.20	0.86*	1.00									
Laoc	-0.26	0.38*	0.03	-0.14	0.87*	0.51*	1.00								
Noc	0.26	0.11	0.47*	0.77*	0.21	0.40*	-0.02	1.00							
Pwb	-0.57*	-0.17	-0.32*	-0.31*	0.11	0.04	0.17	-0.27	1.00						
Owb	-0.34*	0.02	-0.27	-0.60*	0.15	0.04	0.21	-0.52*	0.59*	1.00					
Swb	-0.38*	-0.09	-0.11	-0.33*	0.12	0.09	0.13	-0.23	0.68*	0.65*	1.00				
Rhwb	-0.21	0.01	-0.16	-0.26	0.15	0.11	0.12	-0.17	0.44*	0.46*	0.42*	1.00			
Irb	0.23	-0.06	0.14	0.22	0.02	0.10	-0.06	0.18	-0.22	-0.25	-0.27	-0.14	1.00		
Erbi	0.07	0.09	0.04	0.22	0.12	0.20	0.01	0.22	-0.06	-0.10	-0.08	0.05	0.27	1.00	
Erbo	0.17	0.19	0.07	0.23	0.08	0.10	0.04	0.15	-0.25	-0.22	-0.21	-0.19	0.28	0.35*	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Appendix 9.5 Inter-correlations by Living arrangements

Living arrangements: Living alone

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.04	1													
Npc	0.37	0.23	1												
Aoc	0.24	-0.02	0.11	1											
Coc	0.01	0.54*	0.35	0.11	1										
Hsoc	0.01	0.64*	0.33	0.15	0.90*	1.00									
Laoc	0.01	0.30	0.29	0.00	0.88*	0.60*	1.00								
Noc	0.30	0.09	0.35	0.83*	0.26	0.28	0.14	1							
Pwb	-0.49*	0.06	-0.32	-0.13	0.08	0.08	0.10	-0.16	1						
Owb	-0.19	-0.06	-0.18	-0.27	-0.03	-0.13	0.08	-0.30	0.40	1					
Swb	-0.34	-0.09	-0.26	0.10	-0.05	-0.05	-0.01	-0.06	0.67*	0.46*	1				
Rhwb	-0.28	0.04	-0.02	-0.13	-0.03	0.02	-0.10	-0.15	0.31	0.25	0.35	1			
Irb	0.26	-0.06	0.14	-0.20	-0.20	-0.21	-0.12	-0.09	-0.30	0.01	-0.21	-0.06	1		
Erbi	0.10	-0.03	0.17	0.06	-0.13	-0.17	-0.04	0.02	0.00	0.04	0.13	0.24	0.34	1	
Erbo	0.23	-0.12	0.02	-0.18	-0.19	-0.20	-0.11	-0.27	-0.03	-0.09	-0.21	0.02	0.46*	0.47*	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Living arrangements: Married /living with partner

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.13	1													
Npc	0.46*	0.18*	1												
Aoc	0.40*	0.04	0.34*	1											
Coc	-0.19*	0.39*	0.16*	-0.02	1										
Hsoc	-0.09	0.34*	0.27*	0.16	0.87*	1.00									
Laoc	-0.25	0.35*	0.02	-0.19	0.88*	0.54*	1.00								
Noc	0.33*	0.06	0.52*	0.79*	0.16	0.34*	-0.04	1							
Pwb	-0.54*	-0.19*	-0.27*	-0.33*	0.09	0.00	0.15	-0.31*	1						
Owb	-0.38*	-0.01	-0.18*	-0.55*	0.14	0.02	0.22*	-0.45*	0.6*	1					
Swb	-0.39*	-0.14	-0.15	-0.34*	0.07	0.00	0.12	-0.28*	0.66*	0.59*	1				
Rhwb	-0.23*	-0.01	-0.10	-0.22*	0.11	0.10	0.09	-0.16	0.45*	0.42*	0.38*	1			
Irb	0.3*	0.02	0.13	0.17*	-0.09	-0.08	-0.09	0.10	-0.21*	-0.22*	-0.19*	-0.15	1		
Erbi	0.24*	0.09	0.09	0.17*	-0.02	0.00	-0.04	0.13	-0.04	-0.12	-0.12	-0.05	0.34*	1	
Erbo	0.27*	0.15	0.06	0.18*	-0.04	-0.05	-0.04	0.07	-0.17	-0.17*	-0.18*	-0.13	0.41*	0.38*	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Living arrangements: Living with other

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.12	1													
Npc	0.36	0.07	1												
Aoc	0.48	-0.20	0.41	1											
Coc	-0.44	0.11	0.08	-0.35	1										
Hsoc	-0.31	-0.08	0.15	-0.04	0.84*	1.00									
Laoc	-0.46	0.25	0.05	-0.46	0.87*	0.49	1.00								
Noc	0.42	-0.23	0.7*	0.81*	-0.05	0.22	-0.21	1							
Pwb	-0.59*	-0.08	-0.41	-0.47	0.15	0.06	0.19	-0.46	1						
Owb	-0.40	0.19	-0.36	-0.74*	0.07	-0.13	0.20	-0.72*	0.47	1					
Swb	-0.54	-0.06	-0.30	-0.32	0.15	0.02	0.24	-0.35	0.63*	0.45	1				
Rhwb	-0.27	-0.07	0.04	-0.32	0.21	0.29	0.07	-0.01	0.29	0.31	0.18	1			
Irb	0.16	-0.31	0.05	0.26	-0.29	-0.20	-0.29	0.19	-0.02	-0.08	-0.16	-0.26	1		
Erbi	0.07	-0.13	0.01	0.14	-0.01	0.07	-0.05	0.12	-0.28	-0.04	-0.21	-0.29	0.21	1	
Erbo	0.24	-0.24	0.28	0.36	-0.14	-0.03	-0.17	0.40	-0.33	-0.29	-0.25	-0.19	0.20	0.34	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

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Appendix 9.6 Inter-correlations by actual hours work

Up to 10 hours per week

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1.00														
Cpc	0.19	1.00													
Npc	0.64*	0.25	1.00												
Aoc	0.54	0.14	0.42	1.00											
Coc	-0.03	0.42	0.32	-0.06	1.00										
Hsoc	0.11	0.35	0.40	0.05	0.88*	1.00									
Laoc	-0.19	0.35	0.15	-0.21	0.87*	0.56	1.00								
Noc	0.64*	0.18	0.68*	0.68*	0.19	0.28	0.02	1.00							
Pwb	-0.60*	-0.16	-0.36	-0.47	0.15	-0.02	0.27	-0.52	1.00						
Owb	-0.42	-0.15	-0.29	-0.62*	-0.02	-0.12	0.15	-0.56	0.70*	1.00					
Swb	-0.45	-0.19	-0.37	-0.30	-0.14	-0.22	0.04	-0.50	0.63*	0.75*	1.00				
Rhwb	-0.47	0.08	-0.29	-0.20	0.06	0.03	0.07	-0.22	0.59	0.44	0.41	1.00			
Irb	0.16	-0.07	0.14	0.24	-0.08	-0.05	-0.03	0.15	-0.33	-0.19	-0.22	-0.30	1.00		
Erbi	0.40	0.22	0.27	0.10	-0.04	-0.07	0.01	0.27	-0.09	0.06	-0.22	-0.08	0.57	1.00	
Erbo	0.06	0.32	0.26	0.12	0.10	-0.12	0.27	0.31	-0.10	-0.10	-0.12	-0.02	0.29	0.50	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

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Between 11 to 20 hours per week

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1.00														
Cpc	0.35	1.00													
Npc	0.49*	0.40*	1.00												
Aoc	0.24	0.04	0.14	1.00											
Coc	-0.06	0.40*	0.33	0.08	1.00										
Hsoc	-0.03	0.36	0.36	0.10	0.90*	1.00									
Laoc	-0.09	0.37	0.26	0.01	0.92*	0.66*	1.00								
Noc	0.11	0.12	0.35	0.77*	0.37	0.41*	0.26	1.00							
Pwb	-0.43*	-0.40*	-0.36	-0.12	-0.14	-0.10	-0.17	-0.21	1.00						
Owb	-0.27	-0.04	-0.12	-0.34	0.08	0.05	0.09	-0.32	0.61*	1.00					
Swb	-0.27	-0.16	-0.13	-0.06	0.08	0.11	0.01	-0.14	0.69*	0.62*	1.00				
Rhwb	-0.17	-0.09	0.01	-0.22	-0.01	0.06	-0.08	-0.10	0.50*	0.53*	0.42*	1.00			
Irb	0.33	0.12	0.34	0.26	-0.08	0.01	-0.16	0.16	-0.14	-0.20	-0.09	-0.01	1.00		
Erbi	0.12	0.10	0.07	0.27	-0.04	0.00	-0.06	0.28	-0.02	-0.13	0.06	0.08	0.38	1.00	
Erbo	0.28	0.21	0.20	0.09	-0.16	-0.13	-0.15	0.09	-0.24	-0.25	-0.23	-0.04	0.58*	0.34	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1.00														
Cpc	0.15	1.00													
Npc	0.43*	0.18	1.00												
Aoc	0.46*	0.03	0.45*	1.00											
Coc	-0.13	0.42*	0.17	0.00	1.00										
Hsoc	-0.06	0.37*	0.24	0.19	0.87*	1.00									
Laoc	-0.14	0.37*	0.10	-0.17	0.91*	0.59*	1.00								
Noc	0.41*	0.05	0.62*	0.85*	0.06	0.26	-0.11	1.00							
Pwb	-0.54*	-0.21	-0.40*	-0.49*	-0.05	-0.11	0.00	-0.51*	1.00						
Owb	-0.46*	-0.03	-0.28	-0.66*	0.05	-0.08	0.14	-0.59*	0.59*	1.00					
Swb	-0.45*	-0.14	-0.12	-0.41*	0.03	-0.01	0.06	-0.35*	0.58*	0.65*	1.00				
Rhwb	-0.31	-0.09	-0.11	-0.35*	-0.11	-0.14	-0.07	-0.21	0.47*	0.33*	0.43*	1.00			
Irb	0.20	0.12	-0.01	0.09	-0.02	-0.04	0.00	0.04	-0.10	-0.14	-0.23	-0.18	1.00		
Erbi	0.12	0.14	0.00	0.32	-0.01	0.02	-0.02	0.17	-0.08	-0.23	-0.11	-0.16	0.34*	1.00	
Erbo	0.15	0.20	-0.01	0.14	0.11	0.08	0.10	0.10	-0.13	-0.11	-0.13	-0.19	0.29	0.30	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Between 31 to 40 hours per week

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1.00														
Cpc	0.10	1.00													
Npc	0.40*	0.30*	1.00												
Aoc	0.33*	-0.01	0.29	1.00											
Coc	-0.25	0.42*	0.13	-0.11	1.00										
Hsoc	-0.14	0.37*	0.22	0.07	0.86*	1.00									
Laoc	-0.33	0.36*	-0.01	-0.26	0.86*	0.50*	1.00								
Noc	0.30*	0.11	0.47*	0.77*	0.09	0.26	-0.09	1.00							
Pwb	-0.59*	-0.07	-0.26	-0.25	0.19	0.05	0.28	-0.24	1.00						
Owb	-0.32	0.04	-0.11	-0.56*	0.21	0.05	0.30*	-0.47*	0.51*	1.00					
Swb	-0.43*	-0.14	-0.20	-0.31*	0.14	0.03	0.23	-0.27	0.66*	0.53*	1.00				
Rhwb	-0.23	-0.04	-0.06	-0.21	0.08	0.14	0.00	-0.18	0.33	0.39*	0.33*	1.00			
Irb	0.33*	-0.04	0.13	0.15	-0.11	-0.11	-0.11	0.10	-0.26	-0.27	-0.20	-0.06	1.00		
Erbi	0.23	0.11	0.03	0.07	0.06	0.06	0.05	0.04	-0.05	0.01	-0.08	0.09	0.27	1.00	
Erbo	0.24	-0.03	-0.06	0.08	-0.06	-0.08	-0.05	-0.12	-0.07	-0.03	-0.13	-0.04	0.44*	0.45*	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Between 41 to 50 hours per week

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1.00														
Cpc	0.00	1.00													
Npc	0.44*	-0.10	1.00												
Aoc	0.45*	-0.06	0.37*	1.00											
Coc	-0.30	0.34*	0.14	-0.15	1.00										
Hsoc	-0.18	0.27	0.29	0.03	0.86*	1.00									
Laoc	-0.31*	0.32*	-0.03	-0.26	0.87*	0.52*	1.00								
Noc	0.34*	-0.15	0.54*	0.75*	0.08	0.27	-0.11	1.00							
Pwb	-0.55*	-0.12	-0.11	-0.33*	0.21	0.13	0.24	-0.16	1.00						
Owb	-0.45*	0.02	-0.15	-0.51*	0.23	0.10	0.29	-0.33*	0.59*	1.00					
Swb	-0.37*	-0.13	-0.13	-0.31*	0.10	0.02	0.14	-0.20	0.65*	0.52*	1.00				
Rhwb	-0.20	-0.09	-0.04	-0.21	0.26	0.18	0.26	-0.12	0.47*	0.46*	0.35*	1.00			
Irb	0.35*	0.03	0.12	0.17	-0.11	-0.15	-0.04	0.13	-0.29	-0.13	-0.19	-0.16	1.00		
Erbi	0.29	-0.03	0.25	0.12	-0.10	-0.06	-0.11	0.15	-0.07	-0.10	-0.10	-0.04	0.35*	1.00	
Erbo	0.36*	0.17	0.16	0.23	-0.03	-0.03	-0.05	0.13	-0.20	-0.21	-0.17	-0.17	0.39*	0.51*	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

51 hours and over

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	-0.03	1.00													
Npc	0.38	0.18	1.00												
Aoc	0.27	0.06	0.23	1.00											
Coc	-0.23	0.43	0.10	-0.01	1.00										
Hsoc	-0.09	0.39	0.25	0.26	0.81*	1.00									
Laoc	-0.32	0.32	-0.08	-0.25	0.87*	0.46	1.00								
Noc	0.31	0.11	0.49	0.82*	0.18	0.39	-0.09	1.00							
Pwb	-0.51*	-0.01	-0.39	-0.34	0.15	0.00	0.26	-0.36	1.00						
Owb	-0.14	0.04	-0.39	-0.59*	0.00	-0.12	0.11	-0.61*	0.51*	1.00					
Swb	-0.36	-0.05	-0.17	-0.37	0.07	0.02	0.13	-0.37	0.72*	0.53*	1.00				
Rhwb	-0.15	0.26	-0.04	-0.28	0.22	0.13	0.22	-0.25	0.45	0.39	0.33	1.00			
Irb	0.28	-0.23	0.11	-0.05	-0.25	-0.14	-0.23	-0.14	-0.26	-0.11	-0.14	-0.23	1.00		
Erbi	0.31	-0.02	-0.02	0.12	-0.09	-0.14	-0.06	-0.07	0.06	-0.04	-0.08	0.11	0.31	1.00	
Erbo	0.33	-0.16	0.08	0.17	-0.45	-0.43	-0.34	0.02	-0.34	-0.24	-0.32	-0.37	0.44	0.30	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Part-time hours

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1.00														
Cpc	0.22	1.00													
Npc	0.48*	0.26*	1.00												
Aoc	0.41*	0.06	0.36*	1.00											
Coc	-0.09	0.41*	0.24*	0.02	1.00										
Hsoc	-0.03	0.37*	0.30*	0.16	0.89*	1.00									
Laoc	-0.14	0.37*	0.15	-0.11	0.91*	0.62*	1.00								
Noc	0.34*	0.08	0.54*	0.80*	0.18	0.31*	0.02	1.00							
Pwb	-0.51*	-0.28*	-0.38*	-0.38*	-0.07	-0.12	-0.02	-0.43*	1.00						
Owb	-0.39*	-0.06	-0.24*	-0.55*	0.02	-0.07	0.11	-0.51*	0.63*	1.00					
Swb	-0.38*	-0.15	-0.16	-0.31*	0.00	-0.03	0.04	-0.33*	0.65*	0.67*	1.00				
Rhwb	-0.28	-0.06	-0.09	-0.27*	-0.04	-0.02	-0.05	-0.16	0.48*	0.40*	0.40*	1.00			
Irb	0.23	0.10	0.13	0.17	-0.05	-0.02	-0.07	0.10	-0.14	-0.18	-0.18	-0.13	1.00		
Erbi	0.16	0.16	0.06	0.28*	-0.01	0.02	-0.03	0.22	-0.08	-0.17	-0.10	-0.07	0.39*	1.00	
Erbo	0.18	0.25	0.10	0.14	0.03	0.00	0.04	0.13	-0.17	-0.17	-0.18	-0.10	0.39*	0.35*	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Full-time hours

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1.00														
Cpc	0.05	1.00													
Npc	0.42*	0.13	1.00												
Aoc	0.37*	-0.02	0.30*	1.00											
Coc	-0.25*	0.39*	0.13	-0.08	1.00										
Hsoc	-0.13	0.34*	0.25*	0.12	0.86*	1.00									
Laoc	-0.31*	0.34*	-0.02	-0.25*	0.86*	0.50*	1.00								
Noc	0.32*	0.01	0.50*	0.78*	0.12	0.31*	-0.08	1.00							
Pwb	-0.56*	-0.09	-0.22*	-0.27*	0.19	0.07	0.26*	-0.22*	1.00						
Owb	-0.35*	0.04	-0.16	-0.54*	0.18	0.04	0.26*	-0.44*	0.53*	1.00					
Swb	-0.40*	-0.12	-0.16	-0.30*	0.11	0.02	0.18	-0.26*	0.66*	0.52*	1.00				
Rhwb	-0.22*	0.00	-0.05	-0.20*	0.18	0.16	0.15	-0.16	0.41*	0.41*	0.34*	1.00			
Irb	0.32*	-0.05	0.11	0.11	-0.13	-0.14	-0.11	0.07	-0.25*	-0.19	-0.19	-0.13	1.00		
Erbi	0.26*	0.04	0.11	0.09	-0.03	-0.02	-0.04	0.06	-0.03	-0.05	-0.09	0.04	0.31*	1.00	
Erbo	0.30*	0.04	0.05	0.16	-0.10	-0.09	-0.10	0.01	-0.15	-0.14	-0.17	-0.14	0.42*	0.45*	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Appendix 9.8 Inter-correlations by Years qualified

Qualified for between 2 to 5 years

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.49	1													
Npc	0.33	0.40	1												
Aoc	0.48	-0.02	0.20	1											
Coc	0.15	0.58*	0.35	-0.19	1										
Hsoc	0.39	0.54*	0.39	0.16	0.78*	1.00									
Laoc	-0.11	0.37	0.16	-0.39	0.80*	0.28	1.00								
Noc	0.28	0.13	0.56*	0.698	0.12	0.33	-0.08	1							
Pwb	-0.57*	-0.10	-0.23	-0.30	0.12	-0.09	0.21	-0.18	1						
Owb	-0.26	0.19	-0.18	-0.48	0.22	0.02	0.25	-0.41	0.56*	1					
Swb	-0.39	-0.03	-0.04	-0.09	0.04	-0.07	0.10	-0.05	0.76*	0.50*	1				
Rhwb	-0.29	-0.08	0.08	-0.11	0.26	0.19	0.13	-0.02	0.45	0.29	0.25	1			
Irb	0.14	0.11	-0.02	-0.19	0.16	-0.03	0.34	-0.22	-0.06	-0.06	-0.18	-0.08	1		
Erbi	0.15	0.13	0.14	-0.04	0.14	0.11	0.16	-0.07	0.02	0.02	-0.01	0.09	0.49*	1	
Erbo	0.25	0.17	0.01	-0.10	0.17	0.15	0.14	-0.17	-0.28	-0.16	-0.14	-0.30	0.34	0.44	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.04	1													
Npc	0.45	-0.15	1												
Aoc	0.20	-0.01	0.40	1											
Coc	-0.28	0.20	-0.05	0.01	1										
Hsoc	-0.10	0.12	0.10	0.19	0.76*	1.00									
Laoc	-0.37	0.23	-0.15	-0.15	0.83*	0.31	1.00								
Noc	0.31	0.08	0.47	0.81*	0.06	0.22	-0.10	1							
Pwb	-0.50*	-0.22	-0.28	-0.11	0.12	0.02	0.23	-0.05	1						
Owb	-0.3033	-0.19	-0.21	-0.51*	0.07	-0.15	0.23	-0.49	0.39	1					
Swb	-0.51*	-0.34	-0.39	-0.36	0.01	-0.16	0.18	-0.44	0.55*	0.64*	1				
Rhwb	-0.11	-0.16	0.02	-0.07	0.17	0.21	0.11	-0.04	0.31	0.36	0.33	1			
Irb	0.07	-0.02	0.13	0.08	-0.24	-0.22	-0.14	0.06	-0.16	-0.08	0.06	-0.23	1		
Erbi	0.09	0.45	-0.11	0.27	0.10	0.18	0.01	0.08	-0.05	-0.06	-0.12	-0.06	0.08	1	
Erbo	0.29	0.16	0.12	0.02	-0.04	-0.11	0.04	-0.11	-0.25	-0.08	-0.24	-0.25	0.36	0.42	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Qualified for between 11 to 20 years

