A LONGITUDINAL EXAMINATION OF THE CONSEQUENCES OF OCBS FOR INDIVIDUALS IN ORGANISATIONS: THE MODERATING ROLES OF PERCEIVED ORGANISATIONAL SUPPORT AND CONTROL

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Abstract

The present thesis was conceptualised and conducted against the backdrop of rapidly emerging research that challenges the conventional depiction of OCBs as positive extra-role behaviours that produce beneficial outcomes to both individuals and organisations. The thesis contends that OCBs may be either beneficial or detrimental to individual performers depending on their perceptions of the psychosocial work environment – i.e. perceived job control and perceived organisational support. Both perceived job control and organisational support have been researched in existing theoretical models and prior research which depict and assess these variables as key moderators in the relationship between work stressors and job strain. Hence, the present thesis hypothesised that both job control and support will moderate the effects of Time 1 OCBs (peer reports of OCB-I and OCB-O) on various individual-level outcomes of job satisfaction, organisational commitment, role ambiguity, role overload, work-family conflict, physical exhaustion and work-related depression measured at Time 2, based on a two-wave longitudinal panel methodological design. This newly proposed moderation model was tested across three interrelated Studies (Study 1, Study 2, and Study 3) in which the first two studies were cross-sectional based on Time 1 and Time 2 data, respectively, and the final study provided a longitudinal version of the same analyses. A direct effects model (where the effects of Time 1 OCBs on the Time 2 outcomes were assessed) and a mediation model (in which role stressors were modelled as mediators between OCBs and job attitudes and health) were also examined, alongside the proposed moderation model.

In Study 1, based on data from 562 employees in Barbados captured at the first wave, structural equation modelling (SEM) analyses revealed that the direct effects model emerged superior to the mediation and moderation models. There were no significant interaction effects of control and support on any of the outcomes in Study 1. In Study 2, based on data from 427 employees (an attrition rate of 24%) captured at the second wave, the SEM analyses revealed that both mediation and moderation models emerged as the superior models. In the moderation model, both control and support emerged as significant moderators in several relationships between OCBs and the outcome variables. Finally in Study 3, the longitudinal SEM analyses revealed that the 'normal causation' direct effects model emerged superior to the reverse and reciprocal causation models as well as the mediation models. The moderation model also emerged as a superior model in which both control and support moderated several relationships between Time 1 OCBs and Time 2 outcome variables.

Overall, the present thesis provided some support for the proposed moderation model and is consistent with key assumptions underlying existing theoretical models and findings of prior research on the stressor-strain relationship. The findings reinforced the role of personal job resources such as job autonomy and organisational support as critical factors that can buffer the potentially negative effects of OCBs for individual performers. Theoretical and practical implications, future research recommendations, and study limitations have been discussed in the final chapter of the thesis.

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Chapter 1: Introduction

1.1 Background to the Research

The study of organisational citizenship behaviour (OCB) has grown tremendously over the years since the popular work of Organ (1988). Over these years, much empirical work has investigated the construct's conceptual properties, antecedents and consequences (Organ, 1995; Podsakoff & Mackenzie, 1997). However, despite the increasing body of knowledge on OCB, many conceptual ambiguities and empirical contradictions are still emerging. Bolino, Turnley and Niehoff (2004) attributed some of these problems to prior studies' overemphasis on the positive attributes of OCB. This focus has led to a number of prevailing assumptions of OCB which have resulted in (1) OCB being defined in a positive manner, (2) OCB being seen as an outcome of positive forces within and outside of the individual, and (3) OCB being treated as a phenomenon that produces only positive effects for both individuals and organisations.

Several researchers are now challenging these assumptions and acknowledge that OCB may have a 'dark side' which has implications for its future conceptualisation and operationalisation in both the theoretical and practical arenas. In particular, this fashion of research has revealed that OCB can stem from self-serving and other negative motives (Bolino, 1999; Snell & Wong, 2007), and that it can lead to negative individual outcomes such as role overload, stress, burnout, work-family conflict, turnover intentions and poor health (Bolino & Turnley, 2005; Bolino, Turnley, Gilstrap, & Suazo, 2010). However, this 'side' of OCB is still young and in need of further conceptual and empirical nurturance.

The focus of this research is not to choose either side of the OCB argument but rather capitalise on an opportunity to ascertain the actual nature and manifestation of OCB and its

effects on several individual-level outcomes. Spitzmuller, Van Dyne, and Ilies (2008) have argued that more research is required to better understand the conflicting effects of OCB on individual-level variables such as employee health and attitudes. Understanding the conditions or situations under which OCB is detrimental and positive for individual OCB performers promises a significant advance in the existing OCB literature. As a result, this thesis examines two principal variables – perceived organisational support and control over work – as key moderators in the relationship between OCBs and individual outcomes. The consideration of moderators provides an opportunity for researchers to better ascertain and understand the 'confusing' OCB-outcomes relationship as it suggests that this relationship is not as straightforward as others would have initially contended. In light of this focus, the present thesis seeks to address the conflicting perspectives of OCBs in organisations, by advancing and testing a two-wave longitudinal model depicting the effects of OCBs on individual performers in terms of their attitudes, levels of work-related stress, and overall health and well-being, as dependent on the moderators of perceived organisational support and control.

1.2 Theoretical and Practical Significance

1.2.1 Theoretical Significance. The thesis aims to make a number of theoretical and practical contributions. Theoretically, the study offers a fresh examination of lingering arguments regarding the conflicting nature of OCB by advancing a conceptual model that assesses the conditions under which OCB may prove beneficial and detrimental to individual performers. To the best of the author's knowledge, there exists a scant body of published research that examines how the effects of OCBs on a variety of individual-level outcomes may

vary according to employees' perceptions of the psychosocial work environment (e.g. organisational support and job control). Only one longitudinal study by Somech and Drach-Zahavy (2013) was revealed in the literature to examine the effect of OCB on job strain as moderated by leader support and participative decision-making. This study was the only empirical account closest to the proposed intent of the present thesis. However, there are a number of deficiencies that the prior study suffers from but are remedied in the present thesis. Unlike the prior study which examined only an overall OCB factor and job strain composite, the present thesis sought to examine different categories of OCB (i.e. OCB-I and OCB-O) and employee well-being and attitudes (e.g. physical exhaustion, work-related depression, job satisfaction, etc). Moreover, unlike the prior research which endorsed an incomplete panel design, the present thesis also examines different, albeit similar, moderators (job autonomy/control and organisational support) within a complete panel design in which all explanatory, moderating, and outcome variables were measured at both time waves, thereby permitting tests of normal, reverse, and reciprocal causation in the relationships between OCBs and the outcome variables.

Secondly, the focus of the present thesis deviates from conventional routes found in the OCB literature. For example, much research has focused largely on OCB as an outcome variable of attitudinal, dispositional, and contextual factors, whereas the present research places it as a key independent variable. Moreover, the body of research examining effects of OCB on individual-level variables of health, job attitudes, and stress is scant, and only one cross-sectional research study to date (Bolino & Turnley, 2005) has examined how one form of OCB (i.e. individual initiative) impacts on employees' health and

well-being. The current research examines the effects of organisationally- and individually-directed OCBs measured at an earlier time period on outcome variables measured at a later time period. This longitudinal approach to assessing the effects of OCBs provides a more rigorous and powerful examination of the OCB-outcomes relationship due to its inherent advantage over cross-sectional analyses. Given the research is seeking to capture independent and dependent variables at both time periods, this presents a perfect opportunity to examine reverse and reciprocal causality hypotheses