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.13	1													
Npc	0.41*	0.13	1												
Aoc	0.35*	-0.09	0.32	1											
Coc	-0.12	0.44*	0.19	-0.03	1										
Hsoc	-0.14	0.31	0.25	0.09	0.90*	1.00									
Laoc	-0.07	0.49*	0.11	-0.16	0.89*	0.61*	1.00								
Noc	0.26	0.03	0.49*	0.81*	0.17	0.30	0.00	1							
Pwb	-0.61*	-0.11	-0.32	-0.44*	0.19	0.17	0.17	-0.34*	1						
Owb	-0.42*	0.10	-0.20	-0.52*	0.23	0.17	0.26	-0.37*	0.59*	1					
Swb	-0.41*	-0.01	-0.19	-0.46*	0.26	0.23	0.23	-0.33*	0.67*	0.56*	1				
Rhwb	-0.35*	0.01	-0.26	-0.27	0.08	0.09	0.05	-0.22	0.52*	0.36*	0.35*	1			
Irb	0.28	0.01	0.09	0.13	-0.03	-0.05	0.00	0.15	-0.08	-0.05	-0.11	-0.09	1		
Erbi	0.22	-0.02	0.12	-0.01	-0.03	-0.02	-0.05	0.06	0.05	-0.04	0.02	-0.09	0.25	1	
Erbo	0.17	0.07	0.09	0.10	-0.07	-0.10	-0.04	0.06	-0.15	-0.14	-0.25	-0.20	0.42*	0.39*	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.04	1													
Npc	0.36*	0.23	1												
Aoc	0.37*	0.04	0.35*	1											
Coc	-0.40*	0.38*	0.11	-0.12	1										
Hsoc	-0.27*	0.37*	0.28*	0.09	0.87*	1.00									
Laoc	-0.44*	0.29*	-0.05	-0.30*	0.88*	0.55*	1.00								
Noc	0.27*	0.01	0.54*	0.78*	0.09	0.31*	-0.14	1							
Pwb	-0.58*	-0.16	-0.24	-0.30*	0.15	0.05	0.21	-0.29*	1						
Owb	-0.39*	0.02	-0.22	-0.65*	0.16	0.01	0.28*	-0.55*	0.56*	1					
Swb	-0.38*	-0.12	-0.05	-0.36*	0.17	0.08	0.22	-0.27*	0.58*	0.58*	1				
Rhwb	-0.34*	-0.02	-0.10	-0.18	0.18	0.16	0.14	-0.09	0.43*	0.41	0.42	1			
Irb	0.34*	-0.02	0.09	0.15	-0.23	-0.21	-0.22	0.08	-0.28*	-0.18	-0.20	-0.13	1		
Erbi	0.23	0.04	0.04	0.15	-0.12	-0.12	-0.11	0.07	-0.11	-0.14	-0.14	-0.07	0.33*	1	
Erbo	0.20	0.04	-0.02	0.15	-0.15	-0.12	-0.16	-0.01	-0.15	-0.15	-0.1	-0.13	0.41*	0.43*	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Qualified for between 31 to 40 years

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.15	1													
Npc	0.54*	0.20	1												
Aoc	0.42*	0.16	0.25	1											
Coc	-0.03	0.38*	0.26	0.07	1										
Hsoc	0.06	0.34*	0.32*	0.22	0.87*	1.00									
Laoc	-0.11	0.33*	0.16	-0.08	0.90*	0.58*	1.00								
Noc	0.42*	0.10	0.49*	0.78*	0.24	0.37*	0.08	1							
Pwb	-0.45*	-0.22	-0.32	-0.31*	-0.02	-0.10	0.05	-0.37*	1						
Owb	-0.35*	-0.11	-0.13	-0.46*	0.01	-0.10	0.12	-0.38*	0.64*	1					
Swb	-0.39*	-0.19	-0.20	-0.25	-0.08	-0.13	-0.01	-0.27	0.71*	0.62*	1				
Rhwb	-0.16	-0.04	-0.03	-0.27	0.05	0.07	0.03	-0.17	0.36*	0.47*	0.34*	1			
Irb	0.35*	0.04	0.18	0.15	-0.05	0.04	-0.12	0.09	-0.26	-0.32*	-0.31*	-0.22	1		
Erbi	0.29*	0.08	0.14	0.22	0.03	0.04	0.00	0.22	-0.09	-0.13	-0.17	-0.07	0.35*	1	
Erbo	0.32*	0.23	0.08	0.23	0.03	0.03	0.02	0.21	-0.09	-0.18	-0.17	-0.10	0.40*	0.37*	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Qualified for over 41 years

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.10	1													
Npc	0.68*	0.24	1												
Aoc	0.49	-0.12	0.58*	1											
Coc	-0.01	0.38	0.33	0.12	1										
Hsoc	0.07	0.30	0.41	0.21	0.93*	1.00									
Laoc	-0.04	0.45	0.21	0.01	0.93*	0.73*	1.00								
Noc	0.53	-0.01	0.61*	0.88*	0.24	0.34	0.11	1							
Pwb	-0.52	-0.19	-0.23	-0.26	-0.18	-0.23	-0.14	-0.34	1						
Owb	-0.39	-0.10	-0.19	-0.37	-0.20	-0.26	-0.18	-0.46	0.64*	1					
Swb	-0.41	-0.22	-0.22	-0.16	-0.36	-0.38	-0.32	-0.34	0.84*	0.63*	1				
Rhwb	-0.06	0.33	0.04	-0.40	0.04	0.06	-0.01	-0.40	0.39	0.46	0.29	1			
Irb	0.19	0.04	0.28	0.15	0.06	0.15	-0.01	0.16	-0.33	-0.25	-0.21	-0.06	1		
Erbi	0.03	0.29	0.15	0.19	0.14	0.16	0.13	0.29	-0.04	-0.12	0.02	0.02	0.49	1	
Erbo	0.31	0.30	0.36	0.12	0.23	0.20	0.22	0.15	-0.14	0.05	-0.18	0.27	0.41	0.33	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Appendix 9.9 Inter-correlations by years in community pharmacy

In community practice for between 2 to 5 years

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.40	1													
Npc	0.32	0.35	1												
Aoc	0.54*	0.03	0.25	1											
Coc	0.01	0.53*	0.27	-0.14	1										
Hsoc	0.25	0.47	0.38	0.20	0.76*	1.00									
Laoc	-0.22	0.36	0.08	-0.32	0.81*	0.29	1.00								
Noc	0.34	0.13	0.55*	0.73*	0.11	0.35	-0.10	1							
Pwb	-0.44	-0.18	-0.18	-0.26	0.04	-0.13	0.15	-0.06	1						
Owb	-0.34	0.04	-0.22	-0.36	0.13	-0.02	0.15	-0.36	0.59*	1					
Swb	-0.34	-0.09	-0.02	-0.22	0.03	-0.10	0.11	-0.19	0.61*	0.57*	1				
Rhwb	-0.20	-0.15	0.11	-0.11	0.25	0.16	0.15	-0.00	0.34	0.34	0.12	1			
Irb	0.06	0.04	-0.10	-0.10	0.10	-0.01	0.20	-0.20	0.10	-0.01	-0.07	0.08	1		
Erbi	0.28	0.10	0.18	0.05	0.18	0.17	0.17	-0.04	-0.13	-0.20	-0.10	0.05	0.42	1	
Erbo	0.11	0.23	-0.05	-0.07	0.22	0.24	0.10	-0.19	-0.29	-0.12	-0.03	-0.29	0.26	0.38	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

In community practice for between 6 to 10 years

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.07	1													
Npc	0.53*	0.03	1												
Aoc	0.16	-0.03	0.39	1											
Coc	-0.22	0.34	0.13	-0.06	1										
Hsoc	-0.08	0.24	0.23	0.15	0.76*	1.00									
Laoc	-0.22	0.33	0.06	-0.21	0.85*	0.34	1.00								
Noc	0.29	0.14	0.53*	0.80*	0.11	0.29	-0.04	1							
Pwb	-0.63*	-0.16	-0.44*	-0.27	0.10	-0.01	0.14	-0.28	1						
Owb	-0.28	0.01	-0.34	-0.61*	0.11	-0.15	0.23	-0.6*	0.51*	1					
Swb	-0.46*	-0.16	-0.44	-0.47*	0.07	-0.14	0.20	-0.48*	0.67	0.63*	1				
Rhwb	-0.39	-0.05	-0.19	-0.19	0.10	0.07	0.05	-0.2268	0.55*	0.48*	0.50*	1			
Irb	0.24	0.03	0.14	0.20	-0.19	-0.16	-0.12	0.17	-0.27	-0.15	-0.23	-0.25	1		
Erbi	0.06	0.51*	-0.03	0.06	0.10	0.08	0.09	0.01	0.04	0.14	0.02	0.02	0.13	1	
Erbo	0.36	0.11	0.21	0.09	-0.07	-0.13	0.03	0.03	-0.23	-0.15	-0.25	-0.34	0.33	0.37	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

In community practice for between 11 to 20 years

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.11	1													
Npc	0.31*	0.16	1												
Aoc	0.36*	-0.09	0.26	1											
Coc	-0.12	0.45*	0.23	-0.03	1										
Hsoc	-0.08	0.33*	0.27	0.08	0.91*	1.00									
Laoc	-0.15	0.49*	0.13	-0.14	0.88*	0.62*	1.00								
Noc	0.26	-0.03	0.43*	0.80	0.20	0.30	0.05	1							
Pwb	-0.63*	-0.15	-0.23	-0.37*	0.19	0.14	0.21	-0.30	1						
Owb	-0.45*	0.08	-0.11	-0.57*	0.20	0.12	0.25	-0.45*	0.56*	1					
Swb	-0.48*	-0.06	-0.14	-0.29	0.24	0.17	0.27	-0.20	0.65*	0.49*	1				
Rhwb	-0.29	-0.01	-0.19	-0.26	0.12	0.12	0.09	-0.18	0.48*	0.31*	0.30	1			
Irb	0.27	-0.03	0.05	0.17	-0.10	-0.12	-0.07	0.10	-0.18	-0.13	-0.19	-0.14	1		
Erbi	0.24	-0.01	0.10	0.10	-0.06	0.00	-0.10	0.11	-0.05	-0.11	-0.09	-0.1	0.30	1	
Erbo	0.26	0.11	0.04	0.05	-0.1	-0.12	-0.07	-0.07	-0.21	-0.14	-0.32*	-0.14	0.47*	0.39*	1

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

In community practice for between 21 to 30 years

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1.00														
Cpc	0.08	1.00													
Npc	0.44*	0.18	1.00												
Aoc	0.39*	0.04	0.31*	1.00											
Coc	-0.34*	0.33*	0.09	-0.06	1.00										
Hsoc	-0.25	0.31*	0.25	0.13	0.87*	1.00									
Laoc	-0.36*	0.26*	-0.05	-0.24	0.88*	0.56*	1.00								
Noc	0.31*	0.01	0.51*	0.78	0.12	0.34	-0.12	1.00							
Pwb	-0.56*	-0.15	-0.27*	-0.32*	0.10	0.02	0.17	-0.32*	1.00						
Owb	-0.39*	0.00	-0.19	-0.58*	0.14	0.01	0.24	-0.48*	0.61*	1.00					
Swb	-0.35*	-0.15	-0.06	-0.37*	0.08	0.05	0.10	-0.31*	0.64*	0.64*	1.00				
Rhwb	-0.27*	-0.03	-0.05	-0.22	0.17	0.14	0.13	-0.13	0.45*	0.42*	0.46*	1.00			
Irb	0.35*	0.00	0.13	0.14	-0.19	-0.16	-0.19	0.08	-0.28*	-0.22	-0.15	-0.11	1.00		
Erbi	0.22	-0.01	0.06	0.26	-0.08	-0.08	-0.08	0.19	-0.07	-0.13	-0.10	-0.06	0.32*	1.00	
Erbo	0.25	0.05	0.04	0.22	-0.11	-0.08	-0.12	0.09	-0.18	-0.19	-0.08	-0.12	0.45*	0.44*	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

In community practice for between 31 to 40

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1.00														
Cpc	0.15	1.00													
Npc	0.56*	0.25	1.00												
Aoc	0.35*	0.15	0.32	1.00											
Coc	0.02	0.45*	0.26	-0.02	1.00										
Hsoc	0.09	0.42*	0.34*	0.16	0.87*	1.00									
Laoc	-0.06	0.36*	0.14	-0.19	0.88*	0.55*	1.00								
Noc	0.38*	0.12	0.55*	0.788	0.14	0.30	-0.02	1.00							
Pwb	-0.50*	-0.24	-0.35*	-0.26	0.01	-0.08	0.08	-0.33*	1.00						
Owb	-0.35*	-0.13	-0.22	-0.51*	0.08	-0.07	0.19	-0.43*	0.55*	1.00					
Swb	-0.45*	-0.19	-0.27	-0.24	-0.02	-0.08	0.04	-0.27	0.71*	0.57*	1.00				
Rhwb	-0.13	0.02	-0.04	-0.26	0.07	0.14	0.00	-0.14	0.26	0.44*	0.27	1.00			
Irb	0.31	0.08	0.19	0.09	0.02	0.09	-0.05	0.05	-0.21	-0.27	-0.35*	-0.22	1.00		
Erbi	0.23	0.12	0.08	0.12	0.03	0.03	0.00	0.08	-0.06	-0.09	-0.15	-0.05	0.43*	1.00	
Erbo	0.20	0.20	0.04	0.20	0.03	0.03	0.02	0.18	-0.01	-0.10	-0.18	-0.05	0.41*	0.38*	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

In community practice for 41 years and longer

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1.00														
Cpc	0.04	1.00													
Npc	0.60	0.09	1.00												
Aoc	0.62	-0.04	0.71*	1.00											
Coc	-0.17	0.43	0.28	0.12	1.00										
Hsoc	-0.11	0.37	0.36	0.26	0.96*	1.00									
Laoc	-0.14	0.49	0.20	0.03	0.94*	0.83*	1.00								
Noc	0.57	0.02	0.66*	0.89*	0.26	0.38	0.16	1.00							
Pwb	-0.41	-0.01	-0.14	-0.47	-0.04	-0.17	0.04	-0.56	1.00						
Owb	-0.15	-0.02	0.06	-0.33	-0.16	-0.24	-0.15	-0.37	0.76*	1.00					
Swb	-0.19	-0.13	-0.07	-0.26	-0.34	-0.39	-0.29	-0.44	0.80*	0.66*	1.00				
Rhwb	-0.10	0.44	-0.03	-0.35	0.10	-0.03	0.14	-0.41	0.54	0.52	0.39	1.00			
Irb	0.18	-0.10	0.34	0.22	-0.06	0.03	-0.12	0.24	-0.31	-0.24	-0.15	-0.25	1.00		
Erbi	0.22	0.19	0.28	0.13	0.11	0.12	0.11	0.28	-0.21	-0.22	-0.12	-0.11	0.61	1.00	
Erbo	0.36	0.32	0.42	0.28	0.17	0.14	0.18	0.33	-0.08	0.09	-0.16	0.13	0.24	0.34	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Employee community pharmacist

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.07	1													
Npc	0.38*	0.14	1.00												
Aoc	0.40*	-0.04	0.33*	1.00											
Coc	-0.25*	0.42*	0.13	-0.19*	1.00										
Hsoc	-0.13	0.36*	0.25*	-0.02	0.85*	1.00									
Laoc	-0.29*	0.37*	0.00	-0.30*	0.88*	0.51*	1.00								
Noc	0.31*	-0.01	0.52*	0.77*	-0.01	0.18	-0.17	1.00							
Pwb	-0.50*	-0.08	-0.21*	-0.33*	0.21*	0.11	0.25*	-0.26*	1.00						
Owb	-0.33*	0.09	-0.15	-0.57*	0.25*	0.12	0.30*	-0.45*	0.56*	1.00					
Swb	-0.37*	-0.08	-0.12	-0.32*	0.16	0.09	0.18	-0.26*	0.67*	0.57*	1.00				
Rhwb	-0.21*	0.01	-0.02	-0.21*	0.19	0.19	0.13	-0.11	0.46*	0.40*	0.43*	1.00			
Irb	0.25*	-0.05	0.11	0.11	-0.12	-0.13	-0.09	0.06	-0.21*	-0.19	-0.19	-0.15	1.00		
Erbi	0.23*	0.06	0.11	0.14	-0.03	-0.02	-0.03	0.10	-0.03	-0.05	-0.11	-0.02	0.33*	1.00	
Erbo	0.17	0.06	-0.02	0.10	-0.08	-0.10	-0.06	-0.01	-0.11	-0.13	-0.14	-0.11	0.40*	0.39*	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant $p \leq 0.0003$

Non-employee community pharmacist

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1.00														
Cpc	0.18	1.00													
Npc	0.53*	0.25*	1.00												
Aoc	0.37*	0.09	0.31*	1.00											
Coc	-0.09	0.35*	0.24*	0.19	1.00										
Hsoc	-0.01	0.31*	0.31*	0.36*	0.89*	1.00									
Laoc	-0.15	0.32*	0.13	-0.04	0.89*	0.60*	1.00								
Noc	0.35*	0.13	0.51*	0.82*	0.38*	0.52*	0.17	1.00							
Pwb	-0.60*	-0.28*	-0.39*	-0.30*	-0.09	-0.14	-0.02	-0.37*	1.00						
Owb	-0.41*	-0.12	-0.24*	-0.49*	-0.07	-0.17	0.05	-0.47*	0.59*	1.00					
Swb	-0.43*	-0.21	-0.23	-0.29*	-0.06	-0.11	0.01	-0.32*	0.63*	0.61*	1.00				
Rhwb	-0.30*	-0.05	-0.17	-0.26*	0.00	0.01	-0.01	-0.22	0.40*	0.42*	0.26*	1.00			
Irb	0.34*	0.13	0.14	0.16	-0.04	0.00	-0.08	0.11	-0.23	-0.19	-0.19	-0.17	1.00		
Erbi	0.21	0.13	0.06	0.18	-0.02	0.00	-0.04	0.13	-0.08	-0.18	-0.08	-0.07	0.33*	1.00	
Erbo	0.39*	0.22	0.18	0.22	-0.01	0.00	-0.02	0.14	-0.24*	-0.20	-0.24*	-0.17	0.42*	0.42*	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Appendix 9.11 Inter-correlations by locum status

Locum community pharmacist

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.24	1													
Npc	0.54*	0.26	1.00												
Aoc	0.42*	0.08	0.41*	1.00											
Coc	-0.05	0.30*	0.28*	0.08	1.00										
Hsoc	0.02	0.27*	0.38*	0.21	0.89*	1.00									
Laoc	-0.11	0.28*	0.16	-0.05	0.92*	0.64*	1.00								
Noc	0.38*	0.11	0.61*	0.75*	0.32*	0.43*	0.18	1.00							
Pwb	-0.63*	-0.35*	-0.44*	-0.36*	-0.11	-0.16	-0.06	-0.41*	1.00						
Owb	-0.45*	-0.08	-0.25	-0.48*	0.06	-0.02	0.13	-0.39*	0.56*	1.00					
Swb	-0.51*	-0.18	-0.26	-0.27*	0.03	-0.01	0.07	-0.28*	0.63*	0.58*	1.00				
Rhwb	-0.32*	-0.07	-0.20	-0.31*	-0.02	0.02	-0.05	-0.23	0.39*	0.42*	0.25	1.00			
Irb	0.33*	0.14	0.14	0.23	-0.06	-0.05	-0.05	0.15	-0.24	-0.24	-0.22	-0.15	1.00		
Erbi	0.19	0.15	0.08	0.20	-0.04	-0.04	-0.03	0.17	-0.08	-0.21	-0.10	-0.04	0.33*	1.00	
Erbo	0.36*	0.23	0.16	0.23	0.00	-0.02	0.03	0.15	-0.28*	-0.24	-0.28*	-0.17	0.44*	0.43*	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

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Non-locum community pharmacist

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.05	1													
Npc	0.40*	0.15	1.00												
Aoc	0.37*	-0.04	0.30*	1.00											
Coc	-0.25*	0.43*	0.12	-0.13	1.00										
Hsoc	-0.14	0.36*	0.23*	0.07	0.85*	1.00									
Laoc	-0.30*	0.38*	0.00	-0.28*	0.87*	0.50*	1.00								
Noc	0.31*	0.00	0.48*	0.80*	0.04	0.24*	-0.15	1.00							
Pwb	-0.49*	-0.07	-0.21*	-0.28*	0.19*	0.09	0.24*	-0.25*	1.00						
Owb	-0.32*	0.05	-0.17	-0.55*	0.17	0.04	0.25*	-0.48*	0.57*	1.00					
Swb	-0.34*	-0.10	-0.12	-0.30*	0.11	0.04	0.15	-0.27*	0.66*	0.58*	1.00				
Rhwb	-0.20*	0.02	-0.02	-0.17	0.18*	0.17	0.14	-0.10	0.45*	0.38*	0.41*	1.00			
Irb	0.27*	-0.04	0.11	0.13	-0.09	-0.07	-0.10	0.08	-0.20*	-0.18*	-0.19*	-0.16	1.00		
Erbi	0.24*	0.06	0.09	0.16	-0.02	0.00	-0.04	0.10	-0.04	-0.06	-0.10	-0.04	0.34*	1.00	
Erbo	0.21*	0.07	0.02	0.12	-0.08	-0.08	-0.08	0.01	-0.10	-0.12	-0.13	-0.11	0.40*	0.40*	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Appendix 9.12 Inter-correlations by size of workplace

Independent pharmacies

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.02	1													
Npc	0.50*	0.17	1.00												
Aoc	0.32	0.00	0.24	1.00											
Coc	-0.14	0.37*	0.17	0.10	1.00										
Hsoc	-0.08	0.29	0.20	0.29	0.86*	1.00									
Laoc	-0.17	0.34	0.13	-0.10	0.86*	0.51*	1.00								
Noc	0.34	0.02	0.46*	0.84*	0.27	0.45*	0.06	1.00							
Pwb	-0.52*	-0.12	-0.28	-0.26	-0.07	-0.13	-0.02	-0.30	1.00						
Owb	-0.35*	-0.01	-0.22	-0.54*	-0.09	-0.20	0.03	-0.53*	0.54*	1.00					
Swb	-0.38*	-0.21	-0.23	-0.31	-0.15	-0.22	-0.03	-0.36*	0.57*	0.63*	1.00				
Rhwb	-0.22	0.03	-0.07	-0.25	-0.08	-0.10	-0.06	-0.24	0.38*	0.46*	0.26	1.00			
Irb	0.31	0.02	0.15	0.02	0.05	0.08	0.00	0.06	-0.17	-0.06	-0.13	-0.26	1.00		
Erbi	0.21	0.04	0.09	0.18	-0.04	-0.03	-0.05	0.07	-0.03	-0.06	-0.02	-0.18	0.35*	1.00	
Erbo	0.31	0.21	0.14	0.04	0.02	0.01	0.00	-0.07	-0.11	0.02	-0.06	-0.22	0.40*	0.36*	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant $p \leq 0.0003$

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Small-chain pharmacies

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.15	1													
Npc	0.33	0.17	1.00												
Aoc	0.47*	0.03	0.26	1.00											
Coc	-0.29	0.26	0.19	0.05	1.00										
Hsoc	-0.24	0.17	0.34	0.20	0.88*	1.00									
Laoc	-0.28	0.32	0.00	-0.15	0.87*	0.57*	1.00								
Noc	0.39	-0.05	0.49*	0.73*	0.17	0.32	-0.04	1.00							
Pwb	-0.53*	-0.06	-0.22	-0.25	0.09	0.05	0.15	-0.31	1.00						
Owb	-0.45*	0.04	-0.13	-0.50*	0.10	0.01	0.14	-0.54*	0.58*	1.00					
Swb	-0.32	0.02	0.12	-0.21	0.15	0.19	0.11	-0.15	0.59*	0.69*	1.00				
Rhwb	-0.25	0.27	-0.03	-0.15	0.26	0.23	0.23	-0.15	0.23	0.37	0.34	1.00			
Irb	0.30	0.06	0.16	0.23	-0.10	0.05	-0.27	0.09	-0.11	-0.17	-0.14	-0.08	1.00		
Erbi	0.20	-0.03	0.00	0.39	-0.18	-0.10	-0.27	0.16	-0.13	-0.23	-0.26	-0.03	0.46*	1.00	
Erbo	0.25	0.01	-0.03	0.37	0.02	0.08	-0.08	0.12	-0.11	-0.15	-0.26	0.02	0.51*	0.61*	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Medium-sized multiple pharmacies

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.18	1													
Npc	0.45*	0.10	1.00												
Aoc	0.47*	0.09	0.28	1.00											
Coc	-0.18	0.44*	0.14	-0.08	1.00										
Hsoc	-0.01	0.37*	0.26	0.12	0.88*	1.00									
Laoc	-0.32	0.40*	-0.01	-0.26	0.87*	0.54*	1.00								
Noc	0.45*	0.10	0.53*	0.75*	0.06	0.30	-0.18	1.00							
Pwb	-0.57*	-0.22	-0.37*	-0.40*	0.09	0.01	0.13	-0.39*	1.00						
Owb	-0.38*	0.15	-0.13	-0.59*	0.17	0.00	0.27	-0.45*	0.49*	1.00					
Swb	-0.42*	-0.01	-0.14	-0.32	0.16	0.06	0.19	-0.24	0.53*	0.54*	1.00				
Rhwb	-0.29	0.02	0.01	-0.29	0.24	0.23	0.15	-0.11	0.47*	0.48*	0.45*	1.00			
Irb	0.43*	0.16	0.14	0.26	-0.15	-0.16	-0.11	0.22	-0.32	-0.27	-0.26	-0.13	1.00		
Erbi	0.21	0.09	0.11	0.21	-0.04	-0.01	-0.06	0.22	0.00	-0.17	-0.19	-0.11	0.36*	1.00	
Erbo	0.31	0.18	0.07	0.14	-0.12	-0.14	-0.07	0.07	-0.21	-0.12	-0.29	-0.18	0.44*	0.40*	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Large-multiple pharmacies

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.08	1													
Npc	0.43*	0.18	1.00												
Aoc	0.41*	-0.02	0.39*	1.00											
Coc	-0.20	0.43*	0.18	-0.06	1.00										
Hsoc	-0.12	0.40*	0.26*	0.09	0.87*	1.00									
Laoc	-0.22*	0.36*	0.06	-0.18	0.88*	0.54*	1.00								
Noc	0.31*	0.07	0.55*	0.76*	0.16	0.29*	0.02	1.00							
Pwb	-0.50*	-0.11	-0.21*	-0.34*	0.17	0.08	0.20	-0.28*	1.00						
Owb	-0.32*	0.00	-0.16	-0.52*	0.20	0.09	0.25*	-0.39*	0.58*	1.00					
Swb	-0.36*	-0.15	-0.17	-0.31*	0.12	0.06	0.14	-0.29*	0.738	0.56*	1.00				
Rhwb	-0.20	-0.03	-0.07	-0.23*	0.14	0.15	0.08	-0.16	0.45*	0.37*	0.37*	1.00			
Irb	0.22*	-0.10	0.11	0.14	-0.12	-0.15	-0.07	0.05	-0.19	-0.21	-0.19	-0.15	1.00		
Erbi	0.24*	0.12	0.09	0.03	0.03	0.01	0.03	0.04	-0.02	-0.02	-0.05	0.05	0.31*	1.00	
Erbo	0.19	0.05	0.03	0.13	-0.05	-0.08	-0.03	0.05	-0.13	-0.19	-0.15	-0.12	0.35*	0.33*	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Working in more than one sized pharmacy

	apc	cpc	npc	aoc	coc	hsoc	laoc	noc	pwb	owb	swb	rhwb	irb	erbi	erbo
Apc	1														
Cpc	0.48	1													
Npc	0.56	0.38	1.00												
Aoc	-0.04	-0.14	0.35	1.00											
Coc	-0.17	-0.20	0.12	0.22	1.00										
Hsoc	-0.05	-0.25	0.23	0.18	0.83*	1.00									
Laoc	-0.31	-0.15	-0.01	0.22	0.88*	0.54	1.00								
Noc	0.06	-0.15	0.52	0.86*	0.38	0.33	0.34	1.00							
Pwb	-0.82*	-0.63	-0.72	-0.14	-0.02	-0.14	0.19	-0.22	1.00						
Owb	-0.74*	-0.63	-0.59	-0.07	-0.01	0.01	0.11	-0.19	0.91*	1.00					
Swb	-0.65	-0.48	-0.46	-0.13	-0.06	0.04	0.01	-0.20	0.71	0.81*	1.00				
Rhwb	-0.58	-0.69	-0.55	-0.23	0.11	0.17	0.10	-0.28	0.59	0.59	0.49	1.00			
Irb	0.09	0.27	-0.12	-0.68	0.04	0.01	0.06	-0.63	-0.11	-0.10	0.06	0.18	1.00		
Erbi	0.19	0.12	-0.05	-0.05	0.04	-0.03	0.05	-0.21	-0.23	-0.35	-0.09	0.04	0.39	1.00	
Erbo	0.35	0.27	0.05	-0.38	-0.13	-0.18	-0.10	-0.46	-0.35	-0.41	-0.16	-0.05	0.75*	0.72	1.00

affective-professional commitment (APC), normative-professional commitment (NPC) continuance-professional commitment (CPC), affective-organisational commitment (AOC), normative continuance commitment (NOC) continuance-organisational commitment (COC), high-sacrifice organisational commitment (HSOC), low-alternative organisational commitment (LAOC), in-role behaviour (IRB), extra-role behaviour towards the individual (ERBI), and extra-role behaviour toward the organisation (ERBO); * bonferroni adjusted significant p≤0.0003

Appendix 9.13 Outcome of fully adjusted professional-withdrawal behaviour regression model

Outcome of fully adjusted professional-withdrawal behaviour model	Coef. B	Std. Err.	t	P>|t|	β
Affective-professional commitment	-0.50983	0.05866	-8.69	0	-0.40169
Continuance-professional commitment	-0.15192	0.05458	-2.78	0.006	-0.11709
Normative-professional commitment	0.01292	0.05456	0.24	0.813	0.011673
Affective-organisational commitment	-0.00848	0.070734	-0.12	0.905	-0.00841
High-sacrifice continuance-organisational commitment	0.026851	0.056303	0.48	0.634	0.025179
Low-alternative continuance-organisational commitment	0.057416	0.049479	1.16	0.246	0.056438
Normative-organisational commitment	-0.1918	0.077368	-2.48	0.013	-0.18464
Gender: female	-0.13735	0.14349	-0.96	0.339	-0.04376
Age (Referent: Below 30 years old)					
31 to 40 years old	-0.12051	0.367264	-0.33	0.743	-0.02986
41 to 50 years old	-0.24703	0.404162	-0.61	0.541	-0.07447
51 to 60 years old	-0.29732	0.450505	-0.66	0.51	-0.09104
61 years old and above	-0.13592	0.531588	-0.26	0.798	-0.0274
Ethnicity (Referent: White)					
Black	0.551782	0.49334	1.12	0.264	0.042631
Mixed ethnicity	0.51204	0.45182	1.13	0.258	0.041923
Asian	0.184601	0.168805	1.09	0.275	0.043807
Other	0.322055	0.385821	0.83	0.404	0.031577
Living arrangements (Referent: Living alone)					
Married / living with partner	-0.0286	0.213818	-0.13	0.894	-0.00682
Living with other	-0.4324	0.312001	-1.39	0.166	-0.06341
Main breadwinner (Referent: Yes)					
No	0.255227	0.190654	1.34	0.181	0.06683
Joint	0.097637	0.152665	0.64	0.523	0.028759
Dependents (Referent: No)					
Young dependents	-0.08285	0.146355	-0.57	0.572	-0.0272
Old dependents	0.131546	0.247469	0.53	0.595	0.021016
Both	-0.11975	0.244046	-0.49	0.624	-0.01962
Years qualified (Referent: 2 to 6 years)					
6 to 10 years	-0.39285	0.431163	-0.91	0.363	-0.06886
11 to 20 years	0.092999	0.52757	0.18	0.86	0.023937
21 to 30 years	-0.20564	0.561249	-0.37	0.714	-0.06315
31 to 40 years	0.261867	0.607992	0.43	0.667	0.076372

Outcome of fully adjusted professional-withdrawal behaviour model	Coef. B	Std. Err.	t	P>|t|	β
41 years or longer	-0.19234	0.742833	-0.26	0.796	-0.03033
Years in community pharmacy (Referent: 2 to 6 years)					
6 to 10 years	0.046668	0.346113	0.13	0.893	0.009195
11 to 20 years	-0.57272	0.385806	-1.48	0.138	-0.15653
21 to 30 years	-0.03657	0.388428	-0.09	0.925	-0.01131
31 to 40 years	-0.17211	0.420632	-0.41	0.683	-0.04636
41 years or longer	0.077313	0.585758	0.13	0.895	0.010595
Community pharmacy Job-role (Referent: Proprietor / Owner)					
Manager	-0.50314	0.258157	-1.95	0.050	-0.15168
Relief	-0.20337	0.321388	-0.63	0.527	-0.03976
Second	-0.08253	0.321381	-0.26	0.797	-0.01491
Locum	-0.36546	0.262176	-1.39	0.164	-0.11206
Non-store	0.144919	0.420287	0.34	0.73	0.015236
Others	-0.57219	0.305865	-1.87	0.062	-0.10134
Non-employee community pharmacist	0	(omitted)			0
Size of pharmacy (Referent: Independent)					
Small-chain	-0.03154	0.221746	-0.14	0.887	-0.00636
Medium-sized multiple	0.027323	0.200294	0.14	0.892	0.007033
Large-multiple	0.011998	0.188897	0.06	0.949	0.003936
More than one sized	0.371246	0.364745	1.02	0.309	0.041476
Actual hours part-time hours	0.017927	0.244021	0.07	0.941	0.005806
Non-community role	-0.04228	0.175764	-0.24	0.81	-0.00911
_cons	7.010981	0.589934	11.88	0	.

Appendix 9.14 Outcome of fully adjusted organisational-withdrawal behaviour regression model

Outcome of fully adjusted organisational-withdrawal behaviour model	Coef. B	Std. Err.	t	P>|t|	β
Affective-professional commitment	-0.19891	0.064807	-3.07	0.002	-0.1419
Continuance-professional commitment	0.073802	0.060375	1.22	0.222	0.051486
Normative-professional commitment	0.090537	0.060299	1.5	0.134	0.074104
Affective-organisational commitment	-0.415	0.078305	-5.3	0	-0.37235
High-sacrifice continuance-organisational commitment	0.022439	0.06221	0.36	0.718	0.01907
Low-alternative continuance-organisational commitment	0.065067	0.054678	1.19	0.235	0.057857
Normative-organisational commitment	-0.20597	0.085563	-2.41	0.016	-0.1796
Gender: female	0.152401	0.158695	0.96	0.337	0.043925
Age (Referent: Below 30 years old)					
31 to 40 years old	-0.44832	0.405739	-1.1	0.27	-0.10066
41 to 50 years old	-0.46258	0.446506	-1.04	0.301	-0.12588
51 to 60 years old	-0.34691	0.497759	-0.7	0.486	-0.0962
61 years old and above	-0.26209	0.587508	-0.45	0.656	-0.04787
Ethnicity (Referent: White)					
Black	0.01349	0.545159	0.02	0.98	0.000945
Mixed ethnicity	0.192052	0.49917	0.38	0.701	0.014252
Asian	0.156988	0.187944	0.84	0.404	0.033598
Other	0.165308	0.426368	0.39	0.698	0.01469
Living arrangements (Referent: Living alone)					
Married / living with partner	-0.24473	0.237284	-1.03	0.303	-0.05262
Living with other	-0.0938	0.345371	-0.27	0.786	-0.01247
Main breadwinner (Referent: Yes)					
No	0.177916	0.210839	0.84	0.399	0.042207
Joint	-0.09752	0.168822	-0.58	0.564	-0.02602
Dependents (Referent: No)					
Young dependents	-0.00361	0.161839	-0.02	0.982	-0.00107
Old dependents	0.036375	0.273594	0.13	0.894	0.005267
Both	-0.34501	0.269908	-1.28	0.202	-0.05122
Years qualified (Referent: 2 to 6 years)					
6 to 10 years	0.177989	0.476442	0.37	0.709	0.028275
11 to 20 years	0.612214	0.583067	1.05	0.294	0.142763
21 to 30 years	0.575451	0.620277	0.93	0.354	0.159573
31 to 40 years	0.249167	0.671821	0.37	0.711	0.065822
41 years or longer	0.426461	0.820737	0.52	0.604	0.060939

Outcome of fully adjusted organisational-withdrawal behaviour model	Coef. B	Std. Err.	t	P>|t|	β
Years in community pharmacy (Referent: 2 to 6 years)					
6 to 10 years	-0.26471	0.382372	-0.69	0.489	-0.04726
11 to 20 years	-0.63401	0.426267	-1.49	0.138	-0.15698
21 to 30 years	-0.54122	0.42931	-1.26	0.208	-0.15114
31 to 40 years	-0.27126	0.464689	-0.58	0.56	-0.0662
41 years or longer	-0.51598	0.647134	-0.8	0.426	-0.06408
Community pharmacy Job-role (Referent: Proprietor / Owner)					
Manager	-0.54691	0.285202	-1.92	0.056	-0.14933
Relief	-0.84611	0.355076	-2.38	0.018	-0.14989
Second	-0.92312	0.355049	-2.6	0.01	-0.15113
Locum	-0.39519	0.289752	-1.36	0.173	-0.10959
Non-store	-0.83166	0.464358	-1.79	0.074	-0.07925
Others	-0.31417	0.339101	-0.93	0.355	-0.04991
Non-employee community pharmacist	0	(omitted)			0
Size of pharmacy (Referent: Independent)					
Small-chain	0.110914	0.244978	0.45	0.651	0.020259
Medium-sized multiple	0.059237	0.22213	0.27	0.79	0.013764
Large-multiple	0.099501	0.208957	0.48	0.634	0.029538
More than one sized	-0.26437	0.402997	-0.66	0.512	-0.02677
Actual hours part-time hours	0.29425	0.269642	1.09	0.276	0.086223
Non-community role	0.153621	0.195333	0.79	0.432	0.029823
_cons	6.232556	0.652093	9.56	0	.

Appendix 9.15 Outcome of fully adjusted sector-withdrawal behaviour regression model

Outcome of fully adjusted sector-withdrawal behaviour model	Coef. B	Std. Err.	t	P>|t|	β
Affective-professional commitment	-0.31215	0.064478	-4.84	0	-0.23239
Continuance-professional commitment	-0.07668	0.059993	-1.28	0.202	-0.05584
Normative-professional commitment	0.110578	0.059972	1.84	0.066	0.094405
Affective-organisational commitment	-0.03776	0.077749	-0.49	0.627	-0.03539
High-sacrifice continuance-organisational commitment	0.050019	0.061887	0.81	0.419	0.044321
Low-alternative continuance-organisational commitment	0.064774	0.054387	1.19	0.234	0.060163
Normative-organisational commitment	-0.31329	0.085042	-3.68	0	-0.28498
Gender: female	-0.0886	0.157708	-0.56	0.574	-0.02668
Age (Referent: Below 30 years old)					
31 to 40 years old	-0.9077	0.403654	-2.25	0.025	-0.21255
41 to 50 years old	-0.51186	0.444209	-1.15	0.25	-0.14581
51 to 60 years old	-0.3222	0.495143	-0.65	0.516	-0.09322
61 years old and above	-0.14776	0.58426	-0.25	0.8	-0.02814
Ethnicity (Referent: White)					
Black	0.772834	0.542223	1.43	0.155	0.05642
Mixed ethnicity	0.538481	0.496589	1.08	0.279	0.041659
Asian	0.31685	0.185531	1.71	0.088	0.071049
Other	0.314974	0.42405	0.74	0.458	0.029182
Living arrangements (Referent: Living alone)					
Married / living with partner	-0.11816	0.235004	-0.5	0.615	-0.02662
Living with other	0.106208	0.342916	0.31	0.757	0.014718
Main breadwinner (Referent: Yes)					
No	0.365875	0.209545	1.75	0.081	0.090525
Joint	0.305234	0.167792	1.82	0.069	0.084955
Dependents (Referent: No)					
Young dependents	-0.12934	0.160857	-0.8	0.422	-0.04012
Old dependents	-0.02158	0.27199	-0.08	0.937	-0.00326
Both	-0.35236	0.268227	-1.31	0.19	-0.05455
Years qualified (Referent: 2 to 6 years)					
6 to 10 years	0.108233	0.473885	0.23	0.819	0.017927
11 to 20 years	1.162755	0.579844	2.01	0.045	0.282786
21 to 30 years	0.571548	0.61686	0.93	0.355	0.165841
31 to 40 years	0.462147	0.668235	0.69	0.489	0.127357
41 years or longer	0.091638	0.816437	0.11	0.911	0.013653

Outcome of fully adjusted sector-withdrawal behaviour model	Coef. B	Std. Err.	t	P>|t|	β
Years in community pharmacy (Referent: 2 to 6 years)					
6 to 10 years	-0.33556	0.380408	-0.88	0.378	-0.06247
11 to 20 years	-1.49287	0.424034	-3.52	0	-0.38553
21 to 30 years	-1.24622	0.426916	-2.92	0.004	-0.3641
31 to 40 years	-1.30609	0.46231	-2.83	0.005	-0.33245
41 years or longer	-0.83803	0.643798	-1.3	0.194	-0.10851
Community pharmacy Job-role (Referent: Proprietor / Owner)					
Manager	-0.4779	0.283737	-1.68	0.093	-0.13614
Relief	-0.43896	0.353233	-1.24	0.215	-0.08108
Second	-0.7428	0.353226	-2.1	0.036	-0.1268
Locum	-0.35742	0.288154	-1.24	0.215	-0.10356
Non-store	-0.22869	0.461932	-0.5	0.621	-0.02272
Others	-0.28876	0.336171	-0.86	0.391	-0.04832
Non-employee community pharmacist	0	(omitted)			0
Size of pharmacy (Referent: Independent)					
Small-chain	0.033987	0.243718	0.14	0.889	0.006473
Medium-sized multiple	0.195951	0.22014	0.89	0.374	0.047656
Large-multiple	0.049744	0.207614	0.24	0.811	0.015422
More than one sized	0.246002	0.400886	0.61	0.54	0.025969
Actual hours part-time hours	-0.24831	0.2682	-0.93	0.355	-0.076
Non-community role	0.85012	0.193179	4.4	0	0.173161
_cons	5.877748	0.648388	9.07	0	.

Appendix 9.16 Outcome of fully adjusted reduction-in-hours withdrawal behaviour regression model

Outcome of fully adjusted reduction-in-hours withdrawal behaviour model	Coef. B	Std. Err.	t	P>|t|	β
Affective-professional commitment	-0.28063	0.078394	-3.58	0	-0.18039
Continuance-professional commitment	0.035285	0.072948	0.48	0.629	0.022196
Normative-professional commitment	0.122515	0.073024	1.68	0.094	0.090199
Affective-organisational commitment	-0.29383	0.094522	-3.11	0.002	-0.23784
High-sacrifice continuance-organisational commitment	0.223705	0.075251	2.97	0.003	0.171289
Low-alternative continuance-organisational commitment	-0.14243	0.066139	-2.15	0.032	-0.11426
Normative-organisational commitment	-0.07248	0.103386	-0.7	0.484	-0.05695
Gender: female	-0.13574	0.194008	-0.7	0.484	-0.03522
Age (Referent: Below 30 years old)					
31 to 40 years old	0.026589	0.495006	0.05	0.957	0.005379
41 to 50 years old	0.242919	0.544719	0.45	0.656	0.059657
51 to 60 years old	0.27819	0.607374	0.46	0.647	0.069397
61 years old and above	0.515284	0.716816	0.72	0.473	0.084793
Ethnicity (Referent: White)					
Black	0.842167	0.664937	1.27	0.206	0.05313
Mixed ethnicity	0.284261	0.608989	0.47	0.641	0.019004
Asian	0.306283	0.227615	1.35	0.179	0.059332
Other	-0.49929	0.520013	-0.96	0.337	-0.03997
Living arrangements (Referent: Living alone)					
Married / living with partner	-0.28395	0.288305	-0.98	0.325	-0.05526
Living with other	-0.52969	0.420535	-1.26	0.208	-0.06343
Main breadwinner (Referent: Yes)					
No	-0.42981	0.257183	-1.67	0.095	-0.09186
Joint	0.121653	0.206685	0.59	0.556	0.029184
Dependents (Referent: No)					
Young dependents	-0.23055	0.197636	-1.17	0.244	-0.0617
Old dependents	0.658961	0.333537	1.98	0.049	0.085955
Both	-0.07783	0.328916	-0.24	0.813	-0.01041
Years qualified (Referent: 2 to 6 years)					
6 to 10 years	0.41475	0.581109	0.71	0.476	0.059359
11 to 20 years	-0.47857	0.711039	-0.67	0.501	-0.10054
21 to 30 years	-0.44632	0.756547	-0.59	0.555	-0.11166
31 to 40 years	-0.58083	0.819669	-0.71	0.479	-0.13795

Outcome of fully adjusted reduction-in-hours withdrawal behaviour model	Coef. B	Std. Err.	t	P>|t|	β
41 years or longer	-0.67608	1.001376	-0.68	0.5	-0.08704
Years in community pharmacy (Referent: 2 to 6 years)					
6 to 10 years	-0.53001	0.466503	-1.14	0.256	-0.08526
11 to 20 years	-0.11071	0.519995	-0.21	0.831	-0.02469
21 to 30 years	0.018468	0.523514	0.04	0.972	0.004653
31 to 40 years	0.058253	0.567135	0.1	0.918	0.012769
41 years or longer	0.286414	0.789504	0.36	0.717	0.032047
Community pharmacy Job-role (Referent: Proprietor / Owner)					
Manager	-0.61486	0.348207	-1.77	0.078	-0.151
Relief	-1.06966	0.433437	-2.47	0.014	-0.17072
Second	-0.86392	0.433388	-1.99	0.047	-0.12742
Locum	-0.55777	0.354052	-1.58	0.116	-0.13934
Non-store	-1.03173	0.566492	-1.82	0.069	-0.08857
Others	-1.08988	0.4123	-2.64	0.008	-0.15759
Non-employee community pharmacist	0	(omitted)			0
Size of pharmacy (Referent: Independent)					
Small-chain	0.16812	0.300296	0.56	0.576	0.027461
Medium-sized multiple	0.21484	0.270257	0.79	0.427	0.044974
Large-multiple	0.041212	0.254625	0.16	0.871	0.011024
More than one sized	0.357481	0.491682	0.73	0.468	0.032611
Actual hours part-time hours	0.192309	0.328988	0.58	0.559	0.050799
Non-community role	-0.11828	0.236977	-0.5	0.618	-0.02082
_cons	6.159039	0.795474	7.74	0	.

Appendix 9.17 Outcome of fully adjusted in-role behaviour regression model

Outcome of fully adjusted in-role behaviour model	Coef. B	Std. Err.	t	P>|t|	β
Affective-professional commitment	0.112819	0.02889	3.91	0	0.204602
Continuance-professional commitment	0.051501	0.027216	1.89	0.059	0.090925
Normative-professional commitment	-0.00356	0.02694	-0.13	0.895	-0.0074
Affective-organisational commitment	0.073093	0.03506	2.08	0.038	0.166253
High-sacrifice continuance-organisational commitment	-0.03211	0.027777	-1.16	0.248	-0.06886
Low-alternative continuance-organisational commitment	0.00961	0.024417	0.39	0.694	0.021737
Normative-organisational commitment	-0.04555	0.038332	-1.19	0.235	-0.10059
Gender: female	0.178326	0.070778	2.52	0.012	0.130478
Age (Referent: Below 30 years old)					
31 to 40 years old	0.075919	0.180344	0.42	0.674	0.04343
41 to 50 years old	-0.00219	0.198945	-0.01	0.991	-0.00151
51 to 60 years old	0.137588	0.221777	0.62	0.535	0.096809
61 years old and above	0.211679	0.262142	0.81	0.42	0.097818
Ethnicity (Referent: White)					
Black	-0.27814	0.242062	-1.15	0.251	-0.04966
Mixed ethnicity	0.098356	0.221908	0.44	0.658	0.018611
Asian	0.095155	0.083389	1.14	0.254	0.051891
Other	-0.03526	0.189346	-0.19	0.852	-0.00799
Living arrangements (Referent: Living alone)					
Married / living with partner	-0.03766	0.105789	-0.36	0.722	-0.02063
Living with other	0.172678	0.153516	1.12	0.261	0.058514
Main breadwinner (Referent: Yes)					
No	-0.00624	0.09455	-0.07	0.947	-0.00375
Joint	0.019765	0.075229	0.26	0.793	0.013346
Dependents (Referent: No)					
Young dependents	0.06646	0.071993	0.92	0.356	0.050125
Old dependents	-0.14868	0.124877	-1.19	0.234	-0.05343
Both	-0.0461	0.120051	-0.38	0.701	-0.01745
Years qualified (Referent: 2 to 6 years)					
6 to 10 years	-0.08449	0.211583	-0.4	0.69	-0.03422
11 to 20 years	0.002595	0.259097	0.01	0.992	0.00153
21 to 30 years	0.128756	0.276582	0.47	0.642	0.090858
31 to 40 years	-0.1617	0.300286	-0.54	0.59	-0.10808
41 years or longer	0.231582	0.366264	0.63	0.527	0.084364

Outcome of fully adjusted in-role behaviour model	Coef. B	Std. Err.	t	P>|t|	β
Years in community pharmacy (Referent: 2 to 6 years)					
6 to 10 years	0.002597	0.169807	0.02	0.988	0.001182
11 to 20 years	-0.05004	0.189549	-0.26	0.792	-0.03147
21 to 30 years	-0.10706	0.190891	-0.56	0.575	-0.07597
31 to 40 years	-0.00286	0.207904	-0.01	0.989	-0.00176
41 years or longer	-0.09618	0.287786	-0.33	0.738	-0.03046
Community pharmacy Job-role (Referent: Proprietor / Owner)					
Manager	-0.0466	0.127307	-0.37	0.714	-0.03233
Relief	0.018233	0.158544	0.12	0.908	0.008167
Second	-0.06145	0.157938	-0.39	0.697	-0.02564
Locum	0.156027	0.129204	1.21	0.228	0.109783
Non-store	0.18697	0.20662	0.9	0.366	0.045426
Others	-0.06151	0.151102	-0.41	0.684	-0.02491
Non-employee community pharmacist	0	(omitted)			0
Size of pharmacy (Referent: Independent)					
Small-chain	-0.04066	0.109388	-0.37	0.71	-0.01879
Medium-sized multiple	-0.03508	0.098761	-0.36	0.723	-0.02069
Large-multiple	-0.03785	0.092958	-0.41	0.684	-0.02853
More than one sized	0.074798	0.179041	0.42	0.676	0.019311
Actual hours part-time hours	-0.02988	0.121572	-0.25	0.806	-0.02222
Non-community role	0.05995	0.087849	0.68	0.495	0.029475
_cons	3.290135	0.290721	11.32	0	.

Appendix 9.18 Outcome of fully adjusted extra-role behaviour-individual regression model

Outcome of fully adjusted extra-role behaviour towards the individual model	Coef. B	Std. Err.	t	P>|t|	β
Affective-professional commitment	0.072516	0.028112	2.58	0.01	0.137932
Continuance-professional commitment	0.067772	0.026033	2.6	0.01	0.126246
Normative-professional commitment	-0.00475	0.026176	-0.18	0.856	-0.0103
Affective-organisational commitment	0.058122	0.03385	1.72	0.087	0.138354
High-sacrifice continuance-organisational commitment	-0.00964	0.02699	-0.36	0.721	-0.02173
Low-alternative continuance-organisational commitment	0.017944	0.023544	0.76	0.446	0.042682
Normative-organisational commitment	-0.02378	0.036948	-0.64	0.52	-0.05517
Gender: female	0.242812	0.06817	3.56	0	0.186235
Age (Referent: Below 30 years old)					
31 to 40 years old	-0.05766	0.173167	-0.33	0.739	-0.03465
41 to 50 years old	-0.02431	0.191378	-0.13	0.899	-0.01751
51 to 60 years old	0.234044	0.213505	1.1	0.274	0.171919
61 years old and above	0.402402	0.25305	1.59	0.112	0.196327
Ethnicity (Referent: White)					
Black	0.223717	0.250005	0.89	0.371	0.039533
Mixed ethnicity	-0.19511	0.226261	-0.86	0.389	-0.03682
Asian	-0.09374	0.081395	-1.15	0.25	-0.05317
Other	-0.1064	0.182093	-0.58	0.559	-0.02548
Living arrangements (Referent: Living alone)					
Married / living with partner	-0.01179	0.102377	-0.12	0.908	-0.00678
Living with other	-0.12849	0.148324	-0.87	0.387	-0.046
Main breadwinner (Referent: Yes)					
No	0.002593	0.091102	0.03	0.977	0.001613
Joint	-0.00704	0.072441	-0.1	0.923	-0.005
Dependents (Referent: No)					
Young dependents	0.098598	0.070321	1.4	0.161	0.07777
Old dependents	0.029377	0.118124	0.25	0.804	0.011305
Both	0.128258	0.116594	1.1	0.272	0.05065
Years qualified (Referent: 2 to 6 years)					
6 to 10 years	-0.24915	0.203146	-1.23	0.221	-0.10656
11 to 20 years	-0.35061	0.248868	-1.41	0.159	-0.21727
21 to 30 years	-0.40817	0.265617	-1.54	0.125	-0.29983
31 to 40 years	-0.64673	0.28819	-2.24	0.025	-0.45229
41 years or longer	-0.45641	0.352509	-1.29	0.196	-0.17564

Outcome of fully adjusted extra-role behaviour towards the individual model	Coef. B	Std. Err.	t	P>|t|	β
Years in community pharmacy (Referent: 2 to 6 years)					
6 to 10 years	0.135515	0.163431	0.83	0.407	0.065118
11 to 20 years	0.306206	0.18253	1.68	0.094	0.201187
21 to 30 years	0.387261	0.183731	2.11	0.036	0.286575
31 to 40 years	0.43895	0.199139	2.2	0.028	0.283246
41 years or longer	0.370603	0.276328	1.34	0.18	0.12399
Community pharmacy Job-role (Referent: Proprietor / Owner)					
Manager	-0.00884	0.125048	-0.07	0.944	-0.00642
Relief	-0.07283	0.155204	-0.47	0.639	-0.03417
Second	0.096472	0.156232	0.62	0.537	0.041261
Locum	0.032499	0.125932	0.26	0.796	0.024015
Non-store	0.148614	0.204618	0.73	0.468	0.0369
Others	-0.00613	0.147646	-0.04	0.967	-0.0026
Non-employee community pharmacist	0	(omitted)			0
Size of pharmacy (Referent: Independent)					
Small-chain	-0.05265	0.107501	-0.49	0.625	-0.0253
Medium-sized multiple	0.018472	0.097068	0.19	0.849	0.011447
Large-multiple	-0.00981	0.091371	-0.11	0.915	-0.00774
More than one sized	-0.16046	0.172998	-0.93	0.354	-0.04378
Actual hours part-time hours	-0.00445	0.071294	-0.06	0.95	-0.00345
Non-community role	0.068993	0.083412	0.83	0.409	0.03603
_cons	3.290135	0.290721	11.32	0	.

Appendix 9.19 Outcome of fully adjusted extra-role behaviour-organisation regression model

Outcome of fully adjusted extra-role behaviour towards the organisation model	Coef. B	Std. Err.	t	P>|t|	β
Affective-professional commitment	0.114226	0.023131	4.94	0.001	0.256022
Continuance-professional commitment	0.071366	0.021574	3.31	0.001	0.156813
Normative-professional commitment	-0.03299	0.021549	-1.53	0.126	-0.08471
Affective-organisational commitment	0.065648	0.028089	2.34	0.02	0.185194
High-sacrifice continuance-organisational commitment	-0.03232	0.022006	-1.47	0.143	-0.08619
Low-alternative continuance-organisational commitment	0.04074	0.019505	2.09	0.037	0.113545
Normative-organisational commitment	-0.05298	0.030593	-1.73	0.084	-0.1448
Gender: female	0.050788	0.056529	0.9	0.369	0.046129
Age (Referent: Below 30 years old)					
31 to 40 years old	0.18129	0.143833	1.26	0.208	0.127666
41 to 50 years old	0.17153	0.158415	1.08	0.279	0.147152
51 to 60 years old	0.402591	0.176755	2.28	0.023	0.350359
61 years old and above	0.405328	0.208772	1.94	0.053	0.234229
Ethnicity (Referent: White)					
Black	-0.23502	0.193216	-1.22	0.224	-0.0521
Mixed ethnicity	0.238746	0.176938	1.35	0.178	0.056088
Asian	0.000325	0.066456	0	0.996	0.00022
Other	-0.04408	0.15111	-0.29	0.771	-0.0124
Living arrangements (Referent: Living alone)					
Married / living with partner	-0.04009	0.084399	-0.47	0.635	-0.02726
Living with other	-0.08794	0.122474	-0.72	0.473	-0.03699
Main breadwinner (Referent: Yes)					
No	-0.03353	0.075246	-0.45	0.656	-0.02489
Joint	0.007876	0.060178	0.13	0.896	0.006598
Dependents (Referent: No)					
Young dependents	0.053763	0.057844	0.93	0.353	0.050258
Old dependents	-0.02355	0.098298	-0.24	0.811	-0.01065
Both	0.030464	0.096718	0.31	0.753	0.014138
Years qualified (Referent: 2 to 6 years)					
6 to 10 years	-0.00236	0.16883	-0.01	0.989	-0.00118
11 to 20 years	-0.20247	0.2066	-0.98	0.328	-0.14821
21 to 30 years	-0.05973	0.21982	-0.27	0.786	-0.05221
31 to 40 years	-0.24962	0.238144	-1.05	0.295	-0.20657
41 years or longer	-0.09456	0.290953	-0.33	0.745	-0.04277

Outcome of fully adjusted extra-role behaviour towards the organisation model	Coef. B	Std. Err.	t	P>|t|	β
Years in community pharmacy (Referent: 2 to 6 years)					
6 to 10 years	-0.14333	0.135559	-1.06	0.291	-0.08097
11 to 20 years	-0.02923	0.151047	-0.19	0.847	-0.02274
21 to 30 years	-0.05438	0.152119	-0.36	0.721	-0.04781
31 to 40 years	-0.03464	0.164921	-0.21	0.834	-0.02648
41 years or longer	-0.03547	0.229382	-0.15	0.877	-0.01394
Community pharmacy Job-role (Referent: Proprietor / Owner)					
Manager	0.010772	0.1035	0.1	0.917	0.009272
Relief	0.012174	0.128579	0.09	0.925	0.006769
Second	0.051048	0.127681	0.4	0.689	0.026445
Locum	0.000529	0.105601	0.01	0.996	0.000461
Non-store	0.142639	0.166068	0.86	0.391	0.043025
Others	0.009528	0.12264	0.08	0.938	0.00479
Non-employee community pharmacist	0	(omitted)			0
Size of pharmacy (Referent: Independent)					
Small-chain	-0.14964	0.088163	-1.7	0.09	-0.08519
Medium-sized multiple	-0.00465	0.079486	-0.06	0.953	-0.00342
Large-multiple	-0.01468	0.075229	-0.2	0.845	-0.01371
More than one sized	-0.07114	0.143365	-0.5	0.62	-0.0228
Actual hours part-time hours	0.045121	0.09718	0.46	0.643	0.0416
Non-community role	0.065228	0.069873	0.93	0.351	0.039806
_cons	3.468045	0.233266	14.87	0	.

Appendix 10.1 Structural Model

Summary of Relationships Tested within the Full Hypothesised Structural Model

PWB	<---	APC
PWB	<---	CPC
PWB	<---	AOC
PWB	<---	NPC
OWB	<---	AOC
OWB	<---	APC
IRB	<---	APC
OWB	<---	PWB
OWB	<---	LoAlt_COC
IRB	<---	AOC
IRB	<---	HiSac_COC
IRB	<---	LoAlt_COC
IRB	<---	CPC
IRB	<---	NPC
OWB	<---	HiSac_COC
OWB	<---	NOC
IRB	<---	NOC
SWB	<---	APC
SWB	<---	PWB
SWB	<---	OWB
SWB	<---	NPC
ERBI	<---	APC
SWB	<---	NOC
ERBI	<---	NOC
ERBI	<---	NPC
ERBI	<---	IRB
SWB	<---	LoAlt_COC
SWB	<---	HiSac_COC
SWB	<---	AOC
RHWB	<---	AOC
RHWB	<---	APC
RHWB	<---	NOC
RHWB	<---	HiSac_COC
RHWB	<---	LoAlt_COC
ERBO	<---	APC
ERBO	<---	ERBI
ERBO	<---	CPC
RHWB	<---	SWB
ERBO	<---	HiSac_COC
RHWB	<---	CPC
RHWB	<---	OWB
ERBO	<---	NPC
ERBO	<---	IRB
RHWB	<---	PWB
ERBO	<---	NOC

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Appendix 10.2 Structural Model Full Sample

			ML Estimate	SE Estimate	CR	df	p	ML Estimate
Regression Weights								
PWB	**<---**	**APC**	**-0.725**	**0.093**	**-7.761**	**130529.502**	**0.000**	***
PWB	**<---**	**CPC**	**-0.092**	**0.031**	**-2.967**	**6106.851**	**0.003**	**
PWB	<---	AOC	-0.040	0.027	-1.452	10156.707	0.147	
PWB	<---	NPC	-0.032	0.033	-0.980	230046.452	0.327	
OWB	<---	NOC	0.049	0.092	0.528	11751.802	0.598	
OWB	**<---**	**AOC**	**-0.283**	**0.077**	**-3.662**	**6532.624**	**0.000**	***
OWB	<---	APC	0.128	0.083	1.546	23563.414	0.122	
OWB	<---	HiSac_COC	0.104	0.098	1.066	3219.361	0.286	
OWB	<---	LoAlt_COC	-0.038	0.102	-0.372	1673.567	0.710	
OWB	**<---**	**PWB**	**0.510**	**0.066**	**7.678**	**13886.901**	**0.000**	***
IRB	<---	APC	0.167	0.095	1.769	7519.593	0.077	+
IRB	<---	AOC	0.159	0.110	1.447	359.814	0.149	
IRB	<---	HiSac_COC	-0.024	0.134	-0.177	1294.445	0.860	
IRB	<---	LoAlt_COC	-0.037	0.119	-0.314	219.687	0.753	
IRB	<---	CPC	0.060	0.043	1.394	782.389	0.164	
IRB	<---	NPC	0.015	0.051	0.285	1350.557	0.776	
IRB	<---	NOC	-0.176	0.155	-1.136	268.825	0.257	
SWB	<---	APC	0.104	0.108	0.962	101942.370	0.336	
SWB	**<---**	**PWB**	**0.731**	**0.088**	**8.318**	**717966.345**	**0.000**	***
SWB	**<---**	**OWB**	**0.265**	**0.079**	**3.359**	**308593.123**	**0.001**	***
SWB	<---	NPC	0.063	0.055	1.157	30069.413	0.247	
SWB	<---	NOC	-0.063	0.180	-0.352	23708.309	0.725	
SWB	<---	LoAlt_COC	-0.066	0.110	-0.604	284.542	0.546	
SWB	<---	HiSac_COC	0.069	0.115	0.596	652.287	0.551	
SWB	<---	AOC	-0.031	0.136	-0.227	51280.808	0.820	
ERBI	**<---**	**APC**	**0.126**	**0.048**	**2.636**	**11820.938**	**0.008**	**
ERBI	<---	NOC	0.031	0.022	1.376	8773.444	0.169	
ERBI	<---	NPC	-0.039	0.023	-1.667	1234.734	0.096	+
ERBI	**<---**	**IRB**	**0.338**	**0.051**	**6.586**	**119745.062**	**0.000**	***
RHWB	**<---**	**AOC**	**-0.211**	**0.088**	**-2.398**	**123067.777**	**0.016**	*
RHWB	<---	APC	0.142	0.111	1.273	252247.748	0.203	
RHWB	<---	NOC	0.155	0.105	1.471	19943.018	0.141	
RHWB	<---	HiSac_COC	0.239	0.165	1.445	3427.797	0.148	
RHWB	**<---**	**LoAlt_COC**	**-0.360**	**0.155**	**-2.321**	**6715.965**	**0.020**	*
RHWB	<---	SWB	0.007	0.101	0.067	65486.370	0.946	
RHWB	**<---**	**OWB**	**0.181**	**0.089**	**2.036**	**56125.041**	**0.042**	*
RHWB	**<---**	**PWB**	**0.493**	**0.138**	**3.571**	**552337.886**	**0.000**	***
RHWB	<---	CPC	0.034	0.046	0.735	9214.942	0.462	
ERBO	<---	APC	0.032	0.046	0.696	13372.458	0.487	
ERBO	**<---**	**ERBI**	**0.519**	**0.060**	**8.648**	**910843.002**	**0.000**	***
ERBO	**<---**	**CPC**	**0.069**	**0.021**	**3.242**	**19826.057**	**0.001**	**
ERBO	<---	HiSac_COC	-0.015	0.044	-0.335	14472.486	0.738	
ERBO	<---	NPC	-0.024	0.019	-1.237	264424.494	0.216	
ERBO	**<---**	**IRB**	**0.198**	**0.037**	**5.305**	**17136.831**	**0.000**	***
ERBO	<---	NOC	0.004	0.022	0.161	10200.189	0.872	
			0.000					
Standardized Regression Weights								
PWB	**<---**	**APC**	**-0.540**	**0.061**	**-8.782**	**64374.057**	**0.000**	***
PWB	**<---**	**CPC**	**-0.150**	**0.049**	**-3.093**	**7730.094**	**0.002**	**
PWB	<---	AOC	-0.076	0.052	-1.471	9384.253	0.141	
PWB	<---	NPC	-0.055	0.057	-0.973	274650.620	0.330	
OWB	<---	NOC	0.079	0.149	0.530	13497.136	0.596	
OWB	**<---**	**AOC**	**-0.548**	**0.142**	**-3.858**	**8757.440**	**0.000**	***

OWB	<---	APC	0.096	0.061	1.586	23957.025	0.113	
OWB	<---	HiSac_COC	0.095	0.088	1.088	2720.175	0.277	
OWB	<---	LoAlt_COC	-0.028	0.076	-0.368	1600.471	0.713	
OWB	**<---**	**PWB**	**0.515**	**0.063**	**8.223**	**19626.390**	**0.000**	***
IRB	<---	APC	0.135	0.075	1.798	8171.483	0.072	+
IRB	<---	AOC	0.329	0.226	1.456	330.030	0.146	
IRB	<---	HiSac_COC	-0.023	0.128	-0.179	1244.853	0.858	
IRB	<---	LoAlt_COC	-0.029	0.094	-0.314	209.466	0.754	
IRB	<---	CPC	0.106	0.075	1.409	767.152	0.159	
IRB	<---	NPC	0.027	0.094	0.290	1248.332	0.772	
IRB	<---	NOC	-0.305	0.268	-1.137	264.130	0.257	
SWB	<---	APC	0.069	0.072	0.969	101611.871	0.332	
SWB	**<---**	**PWB**	**0.654**	**0.072**	**9.127**	**574903.920**	**0.000**	***
SWB	**<---**	**OWB**	**0.235**	**0.068**	**3.435**	**183174.594**	**0.001**	***
SWB	<---	NPC	0.097	0.082	1.184	21441.253	0.237	
SWB	<---	NOC	-0.091	0.256	-0.357	21897.783	0.721	
SWB	<---	LoAlt_COC	-0.043	0.071	-0.609	276.357	0.543	
SWB	<---	HiSac_COC	0.055	0.091	0.608	598.727	0.543	
SWB	<---	AOC	-0.053	0.231	-0.230	52048.368	0.818	
ERBI	**<---**	**APC**	**0.128**	**0.047**	**2.746**	**18291.465**	**0.006**	**
ERBI	<---	NOC	0.067	0.049	1.362	10264.422	0.173	
ERBI	<---	NPC	-0.090	0.053	-1.683	1335.095	0.093	+
ERBI	**<---**	**IRB**	**0.427**	**0.055**	**7.806**	**182073.619**	**0.000**	***
RHWB	**<---**	**AOC**	**-0.385**	**0.158**	**-2.428**	**129829.775**	**0.015**	*
RHWB	<---	APC	0.100	0.078	1.281	220466.146	0.200	
RHWB	<---	NOC	0.237	0.161	1.471	18592.647	0.141	
RHWB	<---	HiSac_COC	0.206	0.139	1.487	3120.960	0.137	
RHWB	**<---**	**LoAlt_COC**	**-0.251**	**0.111**	**-2.268**	**10041.420**	**0.023**	*
RHWB	<---	SWB	0.007	0.108	0.067	66007.135	0.947	
RHWB	**<---**	**OWB**	**0.171**	**0.083**	**2.071**	**55994.677**	**0.038**	*
RHWB	**<---**	**PWB**	**0.470**	**0.126**	**3.744**	**741857.458**	**0.000**	***
RHWB	<---	CPC	0.052	0.070	0.748	8684.160	0.455	
ERBO	<---	APC	0.035	0.050	0.699	17271.293	0.485	
ERBO	**<---**	**ERBI**	**0.565**	**0.050**	**11.377**	**36555.069**	**0.000**	***
ERBO	**<---**	**CPC**	**0.166**	**0.048**	**3.452**	**15310.570**	**0.001**	***
ERBO	<---	HiSac_COC	-0.020	0.059	-0.337	13916.570	0.736	
ERBO	<---	NPC	-0.060	0.048	-1.245	132468.786	0.213	
ERBO	**<---**	**IRB**	**0.272**	**0.046**	**5.854**	**25193.754**	**0.000**	***
ERBO	<---	NOC	0.009	0.053	0.165	8813.295	0.869	
Squared Multiple Correlations								
PWB			0.404	0.054	7.469	13978.279	0.000	***
IRB			0.068	0.027	2.497	643.149	0.013	*
OWB			0.534	0.044	12.100	197144.110	0.000	***
SWB			0.636	0.045	14.210	128538.955	0.000	***
ERBI			0.219	0.047	4.657	176711.956	0.000	***
RHWB			0.357	0.056	6.334	405027.452	0.000	***
ERBO			0.580	0.056	10.410	131280.377	0.000	***

*** p < 0.001, ** p<0.01, * p<0.05, + p<0.1

Appendix 10.3 Structural Model Full Sample

			ML Estimate	SE Estimate	CR	df	p	ML Estimate
Total effects								
PWB		NPC	-0.032	0.033	-0.980	230046.452	0.327	
IRB		NPC	0.015	0.051	0.285	1350.557	0.776	
OWB		NPC	-0.017	0.017	-0.975	499512.390	0.330	
SWB		NPC	0.035	0.058	0.607	17012.343	0.544	
ERBI		NPC	-0.034	0.030	-1.142	672.053	0.254	
RHWB		NPC	-0.019	0.022	-0.860	219097.418	0.390	
ERBO		NPC	-0.038	0.030	-1.284	1041.345	0.199	
PWB		**CPC**	**-0.092**	**0.031**	**-2.967**	**6106.851**	**0.003**	**
IRB		CPC	0.060	0.043	1.394	782.389	0.164	
OWB		**CPC**	**-0.047**	**0.017**	**-2.842**	**16949.560**	**0.004**	**
SWB		**CPC**	**-0.080**	**0.028**	**-2.817**	**7745.544**	**0.005**	**
ERBI		CPC	0.020	0.016	1.311	853.938	0.190	
RHWB		CPC	-0.021	0.046	-0.450	22404.822	0.652	
ERBO		**CPC**	**0.091**	**0.029**	**3.116**	**2403.253**	**0.002**	**
PWB		**APC**	**-0.725**	**0.093**	**-7.761**	**130529.502**	**0.000**	***
IRB		APC	0.167	0.095	1.769	7519.593	0.077	+
OWB		**APC**	**-0.241**	**0.072**	**-3.375**	**331916.123**	**0.001**	***
SWB		**APC**	**-0.490**	**0.103**	**-4.767**	**48436.674**	**0.000**	***
ERBI		**APC**	**0.182**	**0.061**	**2.981**	**6041.077**	**0.003**	**
RHWB		**APC**	**-0.263**	**0.096**	**-2.743**	**218884.719**	**0.006**	**
ERBO		**APC**	**0.160**	**0.064**	**2.479**	**3777.177**	**0.013**	*
IRB		NOC	-0.176	0.155	-1.136	268.825	0.257	
OWB		NOC	0.049	0.092	0.528	11751.802	0.598	
SWB		NOC	-0.051	0.181	-0.280	18153.191	0.780	
ERBI		NOC	-0.029	0.061	-0.470	662.695	0.638	
RHWB		NOC	0.163	0.107	1.521	19706.792	0.128	
ERBO		NOC	-0.046	0.066	-0.696	293.427	0.487	
IRB		LoAlt_COC	-0.037	0.119	-0.314	219.687	0.753	
OWB		LoAlt_COC	-0.038	0.102	-0.372	1673.567	0.710	
SWB		LoAlt_COC	-0.076	0.111	-0.683	377.853	0.495	
ERBI		LoAlt_COC	-0.013	0.040	-0.317	229.667	0.751	
RHWB		**LoAlt_COC**	**-0.367**	**0.155**	**-2.362**	**8236.671**	**0.018**	*
ERBO		LoAlt_COC	-0.014	0.044	-0.317	209.027	0.752	
IRB		HiSac_COC	-0.024	0.134	-0.177	1294.445	0.860	
OWB		HiSac_COC	0.104	0.098	1.066	3219.361	0.286	
SWB		HiSac_COC	0.096	0.120	0.802	811.609	0.423	
ERBI		HiSac_COC	-0.008	0.046	-0.174	1315.122	0.862	
RHWB		HiSac_COC	0.258	0.166	1.554	3654.345	0.120	
ERBO		HiSac_COC	-0.024	0.064	-0.370	2380.615	0.711	
PWB		AOC	-0.040	0.027	-1.452	10156.707	0.147	
IRB		AOC	0.159	0.110	1.447	359.814	0.149	
OWB		**AOC**	**-0.303**	**0.079**	**-3.851**	**9413.872**	**0.000**	***
SWB		AOC	-0.140	0.130	-1.076	38352.317	0.282	
ERBI		AOC	0.054	0.039	1.365	509.987	0.173	
RHWB		**AOC**	**-0.286**	**0.083**	**-3.436**	**107940.871**	**0.001**	***
ERBO		AOC	0.059	0.044	1.357	401.575	0.175	
OWB		**PWB**	**0.510**	**0.066**	**7.678**	**13886.901**	**0.000**	***
SWB		**PWB**	**0.867**	**0.076**	**11.338**	**6564742.978**	**0.000**	***
RHWB		**PWB**	**0.591**	**0.081**	**7.333**	**16098125.296**	**0.000**	***
ERBI		**IRB**	**0.338**	**0.051**	**6.586**	**119745.062**	**0.000**	***
ERBO		**IRB**	**0.373**	**0.055**	**6.828**	**408386.541**	**0.000**	***
SWB		**OWB**	**0.265**	**0.079**	**3.359**	**308593.123**	**0.001**	***

RHWB		**OWB**	**0.183**	**0.086**	**2.125**	**69206.310**	**0.034**	*
RHWB		SWB	0.007	0.101	0.067	65486.370	0.946	
ERBO		**ERBI**	**0.519**	**0.060**	**8.648**	**910843.002**	**0.000**	***
Standardized Total Effects								
PWB		NPC	-0.055	0.057	-0.973	274650.620	0.330	
IRB		NPC	0.027	0.094	0.290	1248.332	0.772	
OWB		NPC	-0.029	0.030	-0.958	281632.382	0.338	
SWB		NPC	0.053	0.087	0.616	16696.306	0.538	
ERBI		NPC	-0.078	0.069	-1.130	741.268	0.259	
RHWB		NPC	-0.030	0.035	-0.867	227344.154	0.386	
ERBO		NPC	-0.097	0.072	-1.341	1016.137	0.180	
PWB		**CPC**	**-0.150**	**0.049**	**-3.093**	**7730.094**	**0.002**	**
IRB		CPC	0.106	0.075	1.409	767.152	0.159	
OWB		**CPC**	**-0.077**	**0.026**	**-2.948**	**10343.910**	**0.003**	**
SWB		**CPC**	**-0.116**	**0.039**	**-2.979**	**6829.126**	**0.003**	**
ERBI		CPC	0.045	0.034	1.335	783.836	0.182	
RHWB		CPC	-0.032	0.071	-0.458	21179.308	0.647	
ERBO		**CPC**	**0.221**	**0.066**	**3.367**	**1655.929**	**0.001**	***
PWB		**APC**	**-0.540**	**0.061**	**-8.782**	**64374.057**	**0.000**	***
IRB		APC	0.135	0.075	1.798	8171.483	0.072	+
OWB		**APC**	**-0.181**	**0.054**	**-3.366**	**385025.553**	**0.001**	***
SWB		**APC**	**-0.326**	**0.067**	**-4.892**	**22807.164**	**0.000**	***
ERBI		**APC**	**0.185**	**0.059**	**3.156**	**7515.650**	**0.002**	**
RHWB		**APC**	**-0.187**	**0.067**	**-2.769**	**138958.783**	**0.006**	**
ERBO		**APC**	**0.177**	**0.065**	**2.712**	**3479.752**	**0.007**	**
IRB		NOC	-0.305	0.268	-1.137	264.130	0.257	
OWB		NOC	0.079	0.149	0.530	13497.136	0.596	
SWB		NOC	-0.073	0.258	-0.283	17174.128	0.777	
ERBI		NOC	-0.063	0.132	-0.479	563.170	0.632	
RHWB		NOC	0.250	0.164	1.529	18333.144	0.126	
ERBO		NOC	-0.110	0.156	-0.708	300.865	0.480	
IRB		LoAlt_COC	-0.029	0.094	-0.314	209.466	0.754	
OWB		LoAlt_COC	-0.028	0.076	-0.368	1600.471	0.713	
SWB		LoAlt_COC	-0.050	0.072	-0.693	403.030	0.489	
ERBI		LoAlt_COC	-0.013	0.040	-0.320	221.288	0.749	
RHWB		**LoAlt_COC**	**-0.256**	**0.111**	**-2.311**	**14319.366**	**0.021**	*
ERBO		LoAlt_COC	-0.015	0.048	-0.315	207.686	0.753	
IRB		HiSac_COC	-0.023	0.128	-0.179	1244.853	0.858	
OWB		HiSac_COC	0.095	0.088	1.088	2720.175	0.277	
SWB		HiSac_COC	0.078	0.095	0.819	728.469	0.413	
ERBI		HiSac_COC	-0.010	0.055	-0.177	1287.873	0.860	
RHWB		HiSac_COC	0.223	0.139	1.600	3440.784	0.110	
ERBO		HiSac_COC	-0.032	0.085	-0.374	2292.750	0.708	
PWB		AOC	-0.076	0.052	-1.471	9384.253	0.141	
IRB		AOC	0.329	0.226	1.456	330.030	0.146	
OWB		**AOC**	**-0.586**	**0.144**	**-4.082**	**10210.480**	**0.000**	***
SWB		AOC	-0.241	0.223	-1.077	38240.812	0.281	
ERBI		AOC	0.141	0.100	1.400	449.136	0.162	
RHWB		**AOC**	**-0.522**	**0.150**	**-3.493**	**99273.467**	**0.000**	***
ERBO		AOC	0.169	0.122	1.385	397.070	0.167	
OWB		**PWB**	**0.515**	**0.063**	**8.223**	**19626.390**	**0.000**	***
SWB		**PWB**	**0.775**	**0.058**	**13.352**	**1167120.111**	**0.000**	***
RHWB		**PWB**	**0.563**	**0.070**	**8.092**	**12337198.102**	**0.000**	***
ERBI		**IRB**	**0.427**	**0.055**	**7.806**	**182073.619**	**0.000**	***
ERBO		**IRB**	**0.514**	**0.056**	**9.165**	**429461.778**	**0.000**	***
SWB		**OWB**	**0.235**	**0.068**	**3.435**	**183174.594**	**0.001**	***
RHWB		**OWB**	**0.172**	**0.080**	**2.158**	**75175.841**	**0.031**	*
RHWB		SWB	0.007	0.108	0.067	66007.135	0.947	

| ERBO | | ERBI | 0.565 | 0.050 | 11.377 | 36555.069 | 0.000 | *** |

Appendix 10.4 Structural Model Locum

			ML Estimate	SE Estimate	CR	df	p	ML Estimate
Regression Weights								
PWB	**<---**	**APC**	-0.694	0.161	-4.309	2542.120	0.000	***
PWB	**<---**	**CPC**	-0.142	0.058	-2.467	1127.381	0.014	*
PWB	<---	AOC	-0.039	0.060	-0.646	619.956	0.519	
PWB	**<---**	**NPC**	-0.129	0.065	-1.977	11491.319	0.048	*
OWB	<---	NOC	0.213	0.440	0.485	68283.603	0.627	
OWB	<---	AOC	-0.411	0.497	-0.828	375985.814	0.408	
OWB	<---	APC	0.165	0.334	0.495	23997.710	0.621	
OWB	<---	HiSac_COC	0.063	1.743	0.036	1054541.580	0.971	
OWB	<---	LoAlt_COC	-0.028	1.790	-0.016	2346999.974	0.988	
OWB	**<---**	**PWB**	0.525	0.218	2.410	731613.645	0.016	*
IRB	<---	APC	0.205	0.473	0.434	2262120.437	0.664	
IRB	<---	AOC	0.187	0.786	0.239	34069.214	0.811	
IRB	<---	HiSac_COC	0.107	1.495	0.072	178866.830	0.943	
IRB	<---	LoAlt_COC	-0.091	1.463	-0.062	696600.714	0.951	
IRB	<---	CPC	0.059	0.131	0.450	3052.611	0.653	
IRB	<---	NPC	-0.004	0.258	-0.016	4936.787	0.988	
IRB	<---	NOC	-0.254	0.905	-0.281	4485.335	0.779	
SWB	<---	APC	-0.194	0.607	-0.319	3550204.705	0.750	
SWB	<---	PWB	0.570	0.376	1.515	10700.153	0.130	
SWB	<---	OWB	0.374	0.309	1.210	134992.539	0.226	
SWB	<---	NPC	0.102	0.329	0.310	30502.001	0.756	
SWB	<---	NOC	-0.220	1.254	-0.175	186473.490	0.861	
SWB	<---	LoAlt_COC	-0.019	1.972	-0.010	2607719.621	0.992	
SWB	<---	HiSac_COC	0.130	1.874	0.069	8043425.839	0.945	
SWB	<---	AOC	0.126	1.127	0.112	625086.820	0.911	
ERBI	<---	APC	0.008	0.092	0.091	453.930	0.928	
ERBI	<---	NOC	0.094	0.049	1.923	875.399	0.055	+
ERBI	<---	NPC	-0.035	0.044	-0.804	521.114	0.422	
ERBI	**<---**	**IRB**	0.345	0.135	2.566	8290.638	0.010	*
RHWB	<---	AOC	-0.295	1.324	-0.223	13401302.598	0.824	
RHWB	<---	APC	0.087	0.872	0.100	414284.868	0.920	
RHWB	<---	NOC	0.065	1.107	0.059	2773451.053	0.953	
RHWB	<---	HiSac_COC	0.851	4.658	0.183	122717485.829	0.855	
RHWB	<---	LoAlt_COC	-0.885	4.930	-0.180	119924969.512	0.858	
RHWB	<---	SWB	-0.035	0.481	-0.072	642130.015	0.942	
RHWB	<---	OWB	0.235	0.729	0.323	1022988.922	0.747	
RHWB	<---	PWB	0.400	1.043	0.383	1044602.376	0.702	
RHWB	<---	CPC	0.006	0.268	0.022	165668.809	0.982	
ERBO	<---	APC	-0.027	0.093	-	72629.414	0.770	

						0.292		
ERBO	**<---**	**ERBI**	0.618	0.121	5.095	26553.891	0.000	***
ERBO	**<---**	**CPC**	0.076	0.039	1.963	3038.465	0.050	*
ERBO	<---	HiSac_COC	-0.012	0.078	-0.156	6390.899	0.876	
ERBO	<---	NPC	0.047	0.037	1.263	19376.185	0.207	
ERBO	**<---**	**IRB**	0.177	0.090	1.967	22120.441	0.049	*
ERBO	<---	NOC	-0.022	0.060	-0.366	232478.266	0.714	
Standardized Regression Weights								
PWB	**<---**	**APC**	-0.487	0.104	-4.686	1635.466	0.000	***
PWB	**<---**	**CPC**	-0.233	0.090	-2.575	1803.949	0.010	*
PWB	<---	AOC	-0.061	0.096	-0.637	620.268	0.524	
PWB	**<---**	**NPC**	-0.215	0.107	-2.005	8369.120	0.045	*
OWB	<---	NOC	0.285	0.573	0.498	88113.850	0.619	
OWB	<---	AOC	-0.667	0.767	-0.869	605313.432	0.385	
OWB	<---	APC	0.120	0.242	0.494	19592.356	0.621	
OWB	<---	HiSac_COC	0.056	1.496	0.037	868600.106	0.970	
OWB	<---	LoAlt_COC	-0.023	1.435	-0.016	2072815.425	0.987	
OWB	**<---**	**PWB**	0.540	0.208	2.599	113596.862	0.009	**
IRB	<---	APC	0.195	0.445	0.438	4093851.264	0.662	
IRB	<---	AOC	0.396	1.594	0.248	39760.456	0.804	
IRB	<---	HiSac_COC	0.123	1.604	0.077	151330.561	0.939	
IRB	<---	LoAlt_COC	-0.097	1.489	-0.065	581639.825	0.948	
IRB	<---	CPC	0.131	0.270	0.486	1949.231	0.627	
IRB	<---	NPC	-0.011	0.565	-0.019	4698.620	0.985	
IRB	<---	NOC	-0.440	1.563	-0.281	6063.896	0.779	
SWB	<---	APC	-0.119	0.381	-0.313	3803554.297	0.754	
SWB	<---	PWB	0.502	0.300	1.674	8478.318	0.094	+
SWB	<---	OWB	0.320	0.266	1.205	282731.997	0.228	
SWB	<---	NPC	0.150	0.482	0.312	29112.903	0.755	
SWB	<---	NOC	-0.251	1.434	-0.175	184331.197	0.861	
SWB	<---	LoAlt_COC	-0.014	1.383	-0.010	2463136.283	0.992	
SWB	<---	HiSac_COC	0.099	1.394	0.071	6868081.701	0.943	
SWB	<---	AOC	0.174	1.510	0.115	552933.528	0.908	
ERBI	<---	APC	0.009	0.098	0.090	470.769	0.929	
ERBI	<---	NOC	0.185	0.103	1.795	1074.180	0.073	+
ERBI	<---	NPC	-0.089	0.112	-0.793	511.890	0.428	
ERBI	**<---**	**IRB**	0.387	0.132	2.932	1544.221	0.003	**
RHWB	<---	AOC	-0.445	2.013	-0.221	13347625.605	0.825	
RHWB	<---	APC	0.059	0.581	0.101	422363.853	0.920	
RHWB	<---	NOC	0.081	1.383	0.059	2689706.223	0.953	
RHWB	<---	HiSac_COC	0.704	3.720	0.189	111825742.444	0.850	
RHWB	<---	LoAlt_COC	-0.675	3.674	-0.184	100579692.890	0.854	

RHWB	<---	SWB	-0.038	0.515	-0.073	588686.633	0.941	
RHWB	<---	OWB	0.219	0.669	0.327	1313469.086	0.744	
RHWB	<---	PWB	0.382	0.916	0.417	955363.479	0.676	
RHWB	<---	CPC	0.009	0.402	0.022	135177.274	0.982	
ERBO	<---	APC	-0.029	0.102	-0.288	102464.368	0.774	
ERBO	**<---**	**ERBI**	0.621	0.103	6.043	106203.568	0.000	***
ERBO	**<---**	**CPC**	0.191	0.093	2.040	2213.815	0.041	*
ERBO	<---	HiSac_COC	-0.016	0.104	-0.156	6767.864	0.876	
ERBO	<---	NPC	0.119	0.095	1.252	23598.243	0.211	
ERBO	**<---**	**IRB**	0.199	0.101	1.978	14634.974	0.048	*
ERBO	<---	NOC	-0.044	0.119	-0.366	343109.119	0.714	
Squared Multiple Correlations								
PWB			0.555	0.095	5.826	26659.222	0.000	***
IRB			0.125	0.150	0.835	6292.593	0.403	
OWB			0.505	0.134	3.765	45862.561	0.000	***
SWB			0.584	0.135	4.339	89988.481	0.000	***
ERBI			0.177	0.086	2.046	4300.649	0.041	*
RHWB			0.414	0.497	0.834	1276552.204	0.404	
ERBO			0.586	0.101	5.825	9307.666	0.000	***

*** p < 0.001, ** p<0.01, * p<0.05, + p<0.1

Appendix 10.5 Structural Model Locum

			ML Estimate	SE Estimate	CR	df	p	ML Estimate
Total effects								
PWB		**NPC**	-0.129	0.065	-1.977	11491.319	0.048	*
IRB		NPC	-0.004	0.258	-0.016	4936.787	0.988	
OWB		NPC	-0.068	0.049	-1.379	64229.096	0.168	
SWB		NPC	0.003	0.326	0.010	108247.847	0.992	
ERBI		NPC	-0.036	0.109	-0.330	1642.664	0.741	
RHWB		NPC	-0.068	0.255	-0.266	2207550.138	0.790	
ERBO		NPC	0.024	0.114	0.208	1727.278	0.835	
PWB		**CPC**	-0.142	0.058	-2.467	1127.381	0.014	*
IRB		CPC	0.059	0.131	0.450	3052.611	0.653	
OWB		CPC	-0.075	0.047	-1.589	7195.323	0.112	
SWB		CPC	-0.109	0.063	-1.736	17879.562	0.083	+
ERBI		CPC	0.020	0.051	0.392	7500.715	0.695	
RHWB		CPC	-0.065	0.257	-0.251	185725.999	0.801	
ERBO		CPC	0.099	0.069	1.443	97666.171	0.149	
PWB		**APC**	-0.694	0.161	-4.309	2542.120	0.000	***
IRB		APC	0.205	0.473	0.434	2262120.437	0.664	
OWB		APC	-0.199	0.276	-0.720	411041.400	0.471	
SWB		APC	-0.663	0.524	-1.265	527906.898	0.206	
ERBI		APC	0.079	0.215	0.370	46097.240	0.711	
RHWB		APC	-0.212	0.486	-0.437	111686.200	0.662	
ERBO		APC	0.058	0.227	0.255	139939.967	0.799	
IRB		NOC	-0.254	0.905	-0.281	4485.335	0.779	
OWB		NOC	0.213	0.440	0.485	68283.603	0.627	
SWB		NOC	-0.140	1.155	-0.121	183691.172	0.903	
ERBI		NOC	0.004	0.354	0.012	5688.470	0.990	
RHWB		NOC	0.120	0.985	0.122	2345588.921	0.903	
ERBO		NOC	-0.063	0.386	-0.164	5214.154	0.870	
IRB		LoAlt_COC	-0.091	1.463	-0.062	696600.714	0.951	
OWB		LoAlt_COC	-0.028	1.790	-0.016	2346999.974	0.988	
SWB		LoAlt_COC	-0.030	1.447	-0.021	273253.849	0.984	
ERBI		LoAlt_COC	-0.031	0.652	-0.048	2148855.821	0.962	
RHWB		LoAlt_COC	-0.889	2.567	-0.346	7331099.451	0.729	
ERBO		LoAlt_COC	-0.036	0.695	-0.051	1586338.936	0.959	
IRB		HiSac_COC	0.107	1.495	0.072	178866.830	0.943	
OWB		HiSac_COC	0.063	1.743	0.036	1054541.580	0.971	
SWB		HiSac_COC	0.154	1.351	0.114	546763.521	0.909	
ERBI		HiSac_COC	0.038	0.674	0.056	396625.528	0.955	
RHWB		HiSac_COC	0.859	2.500	0.344	9049975.139	0.731	
ERBO		HiSac_COC	0.030	0.720	0.042	1010514.105	0.967	
PWB		AOC	-0.039	0.060	-0.646	619.956	0.519	
IRB		AOC	0.187	0.786	0.239	34069.214	0.811	
OWB		AOC	-0.432	0.504	-0.857	191673.496	0.392	
SWB		AOC	-0.058	0.973	-0.059	357970.498	0.953	
ERBI		AOC	0.066	0.315	0.209	35856.302	0.835	
RHWB		AOC	-0.410	0.874	-0.469	2524518.972	0.639	
ERBO		AOC	0.073	0.343	0.213	45647.320	0.831	
OWB		**PWB**	0.525	0.218	2.410	731613.645	0.016	*
SWB		**PWB**	0.767	0.275	2.786	7858.622	0.005	**
RHWB		PWB	0.496	0.412	1.205	267712.121	0.228	
ERBI		**IRB**	0.345	0.135	2.566	8290.638	0.010	*
ERBO		**IRB**	0.390	0.146	2.679	91452.601	0.007	**
SWB		OWB	0.374	0.309	1.210	134992.539	0.226	
RHWB		OWB	0.223	0.536	0.415	406137.339	0.678	
RHWB		SWB	-0.035	0.481	-0.072	642130.015	0.942	

ERBO	**ERBI**	0.618	0.121	5.095	26553.891	0.000	***
Standardized Total Effects							
PWB	**NPC**	**-0.215**	**0.107**	**-2.005**	**8369.120**	**0.045**	*
IRB	NPC	-0.011	0.565	-0.019	4698.620	0.985	
OWB	NPC	-0.116	0.081	-1.426	65794.238	0.154	
SWB	NPC	0.005	0.479	0.011	104431.109	0.991	
ERBI	NPC	-0.091	0.267	-0.341	1360.892	0.733	
RHWB	NPC	-0.108	0.408	-0.265	2273925.448	0.791	
ERBO	NPC	0.060	0.281	0.215	1570.582	0.830	
PWB	**CPC**	**-0.233**	**0.090**	**-2.575**	**1803.949**	**0.010**	*
IRB	CPC	0.131	0.270	0.486	1949.231	0.627	
OWB	CPC	-0.126	0.072	-1.745	5330.636	0.081	+
SWB	CPC	-0.157	0.086	-1.832	33514.429	0.067	+
ERBI	CPC	0.050	0.116	0.430	4781.955	0.667	
RHWB	CPC	-0.102	0.383	-0.265	135417.934	0.791	
ERBO	CPC	0.247	0.151	1.642	138113.720	0.101	
PWB	**APC**	**-0.487**	**0.104**	**-4.686**	**1635.466**	**0.000**	***
IRB	APC	0.195	0.445	0.438	4093851.264	0.662	
OWB	APC	-0.144	0.199	-0.724	696494.522	0.469	
SWB	APC	-0.409	0.326	-1.254	840578.155	0.210	
ERBI	APC	0.084	0.223	0.378	41123.832	0.705	
RHWB	APC	-0.143	0.324	-0.441	92940.309	0.659	
ERBO	APC	0.062	0.240	0.258	135107.082	0.796	
IRB	NOC	-0.440	1.563	-0.281	6063.896	0.779	
OWB	NOC	0.285	0.573	0.498	88113.850	0.619	
SWB	NOC	-0.160	1.321	-0.121	184462.526	0.903	
ERBI	NOC	0.010	0.670	0.016	5201.342	0.988	
RHWB	NOC	0.150	1.245	0.120	2325141.161	0.904	
ERBO	NOC	-0.125	0.743	-0.168	4987.795	0.866	
IRB	LoAlt_COC	-0.097	1.489	-0.065	581639.825	0.948	
OWB	LoAlt_COC	-0.023	1.435	-0.016	2072815.425	0.987	
SWB	LoAlt_COC	-0.021	1.003	-0.021	243825.485	0.983	
ERBI	LoAlt_COC	-0.038	0.716	-0.053	1507603.243	0.958	
RHWB	LoAlt_COC	-0.678	1.913	-0.354	5779554.386	0.723	
ERBO	LoAlt_COC	-0.043	0.744	-0.058	1053297.952	0.954	
IRB	HiSac_COC	0.123	1.604	0.077	151330.561	0.939	
OWB	HiSac_COC	0.056	1.496	0.037	868600.106	0.970	
SWB	HiSac_COC	0.117	0.994	0.118	451042.367	0.906	
ERBI	HiSac_COC	0.049	0.773	0.064	240172.287	0.949	
RHWB	HiSac_COC	0.711	2.000	0.356	7920754.849	0.722	
ERBO	HiSac_COC	0.039	0.814	0.048	563001.132	0.962	
PWB	AOC	-0.061	0.096	-0.637	620.268	0.524	
IRB	AOC	0.396	1.594	0.248	39760.456	0.804	
OWB	AOC	-0.699	0.776	-0.900	271409.392	0.368	
SWB	AOC	-0.081	1.287	-0.063	289328.940	0.950	
ERBI	AOC	0.156	0.702	0.223	30714.506	0.824	
RHWB	AOC	-0.618	1.301	-0.475	2294473.042	0.635	
ERBO	AOC	0.176	0.769	0.229	35095.106	0.819	
OWB	**PWB**	**0.540**	**0.208**	**2.599**	**113596.862**	**0.009**	**
SWB	**PWB**	**0.675**	**0.202**	**3.334**	**5888.537**	**0.001**	***
RHWB	PWB	0.475	0.336	1.413	238815.383	0.158	
ERBI	**IRB**	**0.387**	**0.132**	**2.932**	**1544.221**	**0.003**	**
ERBO	**IRB**	**0.439**	**0.142**	**3.091**	**4597.398**	**0.002**	**
SWB	OWB	0.320	0.266	1.205	282731.997	0.228	
RHWB	OWB	0.206	0.491	0.420	509780.128	0.675	
RHWB	SWB	-0.038	0.515	-0.073	588686.633	0.941	
ERBO	**ERBI**	**0.621**	**0.103**	**6.043**	**106203.568**	**0.000**	***

*** p < 0.001, ** p<0.01, * p<0.05, + p<0.1

Appendix 10.6 Structural Model Non-Locum

			ML Estimate	SE Estimate	CR	df	p	ML Estimate
Regression Weights								
PWB	**<---**	**APC**	-0.733	0.114	-6.419	202002.170	0.000	***
PWB	**<---**	**CPC**	-0.067	0.039	-1.705	3578.636	0.088	+
PWB	<---	AOC	-0.040	0.030	-1.335	15390.789	0.182	
PWB	**<---**	**NPC**	0.013	0.041	0.329	98791.157	0.742	
OWB	<---	NOC	0.006	0.102	0.061	4892.378	0.952	
OWB	**<---**	**AOC**	-0.244	0.082	-2.969	17310.207	0.003	**
OWB	<---	APC	0.114	0.093	1.221	12378.054	0.222	
OWB	<---	HiSac_COC	0.116	0.112	1.034	1266.321	0.301	
OWB	<---	LoAlt_COC	-0.081	0.115	-0.710	2150.056	0.478	
OWB	**<---**	**PWB**	0.518	0.075	6.894	48648.311	0.000	***
IRB	<---	APC	0.164	0.227	0.720	181590.575	0.471	
IRB	<---	AOC	0.249	0.687	0.362	172743.773	0.718	
IRB	<---	HiSac_COC	0.137	0.719	0.191	95891.621	0.849	
IRB	<---	LoAlt_COC	-0.062	0.345	-0.181	5731.611	0.857	
IRB	<---	CPC	0.029	0.156	0.184	222988.471	0.854	
IRB	<---	NPC	0.038	0.237	0.161	167183.992	0.872	
IRB	<---	NOC	-0.291	1.000	-0.291	127743.480	0.771	
SWB	<---	APC	0.220	0.184	1.196	582485.838	0.232	
SWB	**<---**	**PWB**	0.784	0.096	8.157	1399.757	0.000	***
SWB	**<---**	**OWB**	0.213	0.091	2.342	3305.883	0.019	*
SWB	<---	NPC	0.034	0.164	0.207	130820.278	0.836	
SWB	<---	NOC	0.017	0.596	0.029	94094.406	0.977	
SWB	<---	LoAlt_COC	-0.088	0.159	-0.552	1079.942	0.581	
SWB	<---	HiSac_COC	0.009	0.236	0.040	6040.977	0.968	
SWB	<---	AOC	-0.105	0.452	-0.232	164538.488	0.817	
ERBI	**<---**	**APC**	0.168	0.062	2.729	2302.694	0.006	**
ERBI	<---	NOC	0.008	0.027	0.285	828006.669	0.775	
ERBI	<---	NPC	-0.039	0.029	-1.336	24905.516	0.182	
ERBI	**<---**	**IRB**	0.345	0.058	5.971	6385.623	0.000	***
RHWB	<---	AOC	-0.195	0.177	-1.101	22044.809	0.271	
RHWB	<---	APC	0.161	0.164	0.983	12319.096	0.326	
RHWB	<---	NOC	0.195	0.296	0.661	36515.690	0.509	
RHWB	<---	HiSac_COC	0.096	0.521	0.184	187001.412	0.854	
RHWB	<---	LoAlt_COC	-0.190	0.344	-0.553	1370598.719	0.580	
RHWB	<---	SWB	0.054	0.137	0.395	7187.856	0.693	
RHWB	<---	OWB	0.149	0.102	1.465	33961.037	0.143	
RHWB	**<---**	**PWB**	0.489	0.176	2.775	9429.872	0.006	**
RHWB	<---	CPC	0.041	0.102	0.396	425168.878	0.692	
ERBO	<---	APC	0.042	0.060	0.699	6970.206	0.485	
ERBO	**<---**	**ERBI**	0.467	0.065	7.203	44460.009	0.000	***
ERBO	**<---**	**CPC**	0.073	0.028	2.583	2260.784	0.010	**
ERBO	<---	HiSac_COC	-0.051	0.066	-0.778	1553.330	0.436	
ERBO	<---	NPC	-0.047	0.023	-2.037	154005.059	0.042	*
ERBO	**<---**	**IRB**	0.224	0.039	5.703	3976.124	0.000	***
ERBO	<---	NOC	0.006	0.025	0.236	5019.689	0.813	
Standardized Regression Weights								
PWB	**<---**	**APC**	-0.557	0.075	-7.444	57669.299	0.000	***
PWB	<---	CPC	-0.107	0.061	-1.751	3259.118	0.080	+
PWB	<---	AOC	-0.082	0.061	-1.343	13086.850	0.179	
PWB	**<---**	**NPC**	0.023	0.069	0.335	67945.979	0.738	
OWB	<---	NOC	0.011	0.175	0.062	4899.949	0.951	
OWB	**<---**	**AOC**	-0.495	0.163	-3.040	15330.332	0.002	**

OWB	<---	APC	0.087	0.070	1.234	10964.334	0.217	
OWB	<---	HiSac_COC	0.102	0.097	1.050	1119.100	0.294	
OWB	<---	LoAlt_COC	-0.057	0.081	-0.713	1911.784	0.476	
OWB	**<---**	**PWB**	0.521	0.067	7.721	116676.609	0.000	***
IRB	<---	APC	0.126	0.173	0.732	160909.852	0.464	
IRB	<---	AOC	0.511	1.394	0.366	155497.453	0.714	
IRB	<---	HiSac_COC	0.123	0.615	0.200	80300.701	0.841	
IRB	<---	LoAlt_COC	-0.044	0.240	-0.185	4920.736	0.853	
IRB	<---	CPC	0.047	0.250	0.187	176365.256	0.852	
IRB	<---	NPC	0.066	0.408	0.163	164429.599	0.871	
IRB	<---	NOC	-0.503	1.729	-0.291	120827.321	0.771	
SWB	<---	APC	0.152	0.126	1.205	1039197.271	0.228	
SWB	**<---**	**PWB**	0.714	0.089	7.994	1034.751	0.000	***
SWB	**<---**	**OWB**	0.193	0.080	2.409	3058.361	0.016	*
SWB	<---	NPC	0.053	0.244	0.218	109386.719	0.827	
SWB	<---	NOC	0.027	0.897	0.030	83677.297	0.976	
SWB	<---	LoAlt_COC	-0.056	0.101	-0.554	1171.054	0.580	
SWB	<---	HiSac_COC	0.007	0.183	0.041	5169.609	0.968	
SWB	<---	AOC	-0.193	0.786	-0.245	134337.956	0.806	
ERBI	**<---**	**APC**	0.168	0.058	2.910	1608.927	0.004	**
ERBI	<---	NOC	0.017	0.059	0.294	1002832.412	0.769	
ERBI	<---	NPC	-0.088	0.065	-1.348	31287.506	0.178	
ERBI	**<---**	**IRB**	0.445	0.064	6.914	4125.558	0.000	***
RHWB	<---	AOC	-0.375	0.339	-1.105	20892.076	0.269	
RHWB	<---	APC	0.117	0.120	0.971	16225.110	0.332	
RHWB	<---	NOC	0.317	0.472	0.671	32380.557	0.502	
RHWB	<---	HiSac_COC	0.080	0.391	0.206	120596.905	0.837	
RHWB	<---	LoAlt_COC	-0.127	0.232	-0.549	1979796.025	0.583	
RHWB	<---	SWB	0.057	0.145	0.393	7106.826	0.695	
RHWB	<---	OWB	0.142	0.096	1.475	27329.217	0.140	
RHWB	**<---**	**PWB**	0.467	0.167	2.802	9127.076	0.005	**
RHWB	<---	CPC	0.062	0.152	0.410	331796.726	0.682	
ERBO	<---	APC	0.046	0.066	0.707	7322.567	0.479	
ERBO	**<---**	**ERBI**	0.525	0.051	10.299	4154.023	0.000	***
ERBO	**<---**	**CPC**	0.174	0.063	2.743	1584.528	0.006	**
ERBO	<---	HiSac_COC	-0.066	0.084	-0.781	1431.381	0.435	
ERBO	**<---**	**NPC**	-0.120	0.057	-2.087	108100.515	0.037	*
ERBO	**<---**	**IRB**	0.324	0.045	7.224	4208.953	0.000	***
ERBO	<---	NOC	0.015	0.062	0.242	4985.452	0.809	
Squared Multiple Correlations								
PWB			0.352	0.070	5.052	39432.657	0.000	***
IRB			0.077	0.102	0.750	19954.855	0.453	
OWB			0.546	0.048	11.458	5789.873	0.000	***
SWB			0.669	0.057	11.649	2164.334	0.000	***
ERBI			0.244	0.061	4.024	67090.472	0.000	***
RHWB			0.351	0.085	4.125	85019.075	0.000	***
ERBO			0.596	0.067	8.889	6268.448	0.000	***

*** p < 0.001, ** p<0.01, * p<0.05, + p<0.1

Appendix 10.7 Structural Model Non-Locum

		ML Estimate	SE Estimate	CR	df	p	ML Estimate
Total effects							
PWB	NPC	0.013	0.041	0.329	98791.157	0.742	
IRB	NPC	0.038	0.237	0.161	167183.992	0.872	
OWB	NPC	0.007	0.021	0.339	117378.913	0.735	
SWB	NPC	0.047	0.167	0.279	162882.599	0.780	
ERBI	NPC	-0.026	0.084	-0.307	246052.277	0.759	
RHWB	NPC	0.010	0.035	0.295	88223.777	0.768	
ERBO	NPC	-0.051	0.090	-0.563	116413.315	0.573	
PWB	CPC	-0.067	0.039	-1.705	3578.636	0.088	+
IRB	CPC	0.029	0.156	0.184	222988.471	0.854	
OWB	CPC	-0.035	0.021	-1.676	3467.472	0.094	+
SWB	CPC	-0.060	0.036	-1.652	4326.364	0.099	+
ERBI	CPC	0.010	0.053	0.187	205453.549	0.852	
RHWB	CPC	0.000	0.104	-0.004	317039.887	0.997	
ERBO	CPC	0.085	0.067	1.258	26517.625	0.208	
PWB	**APC**	-0.733	0.114	-6.419	202002.170	0.000	***
IRB	APC	0.164	0.227	0.720	181590.575	0.471	
OWB	**APC**	-0.266	0.086	-3.085	28964.263	0.002	**
SWB	**APC**	-0.411	0.182	-2.266	707323.072	0.023	*
ERBI	**APC**	0.224	0.098	2.301	5964.434	0.021	*
RHWB	APC	-0.259	0.134	-1.931	29020.542	0.053	+
ERBO	APC	0.183	0.108	1.689	4116.277	0.091	+
IRB	NOC	-0.291	1.000	-0.291	127743.480	0.771	
OWB	NOC	0.006	0.102	0.061	4892.378	0.952	
SWB	NOC	0.019	0.598	0.031	98249.745	0.975	
ERBI	NOC	-0.093	0.334	-0.279	103978.257	0.781	
RHWB	NOC	0.198	0.305	0.648	36921.478	0.517	
ERBO	NOC	-0.103	0.369	-0.278	110893.761	0.781	
IRB	LoAlt_COC	-0.062	0.345	-0.181	5731.611	0.857	
OWB	LoAlt_COC	-0.081	0.115	-0.710	2150.056	0.478	
SWB	LoAlt_COC	-0.105	0.161	-0.654	1598.400	0.513	
ERBI	LoAlt_COC	-0.022	0.119	-0.183	5736.179	0.855	
RHWB	LoAlt_COC	-0.208	0.337	-0.617	1433054.432	0.537	
ERBO	LoAlt_COC	-0.024	0.134	-0.177	6605.173	0.859	
IRB	HiSac_COC	0.137	0.719	0.191	95891.621	0.849	
OWB	HiSac_COC	0.116	0.112	1.034	1266.321	0.301	
SWB	HiSac_COC	0.034	0.239	0.141	8668.164	0.888	
ERBI	HiSac_COC	0.047	0.244	0.195	83115.563	0.846	
RHWB	HiSac_COC	0.115	0.516	0.222	202590.888	0.824	
ERBO	HiSac_COC	0.002	0.284	0.007	381589.559	0.994	
PWB	AOC	-0.040	0.030	-1.335	15390.789	0.182	
IRB	AOC	0.249	0.687	0.362	172743.773	0.718	
OWB	**AOC**	-0.265	0.083	-3.177	36594.576	0.001	**
SWB	AOC	-0.194	0.451	-0.429	123178.456	0.668	
ERBI	AOC	0.086	0.228	0.378	122902.629	0.706	
RHWB	AOC	-0.265	0.181	-1.467	15556.841	0.142	
ERBO	AOC	0.096	0.252	0.380	139065.484	0.704	
OWB	**PWB**	0.518	0.075	6.894	48648.311	0.000	***
SWB	**PWB**	0.895	0.078	11.448	3884.605	0.000	***
RHWB	**PWB**	0.615	0.092	6.700	89811.210	0.000	***
ERBI	**IRB**	0.345	0.058	5.971	6385.623	0.000	***
ERBO	**IRB**	0.385	0.059	6.569	136422.997	0.000	***
SWB	**OWB**	0.213	0.091	2.342	3305.883	0.019	*
RHWB	OWB	0.161	0.100	1.606	12637.066	0.108	
RHWB	SWB	0.054	0.137	0.395	7187.856	0.693	

ERBO	**ERBI**	0.467	0.065	7.203	44460.009	0.000	***

Standardized Total Effects

PWB	NPC	0.023	0.069	0.335	67945.979	0.738	
IRB	NPC	0.066	0.408	0.163	164429.599	0.871	
OWB	NPC	0.012	0.037	0.334	95389.466	0.738	
SWB	NPC	0.072	0.249	0.290	149165.810	0.772	
ERBI	NPC	-0.058	0.189	-0.307	261154.629	0.759	
RHWB	NPC	0.016	0.056	0.291	105788.560	0.771	
ERBO	NPC	-0.128	0.234	-0.549	130089.195	0.583	
PWB	CPC	-0.107	0.061	-1.751	3259.118	0.080	+
IRB	CPC	0.047	0.250	0.187	176365.256	0.852	
OWB	CPC	-0.056	0.032	-1.732	2801.333	0.083	+
SWB	CPC	-0.087	0.051	-1.723	4490.052	0.085	+
ERBI	CPC	0.021	0.112	0.187	165741.213	0.851	
RHWB	CPC	-0.001	0.155	-0.006	269675.840	0.995	
ERBO	CPC	0.200	0.156	1.284	19188.355	0.199	
PWB	**APC**	-0.557	0.075	-7.444	57669.299	0.000	***
IRB	APC	0.126	0.173	0.732	160909.852	0.464	
OWB	**APC**	-0.203	0.064	-3.156	36426.851	0.002	**
SWB	**APC**	-0.285	0.123	-2.323	344454.451	0.020	*
ERBI	**APC**	0.224	0.092	2.434	4941.186	0.015	*
RHWB	APC	-0.188	0.097	-1.940	17929.830	0.052	+
ERBO	APC	0.205	0.114	1.797	4848.600	0.072	+
IRB	NOC	-0.503	1.729	-0.291	120827.321	0.771	
OWB	NOC	0.011	0.175	0.062	4899.949	0.951	
SWB	NOC	0.029	0.900	0.032	86335.769	0.974	
ERBI	NOC	-0.206	0.758	-0.272	119427.977	0.786	
RHWB	NOC	0.320	0.488	0.656	33525.419	0.512	
ERBO	NOC	-0.256	0.957	-0.268	126429.988	0.789	
IRB	LoAlt_COC	-0.044	0.240	-0.185	4920.736	0.853	
OWB	LoAlt_COC	-0.057	0.081	-0.713	1911.784	0.476	
SWB	LoAlt_COC	-0.067	0.103	-0.653	1768.077	0.514	
ERBI	LoAlt_COC	-0.020	0.108	-0.185	5142.184	0.853	
RHWB	LoAlt_COC	-0.139	0.227	-0.611	2130808.209	0.541	
ERBO	LoAlt_COC	-0.025	0.134	-0.186	5378.855	0.852	
IRB	HiSac_COC	0.123	0.615	0.200	80300.701	0.841	
OWB	HiSac_COC	0.102	0.097	1.050	1119.100	0.294	
SWB	HiSac_COC	0.027	0.185	0.146	7881.035	0.884	
ERBI	HiSac_COC	0.054	0.276	0.197	77046.901	0.844	
RHWB	HiSac_COC	0.096	0.387	0.248	119847.727	0.804	
ERBO	HiSac_COC	0.002	0.357	0.007	315103.596	0.995	
PWB	AOC	-0.082	0.061	-1.343	13086.850	0.179	
IRB	AOC	0.511	1.394	0.366	155497.453	0.714	
OWB	**AOC**	-0.537	0.165	-3.263	29562.616	0.001	**
SWB	AOC	-0.355	0.784	-0.453	102992.497	0.651	
ERBI	AOC	0.227	0.604	0.375	148073.685	0.708	
RHWB	AOC	-0.510	0.346	-1.475	15299.538	0.140	
ERBO	AOC	0.285	0.768	0.371	158205.054	0.711	
OWB	**PWB**	0.521	0.067	7.721	116676.609	0.000	***
SWB	**PWB**	0.815	0.068	11.904	1638.502	0.000	***
RHWB	**PWB**	0.587	0.082	7.158	200954.958	0.000	***
ERBI	**IRB**	0.445	0.064	6.914	4125.558	0.000	***
ERBO	**IRB**	0.558	0.054	10.256	8832.419	0.000	***
SWB	**OWB**	0.193	0.080	2.409	3058.361	0.016	*
RHWB	OWB	0.153	0.095	1.607	10768.401	0.108	
RHWB	SWB	0.057	0.145	0.393	7106.826	0.695	
ERBO	**ERBI**	0.525	0.051	10.299	4154.023	0.000	***

*** p < 0.001, ** p<0.01, * p<0.05, + p<0.1

Appendix 10.8 Structural Model Independent/small-chain

			ML Estimate	SE Estimate	CR	df	p	ML Estimate
Regression Weights								
PWB	**<---**	**APC**	-0.719	0.168	-4.284	1054586.678	0.000	***
PWB	<---	CPC	-0.081	0.067	-1.205	4178.078	0.228	
PWB	<---	AOC	-0.015	0.046	-0.327	2952.392	0.744	
PWB	<---	NPC	-0.045	0.069	-0.657	24568.711	0.511	
OWB	<---	NOC	-0.132	0.228	-0.576	14963.114	0.564	
OWB	<---	AOC	-0.132	0.134	-0.987	64465.368	0.324	
OWB	<---	APC	0.145	0.226	0.645	2550.157	0.519	
OWB	<---	HiSac_COC	0.197	0.585	0.336	581962.916	0.737	
OWB	<---	LoAlt_COC	-0.166	0.595	-0.279	5540190.639	0.780	
OWB	**<---**	**PWB**	0.583	0.119	4.905	20463.994	0.000	***
IRB	<---	APC	0.348	0.441	0.788	5831.342	0.431	
IRB	<---	AOC	0.103	0.344	0.300	20619.286	0.764	
IRB	<---	HiSac_COC	0.094	1.549	0.061	4724610.677	0.952	
IRB	<---	LoAlt_COC	-0.165	1.342	-0.123	315299.248	0.902	
IRB	<---	CPC	0.100	0.200	0.498	88898.308	0.618	
IRB	<---	NPC	-0.061	0.177	-0.343	6669.770	0.731	
IRB	<---	NOC	-0.145	0.797	-0.182	97620.920	0.855	
SWB	<---	APC	-0.058	0.299	-0.193	22510.800	0.847	
SWB	**<---**	**PWB**	0.564	0.199	2.826	6119.500	0.005	**
SWB	<---	OWB	0.319	0.239	1.336	1120.204	0.182	
SWB	<---	NPC	0.064	0.117	0.546	7069.981	0.585	
SWB	<---	NOC	0.039	0.469	0.083	23698.414	0.934	
SWB	<---	LoAlt_COC	-0.206	0.892	-0.232	106364.647	0.817	
SWB	<---	HiSac_COC	-0.031	0.901	-0.035	160263.261	0.972	
SWB	<---	AOC	-0.089	0.275	-0.325	15398.708	0.745	
ERBI	<---	APC	0.098	0.092	1.062	1551.915	0.288	
ERBI	**<---**	**NOC**	0.078	0.038	2.033	21811.929	0.042	*
ERBI	<---	NPC	-0.040	0.044	-0.910	1134.973	0.363	
ERBI	**<---**	**IRB**	0.486	0.103	4.698	908171.628	0.000	***
RHWB	<---	AOC	-0.158	0.433	-0.364	861131.755	0.716	
RHWB	<---	APC	0.084	0.599	0.140	3492211.453	0.888	
RHWB	<---	NOC	0.100	0.668	0.150	2566479.876	0.881	
RHWB	<---	HiSac_COC	0.147	2.048	0.072	8863174.164	0.943	
RHWB	<---	LoAlt_COC	-0.373	2.112	-0.177	77709182.319	0.860	
RHWB	<---	SWB	-0.107	0.316	-0.338	9363.382	0.735	
RHWB	<---	OWB	0.290	0.349	0.833	28943.510	0.405	
RHWB	<---	PWB	0.463	0.402	1.153	15104.494	0.249	
RHWB	<---	CPC	0.158	0.164	0.959	1055854.780	0.338	
ERBO	<---	APC	0.139	0.117	1.180	2048.160	0.238	
ERBO	**<---**	**ERBI**	0.510	0.114	4.490	50928.289	0.000	***
ERBO	<---	CPC	0.060	0.049	1.224	129561.431	0.221	
ERBO	<---	HiSac_COC	0.040	0.135	0.297	9282.419	0.767	
ERBO	<---	NPC	-0.007	0.037	-0.197	7292.638	0.844	
ERBO	**<---**	**IRB**	0.249	0.090	2.775	13039.816	0.006	**
ERBO	<---	NOC	-0.028	0.067	-0.423	4264.232	0.673	
Standardized Regression Weights								
PWB	**<---**	**APC**	-0.503	0.106	-4.755	154981.767	0.000	***
PWB	<---	CPC	-0.123	0.100	-1.228	5968.691	0.219	
PWB	<---	AOC	-0.030	0.094	-0.322	2971.839	0.747	
PWB	<---	NPC	-0.079	0.120	-0.654	28089.326	0.513	
OWB	<---	NOC	-0.241	0.406	-0.593	8509.157	0.553	
OWB	<---	AOC	-0.282	0.279	-1.011	155295.086	0.312	

OWB	<---	APC	0.107	0.163	0.660	1871.944	0.509	
OWB	<---	HiSac_COC	0.189	0.532	0.355	494114.684	0.723	
OWB	<---	LoAlt_COC	-0.103	0.394	-0.261	11752325.177	0.794	
OWB	**<---**	**PWB**	0.614	0.107	5.742	5748.722	0.000	***
IRB	<---	APC	0.275	0.359	0.765	5632.934	0.444	
IRB	<---	AOC	0.236	0.779	0.302	19863.196	0.762	
IRB	<---	HiSac_COC	0.096	1.515	0.064	4438380.162	0.949	
IRB	<---	LoAlt_COC	-0.107	0.901	-0.119	520054.763	0.905	
IRB	<---	CPC	0.171	0.337	0.507	69605.484	0.612	
IRB	<---	NPC	-0.119	0.341	-0.348	6443.954	0.728	
IRB	<---	NOC	-0.284	1.548	-0.184	84390.210	0.854	
SWB	<---	APC	-0.038	0.193	-0.197	18476.605	0.844	
SWB	**<---**	**PWB**	0.529	0.175	3.015	2053.108	0.003	**
SWB	<---	OWB	0.284	0.197	1.437	1740.357	0.151	
SWB	<---	NPC	0.104	0.191	0.543	6280.216	0.587	
SWB	<---	NOC	0.063	0.756	0.083	22436.186	0.934	
SWB	<---	LoAlt_COC	-0.114	0.549	-0.208	185946.140	0.835	
SWB	<---	HiSac_COC	-0.027	0.748	-0.036	143990.059	0.971	
SWB	<---	AOC	-0.169	0.519	-0.326	18050.601	0.745	
ERBI	<---	APC	0.087	0.079	1.108	1357.843	0.268	
ERBI	**<---**	**NOC**	0.173	0.087	1.982	13698.689	0.047	*
ERBI	<---	NPC	-0.089	0.098	-0.906	1300.853	0.365	
ERBI	**<---**	**IRB**	0.551	0.094	5.860	62031.287	0.000	***
RHWB	<---	AOC	-0.323	0.890	-0.363	847286.905	0.717	
RHWB	<---	APC	0.059	0.423	0.140	4055597.265	0.889	
RHWB	<---	NOC	0.174	1.140	0.153	2263198.698	0.879	
RHWB	<---	HiSac_COC	0.136	1.737	0.078	5917552.337	0.938	
RHWB	<---	LoAlt_COC	-0.223	1.305	-0.171	12737915.674	0.865	
RHWB	<---	SWB	-0.115	0.343	-0.335	9763.108	0.738	
RHWB	<---	OWB	0.278	0.330	0.843	51859.763	0.399	
RHWB	<---	PWB	0.468	0.395	1.185	13572.025	0.236	
RHWB	<---	CPC	0.241	0.254	0.951	974955.372	0.342	
ERBO	<---	APC	0.129	0.109	1.188	1918.824	0.235	
ERBO	**<---**	**ERBI**	0.529	0.086	6.176	92311.427	0.000	***
ERBO	<---	CPC	0.121	0.100	1.214	457196.761	0.225	
ERBO	<---	HiSac_COC	0.049	0.158	0.308	8398.189	0.758	
ERBO	<---	NPC	-0.016	0.086	-0.188	9667.990	0.851	
ERBO	**<---**	**IRB**	0.294	0.091	3.245	7497.677	0.001	**
ERBO	<---	NOC	-0.065	0.153	-0.425	3741.633	0.671	
Squared Multiple Correlations								
PWB			0.337	0.087	3.877	14779.869	0.000	***
IRB			0.123	0.142	0.862	7182.382	0.388	
OWB			0.599	0.089	6.706	1052.392	0.000	***
SWB			0.617	0.092	6.721	3834.161	0.000	***
ERBI			0.361	0.094	3.822	347198.415	0.000	***
RHWB			0.417	0.203	2.050	572650.648	0.040	*
ERBO			0.632	0.086	7.354	8966.148	0.000	***

*** p < 0.001, ** p<0.01, * p<0.05, + p<0.1

Appendix 10.9 Structural Model Independent/small-chain

			ML Estimate	SE Estimate	CR	df	p	ML Estimate
Total effects								
PWB		NPC	-0.045	0.069	-0.657	24568.711	0.511	
IRB		NPC	-0.061	0.177	-0.343	6669.770	0.731	
OWB		NPC	-0.026	0.036	-0.736	13045.366	0.462	
SWB		NPC	0.029	0.124	0.236	9281.296	0.814	
ERBI		NPC	-0.070	0.093	-0.751	936.520	0.453	
RHWB		NPC	-0.032	0.063	-0.501	27213.380	0.616	
ERBO		NPC	-0.058	0.091	-0.636	3821.020	0.525	
PWB		CPC	-0.081	0.067	-1.205	4178.078	0.228	
IRB		CPC	0.100	0.200	0.498	88898.308	0.618	
OWB		CPC	-0.047	0.035	-1.348	4152.454	0.178	
SWB		CPC	-0.061	0.047	-1.277	3067.221	0.202	
ERBI		CPC	0.048	0.085	0.571	45092.233	0.568	
RHWB		CPC	0.113	0.163	0.691	2087952.829	0.489	
ERBO		CPC	0.110	0.097	1.127	29836.981	0.260	
PWB		**APC**	-0.719	0.168	-4.284	1054586.678	0.000	***
IRB		APC	0.348	0.441	0.788	5831.342	0.431	
OWB		APC	-0.274	0.224	-1.220	3502.945	0.223	
SWB		**APC**	-0.549	0.240	-2.288	24064.863	0.022	*
ERBI		APC	0.266	0.205	1.301	968.369	0.193	
RHWB		APC	-0.270	0.516	-0.522	21358143.750	0.601	
ERBO		APC	0.361	0.218	1.657	914.205	0.098	+
IRB		NOC	-0.145	0.797	-0.182	97620.920	0.855	
OWB		NOC	-0.132	0.228	-0.576	14963.114	0.564	
SWB		NOC	-0.004	0.460	-0.008	29347.535	0.993	
ERBI		**NOC**	0.078	0.038	2.033	21811.929	0.042	*
RHWB		NOC	0.061	0.590	0.103	4246903.473	0.918	
ERBO		NOC	-0.061	0.344	-0.176	44757.322	0.860	
IRB		LoAlt_COC	-0.165	1.342	-0.123	315299.248	0.902	
OWB		LoAlt_COC	-0.166	0.595	-0.279	5540190.639	0.780	
SWB		LoAlt_COC	-0.259	0.683	-0.379	31103.181	0.705	
ERBI		LoAlt_COC	-0.080	0.563	-0.142	179488.796	0.887	
RHWB		LoAlt_COC	-0.393	1.443	-0.272	6597077.689	0.785	
ERBO		LoAlt_COC	-0.082	0.572	-0.143	166930.595	0.886	
IRB		HiSac_COC	0.094	1.549	0.061	4724610.677	0.952	
OWB		HiSac_COC	0.197	0.585	0.336	581962.916	0.737	
SWB		HiSac_COC	0.031	0.713	0.044	30956.347	0.965	
ERBI		HiSac_COC	0.046	0.639	0.072	2517237.108	0.943	
RHWB		HiSac_COC	0.201	1.534	0.131	2916081.893	0.896	
ERBO		HiSac_COC	0.087	0.660	0.132	436788.413	0.895	
PWB		AOC	-0.015	0.046	-0.327	2952.392	0.744	
IRB		AOC	0.103	0.344	0.300	20619.286	0.764	
OWB		AOC	-0.141	0.137	-1.029	45687.968	0.304	
SWB		AOC	-0.142	0.240	-0.593	4431.567	0.553	
ERBI		AOC	0.050	0.155	0.322	15158.615	0.747	
RHWB		AOC	-0.190	0.298	-0.638	325007.117	0.523	
ERBO		AOC	0.051	0.154	0.332	15307.340	0.740	
OWB		**PWB**	0.583	0.119	4.905	20463.994	0.000	***
SWB		**PWB**	0.749	0.152	4.929	8623.549	0.000	***
RHWB		**PWB**	0.552	0.191	2.885	20298.484	0.004	**
ERBI		**IRB**	0.486	0.103	4.698	908171.628	0.000	***
ERBO		**IRB**	0.497	0.113	4.398	20399.763	0.000	***
SWB		OWB	0.319	0.239	1.336	1120.204	0.182	
RHWB		OWB	0.256	0.251	1.020	37746.369	0.308	
RHWB		SWB	-0.107	0.316	-0.338	9363.382	0.735	

ERBO		ERBI	0.510	0.114	4.490	50928.289	0.000	***
Standardized Total Effects								
PWB		NPC	-0.079	0.120	-0.654	28089.326	0.513	
IRB		NPC	-0.119	0.341	-0.348	6443.954	0.728	
OWB		NPC	-0.048	0.066	-0.733	17271.568	0.464	
SWB		NPC	0.048	0.202	0.239	9293.084	0.811	
ERBI		NPC	-0.154	0.204	-0.757	970.150	0.449	
RHWB		NPC	-0.055	0.112	-0.494	32001.031	0.621	
ERBO		NPC	-0.133	0.208	-0.640	4519.093	0.522	
PWB		CPC	-0.123	0.100	-1.228	5968.691	0.219	
IRB		CPC	0.171	0.337	0.507	69605.484	0.612	
OWB		CPC	-0.075	0.056	-1.348	3783.797	0.178	
SWB		CPC	-0.086	0.065	-1.325	3883.536	0.185	
ERBI		CPC	0.094	0.164	0.575	51075.695	0.565	
RHWB		CPC	0.173	0.252	0.686	690869.487	0.493	
ERBO		CPC	0.221	0.187	1.181	30332.319	0.238	
PWB		**APC**	-0.503	0.106	-4.755	154981.767	0.000	***
IRB		APC	0.275	0.359	0.765	5632.934	0.444	
OWB		APC	-0.201	0.157	-1.286	4908.949	0.198	
SWB		**APC**	-0.360	0.154	-2.346	5482.676	0.019	*
ERBI		APC	0.238	0.176	1.353	823.909	0.177	
RHWB		APC	-0.190	0.364	-0.524	12923215.698	0.601	
ERBO		APC	0.335	0.187	1.790	638.959	0.074	+
IRB		NOC	-0.284	1.548	-0.184	84390.210	0.854	
OWB		NOC	-0.241	0.406	-0.593	8509.157	0.553	
SWB		NOC	-0.006	0.743	-0.009	27977.348	0.993	
ERBI		**NOC**	0.173	0.087	1.982	13698.689	0.047	*
RHWB		NOC	0.106	1.009	0.105	4175289.487	0.916	
ERBO		NOC	-0.140	0.797	-0.175	39963.254	0.861	
IRB		LoAlt_COC	-0.107	0.901	-0.119	520054.763	0.905	
OWB		LoAlt_COC	-0.103	0.394	-0.261	11752325.177	0.794	
SWB		LoAlt_COC	-0.143	0.393	-0.365	38433.088	0.715	
ERBI		LoAlt_COC	-0.059	0.431	-0.137	277285.822	0.891	
RHWB		LoAlt_COC	-0.235	0.858	-0.274	1106840.518	0.784	
ERBO		LoAlt_COC	-0.063	0.457	-0.138	255967.021	0.890	
IRB		HiSac_COC	0.096	1.515	0.064	4438380.162	0.949	
OWB		HiSac_COC	0.189	0.532	0.355	494114.684	0.723	
SWB		HiSac_COC	0.026	0.594	0.044	29568.804	0.965	
ERBI		HiSac_COC	0.053	0.713	0.075	2277354.688	0.940	
RHWB		HiSac_COC	0.186	1.261	0.147	1621683.870	0.883	
ERBO		HiSac_COC	0.105	0.763	0.138	399118.323	0.890	
PWB		AOC	-0.030	0.094	-0.322	2971.839	0.747	
IRB		AOC	0.236	0.779	0.302	19863.196	0.762	
OWB		AOC	-0.301	0.285	-1.055	82206.459	0.291	
SWB		AOC	-0.270	0.456	-0.592	5324.821	0.554	
ERBI		AOC	0.130	0.398	0.325	15101.610	0.745	
RHWB		AOC	-0.389	0.603	-0.645	317253.397	0.519	
ERBO		AOC	0.138	0.418	0.330	14614.425	0.741	
OWB		**PWB**	0.614	0.107	5.742	5748.722	0.000	***
SWB		**PWB**	0.703	0.121	5.816	4139.854	0.000	***
RHWB		**PWB**	0.557	0.170	3.269	13943.295	0.001	**
ERBI		**IRB**	0.551	0.094	5.860	62031.287	0.000	***
ERBO		**IRB**	0.586	0.097	6.016	7934.878	0.000	***
SWB		OWB	0.284	0.197	1.437	1740.357	0.151	
RHWB		OWB	0.245	0.232	1.056	60111.308	0.291	
RHWB		SWB	-0.115	0.343	-0.335	9763.108	0.738	
ERBO		**ERBI**	0.529	0.086	6.176	92311.427	0.000	***

*** p < 0.001, ** p<0.01, * p<0.05, + p<0.1

Appendix 10.10 Structural Model Large-multiples

			ML Estimate	SE Estimate	CR	df	p	ML Estimate
Regression Weights								
PWB	**<---**	**APC**	-0.691	0.139	-4.961	1263.897	0.000	***
PWB	**<---**	**CPC**	-0.101	0.043	-2.325	893846.098	0.020	*
PWB	**<---**	**AOC**	-0.117	0.050	-2.355	6394.647	0.019	*
PWB	<---	NPC	0.050	0.051	0.993	174079.837	0.320	
OWB	<---	NOC	0.244	0.263	0.927	24455.840	0.354	
OWB	**<---**	**AOC**	-0.467	0.232	-2.012	25120.431	0.044	*
OWB	<---	APC	0.185	0.114	1.623	84541.742	0.105	
OWB	<---	HiSac_COC	0.031	0.138	0.228	99579.783	0.820	
OWB	<---	LoAlt_COC	-0.022	0.148	-0.147	64801.247	0.883	
OWB	**<---**	**PWB**	0.471	0.093	5.066	34557.611	0.000	***
IRB	<---	APC	-0.102	0.456	-0.223	162230.313	0.823	
IRB	<---	AOC	0.426	0.949	0.449	150271.981	0.654	
IRB	<---	HiSac_COC	-0.117	0.354	-0.330	53978.381	0.742	
IRB	<---	LoAlt_COC	0.084	0.414	0.204	17289.349	0.839	
IRB	<---	CPC	0.011	0.099	0.113	141947.891	0.910	
IRB	<---	NPC	0.160	0.330	0.484	242702.272	0.628	
IRB	<---	NOC	-0.507	1.220	-0.415	200843.414	0.678	
SWB	<---	APC	0.237	0.425	0.558	29907.984	0.577	
SWB	**<---**	**PWB**	0.946	0.146	6.498	6463.325	0.000	***
SWB	<---	OWB	0.263	0.138	1.900	4468.711	0.058	+
SWB	<---	NPC	0.015	0.283	0.052	1636715.059	0.958	
SWB	<---	NOC	-0.127	1.053	-0.121	117777.097	0.904	
SWB	<---	LoAlt_COC	-0.026	0.301	-0.087	85384.719	0.931	
SWB	<---	HiSac_COC	0.123	0.211	0.583	3956.161	0.560	
SWB	<---	AOC	0.059	0.823	0.071	119591.325	0.943	
ERBI	**<---**	**APC**	0.141	0.069	2.043	55181.774	0.041	*
ERBI	<---	NOC	-0.064	0.042	-1.541	60771.999	0.123	
ERBI	<---	NPC	0.018	0.039	0.461	527490.939	0.645	
ERBI	**<---**	**IRB**	0.204	0.074	2.773	55927.928	0.006	**
RHWB	<---	AOC	-0.167	0.799	-0.209	57397860.992	0.834	
RHWB	<---	APC	0.375	0.327	1.148	7196.561	0.251	
RHWB	<---	NOC	0.072	0.883	0.081	32575137.651	0.935	
RHWB	<---	HiSac_COC	0.230	0.290	0.792	547799.948	0.428	
RHWB	<---	LoAlt_COC	-0.239	0.246	-0.970	293946.441	0.332	
RHWB	<---	SWB	-0.280	0.352	-0.796	6407.547	0.426	
RHWB	<---	OWB	0.141	0.274	0.515	2446617.361	0.607	
RHWB	<---	PWB	0.938	0.522	1.797	8184.603	0.072	+
RHWB	<---	CPC	0.000	0.074	0.000	920522.420	1.000	
ERBO	<---	APC	-0.043	0.061	-0.702	80647.394	0.482	
ERBO	**<---**	**ERBI**	0.458	0.101	4.532	1546737.037	0.000	***
ERBO	**<---**	**CPC**	0.075	0.037	2.034	347872.318	0.042	*
ERBO	<---	HiSac_COC	-0.035	0.067	-0.513	89903.583	0.608	
ERBO	<---	NPC	-0.062	0.033	-1.870	97128.946	0.061	+
ERBO	**<---**	**IRB**	0.160	0.060	2.674	2789.564	0.008	**
ERBO	**<---**	**NOC**	0.078	0.035	2.218	18184.759	0.027	*
Standardized Regression Weights								
PWB	**<---**	**APC**	-0.549	0.092	-5.940	4426.809	0.000	***
PWB	**<---**	**CPC**	-0.166	0.073	-2.284	91183.387	0.022	*
PWB	**<---**	**AOC**	-0.200	0.084	-2.363	3507.337	0.018	*
PWB	<---	NPC	0.084	0.086	0.977	71614.414	0.328	
OWB	<---	NOC	0.339	0.363	0.934	23195.587	0.350	
OWB	**<---**	**AOC**	-0.783	0.371	-2.109	29505.294	0.035	*

OWB	<---	APC	0.145	0.089	1.634	132106.144	0.102	
OWB	<---	HiSac_COC	0.029	0.127	0.232	99274.039	0.816	
OWB	<---	LoAlt_COC	-0.018	0.125	-0.145	65792.334	0.884	
OWB	**<---**	**PWB**	0.465	0.086	5.409	15236.853	0.000	***
IRB	<---	APC	-0.081	0.359	-0.226	158337.147	0.821	
IRB	<---	AOC	0.724	1.591	0.455	180271.446	0.649	
IRB	<---	HiSac_COC	-0.111	0.315	-0.353	35080.905	0.724	
IRB	<---	LoAlt_COC	0.071	0.359	0.197	19519.680	0.844	
IRB	<---	CPC	0.018	0.161	0.114	127545.558	0.909	
IRB	<---	NPC	0.267	0.541	0.494	268381.485	0.621	
IRB	<---	NOC	-0.716	1.710	-0.419	231587.864	0.675	
SWB	<---	APC	0.157	0.283	0.556	34370.662	0.578	
SWB	**<---**	**PWB**	0.787	0.117	6.712	1132.456	0.000	***
SWB	**<---**	**OWB**	0.222	0.113	1.965	4532.380	0.049	*
SWB	<---	NPC	0.021	0.390	0.053	1698383.388	0.957	
SWB	<---	NOC	-0.150	1.229	-0.122	110372.044	0.903	
SWB	<---	LoAlt_COC	-0.019	0.220	-0.084	96449.622	0.933	
SWB	<---	HiSac_COC	0.098	0.167	0.585	3409.315	0.558	
SWB	<---	AOC	0.083	1.150	0.072	113807.846	0.942	
ERBI	**<---**	**APC**	0.151	0.073	2.065	52205.968	0.039	*
ERBI	<---	NOC	-0.123	0.080	-1.529	43674.753	0.126	
ERBI	<---	NPC	0.041	0.088	0.459	1039592.657	0.646	
ERBI	**<---**	**IRB**	0.275	0.092	2.985	29367.048	0.003	**
RHWB	<---	AOC	-0.253	1.215	-0.208	61323114.518	0.835	
RHWB	<---	APC	0.265	0.239	1.112	9347.710	0.266	
RHWB	<---	NOC	0.090	1.109	0.081	35721289.790	0.935	
RHWB	<---	HiSac_COC	0.195	0.241	0.811	428705.389	0.417	
RHWB	<---	LoAlt_COC	-0.179	0.187	-0.956	243560.991	0.339	
RHWB	<---	SWB	-0.300	0.375	-0.802	5914.568	0.423	
RHWB	<---	OWB	0.128	0.258	0.495	4314123.843	0.621	
RHWB	<---	PWB	0.838	0.455	1.840	4037.234	0.066	+
RHWB	<---	CPC	0.000	0.107	0.000	799679.596	1.000	
ERBO	<---	APC	-0.058	0.082	-0.711	103597.409	0.477	
ERBO	**<---**	**ERBI**	0.580	0.092	6.317	108072.978	0.000	***
ERBO	**<---**	**CPC**	0.210	0.093	2.250	67242.624	0.024	*
ERBO	<---	HiSac_COC	-0.056	0.107	-0.528	55537.222	0.598	
ERBO	<---	NPC	-0.175	0.093	-1.886	64415.274	0.059	+
ERBO	**<---**	**IRB**	0.271	0.100	2.709	4290.652	0.007	**
ERBO	**<---**	**NOC**	0.188	0.083	2.274	10340.348	0.023	*
Squared Multiple Correlations								
PWB			0.419	0.078	5.345	3646.647	0.000	***
IRB			0.081	0.108	0.745	36098.521	0.457	
OWB			0.522	0.067	7.764	6403.281	0.000	***
SWB			0.742	0.073	10.231	6097.633	0.000	***
ERBI			0.112	0.053	2.102	26432.969	0.036	*
RHWB			0.381	0.116	3.298	29261.667	0.001	***
ERBO			0.522	0.095	5.508	1262654.940	0.000	***

*** p < 0.001, ** p<0.01, * p<0.05, + p<0.1

Appendix 10.11 Structural Model Large-multiples

		ML Estimate	SE Estimate	CR	df	p	ML Estimate
Total effects							
PWB	NPC	0.050	0.051	0.993	174079.837	0.320	
IRB	NPC	0.160	0.330	0.484	242702.272	0.628	
OWB	NPC	0.024	0.024	0.964	188255.376	0.335	
SWB	NPC	0.068	0.286	0.239	698880.928	0.811	
ERBI	NPC	0.051	0.081	0.623	735967.388	0.533	
RHWB	NPC	0.031	0.136	0.231	179737933.914	0.817	
ERBO	NPC	-0.013	0.090	-0.140	55422.856	0.889	
PWB	**CPC**	-0.101	0.043	-2.325	893846.098	0.020	*
IRB	CPC	0.011	0.099	0.113	141947.891	0.910	
OWB	**CPC**	-0.047	0.022	-2.103	489688.938	0.035	*
SWB	**CPC**	-0.108	0.049	-2.198	3321340.570	0.028	*
ERBI	CPC	0.002	0.022	0.102	123797.356	0.919	
RHWB	CPC	-0.071	0.076	-0.932	597508.387	0.351	
ERBO	CPC	0.077	0.046	1.675	61927.889	0.094	+
PWB	**APC**	-0.691	0.139	-4.961	1263.897	0.000	***
IRB	APC	-0.102	0.456	-0.223	162230.313	0.823	
OWB	APC	-0.140	0.104	-1.350	19720.799	0.177	
SWB	APC	-0.453	0.409	-1.107	1465310.775	0.268	
ERBI	APC	0.120	0.123	0.974	124398.180	0.330	
RHWB	APC	-0.168	0.211	-0.794	340158.036	0.427	
ERBO	APC	-0.005	0.132	-0.035	50663.206	0.972	
IRB	NOC	-0.507	1.220	-0.415	200843.414	0.678	
OWB	NOC	0.244	0.263	0.927	24455.840	0.354	
SWB	NOC	-0.063	1.019	-0.062	196040.759	0.950	
ERBI	NOC	-0.168	0.266	-0.630	363153.051	0.529	
RHWB	NOC	0.122	0.533	0.229	293805.781	0.819	
ERBO	**NOC**	0.078	0.035	2.218	18184.759	0.027	*
IRB	LoAlt_COC	0.084	0.414	0.204	17289.349	0.839	
OWB	LoAlt_COC	-0.022	0.148	-0.147	64801.247	0.883	
SWB	LoAlt_COC	-0.032	0.301	-0.106	64510.515	0.916	
ERBI	LoAlt_COC	0.017	0.085	0.205	17072.070	0.837	
RHWB	LoAlt_COC	-0.233	0.208	-1.122	203340.946	0.262	
ERBO	LoAlt_COC	0.021	0.106	0.202	13262.135	0.840	
IRB	HiSac_COC	-0.117	0.354	-0.330	53978.381	0.742	
OWB	HiSac_COC	0.031	0.138	0.228	99579.783	0.820	
SWB	HiSac_COC	0.131	0.208	0.629	3462.477	0.530	
ERBI	HiSac_COC	-0.024	0.078	-0.303	74060.978	0.762	
RHWB	HiSac_COC	0.198	0.231	0.860	66253.884	0.390	
ERBO	HiSac_COC	-0.064	0.106	-0.602	15252.115	0.547	
PWB	**AOC**	-0.117	0.050	-2.355	6394.647	0.019	*
IRB	AOC	0.426	0.949	0.449	150271.981	0.654	
OWB	**AOC**	-0.523	0.232	-2.256	21680.627	0.024	*
SWB	AOC	-0.190	0.782	-0.243	424563.304	0.808	
ERBI	AOC	0.087	0.206	0.422	228477.562	0.673	
RHWB	AOC	-0.297	0.409	-0.726	179775.655	0.468	
ERBO	AOC	0.108	0.249	0.434	87114.622	0.664	
OWB	**PWB**	0.471	0.093	5.066	34557.611	0.000	***
SWB	**PWB**	1.070	0.123	8.719	11263.949	0.000	***
RHWB	**PWB**	0.705	0.137	5.156	52165.488	0.000	***
ERBI	**IRB**	0.204	0.074	2.773	55927.928	0.006	**
ERBO	**IRB**	0.253	0.081	3.122	5195.668	0.002	**
SWB	OWB	0.263	0.138	1.900	4468.711	0.058	+
RHWB	OWB	0.068	0.180	0.377	36642.647	0.706	
RHWB	SWB	-0.280	0.352	-0.796	6407.547	0.426	

ERBO	**ERBI**	0.458	0.101	4.532	1546737.037	0.000	***
Standardized Total Effects							
PWB	NPC	0.084	0.086	0.977	71614.414	0.328	
IRB	NPC	0.267	0.541	0.494	268381.485	0.621	
OWB	NPC	0.039	0.041	0.963	177133.068	0.336	
SWB	NPC	0.095	0.394	0.242	658636.476	0.809	
ERBI	NPC	0.114	0.178	0.638	827747.712	0.523	
RHWB	NPC	0.047	0.200	0.235	105204471.006	0.814	
ERBO	NPC	-0.036	0.251	-0.145	48019.381	0.885	
PWB	**CPC**	-0.166	0.073	-2.284	91183.387	0.022	*
IRB	CPC	0.018	0.161	0.114	127545.558	0.909	
OWB	**CPC**	-0.077	0.035	-2.181	238113.737	0.029	*
SWB	**CPC**	-0.148	0.066	-2.236	2424580.288	0.025	*
ERBI	CPC	0.005	0.047	0.107	180308.472	0.914	
RHWB	CPC	-0.105	0.110	-0.949	800649.170	0.342	
ERBO	CPC	0.218	0.118	1.850	26621.398	0.064	+
PWB	**APC**	-0.549	0.092	-5.940	4426.809	0.000	***
IRB	APC	-0.081	0.359	-0.226	158337.147	0.821	
OWB	APC	-0.110	0.080	-1.369	24677.276	0.171	
SWB	APC	-0.300	0.271	-1.108	2206166.925	0.268	
ERBI	APC	0.128	0.130	0.982	125493.063	0.326	
RHWB	APC	-0.119	0.149	-0.796	355711.881	0.426	
ERBO	APC	-0.006	0.177	-0.035	50722.189	0.972	
IRB	NOC	-0.716	1.710	-0.419	231587.864	0.675	
OWB	NOC	0.339	0.363	0.934	23195.587	0.350	
SWB	NOC	-0.075	1.195	-0.062	184752.332	0.950	
ERBI	NOC	-0.319	0.502	-0.635	382082.641	0.525	
RHWB	NOC	0.154	0.672	0.229	298916.490	0.819	
ERBO	**NOC**	0.188	0.083	2.274	10340.348	0.023	*
IRB	LoAlt_COC	0.071	0.359	0.197	19519.680	0.844	
OWB	LoAlt_COC	-0.018	0.125	-0.145	65792.334	0.884	
SWB	LoAlt_COC	-0.023	0.220	-0.103	80355.126	0.918	
ERBI	LoAlt_COC	0.019	0.096	0.201	16849.041	0.840	
RHWB	LoAlt_COC	-0.175	0.162	-1.078	166674.076	0.281	
ERBO	LoAlt_COC	0.031	0.149	0.205	14570.675	0.838	
IRB	HiSac_COC	-0.111	0.315	-0.353	35080.905	0.724	
OWB	HiSac_COC	0.029	0.127	0.232	99274.039	0.816	
SWB	HiSac_COC	0.104	0.165	0.630	2848.953	0.529	
ERBI	HiSac_COC	-0.030	0.093	-0.328	46483.273	0.743	
RHWB	HiSac_COC	0.168	0.189	0.892	57793.482	0.373	
ERBO	HiSac_COC	-0.104	0.159	-0.656	9944.228	0.512	
PWB	**AOC**	-0.200	0.084	-2.363	3507.337	0.018	*
IRB	AOC	0.724	1.591	0.455	180271.446	0.649	
OWB	**AOC**	-0.876	0.367	-2.384	23378.092	0.017	*
SWB	AOC	-0.269	1.102	-0.244	386576.566	0.807	
ERBI	AOC	0.199	0.462	0.430	250478.989	0.667	
RHWB	AOC	-0.449	0.619	-0.726	222529.001	0.468	
ERBO	AOC	0.313	0.701	0.446	106254.729	0.655	
OWB	**PWB**	0.465	0.086	5.409	15236.853	0.000	***
SWB	**PWB**	0.890	0.093	9.602	1085.859	0.000	***
RHWB	**PWB**	0.628	0.114	5.524	4650.783	0.000	***
ERBI	**IRB**	0.275	0.092	2.985	29367.048	0.003	**
ERBO	**IRB**	0.431	0.123	3.509	6732.930	0.000	***
SWB	**OWB**	0.222	0.113	1.965	4532.380	0.049	*
RHWB	OWB	0.062	0.167	0.368	44775.431	0.713	
RHWB	SWB	-0.300	0.375	-0.802	5914.568	0.423	
ERBO	**ERBI**	0.580	0.092	6.317	108072.978	0.000	***

*** p < 0.001, ** p<0.01, * p<0.05, + p<0.1

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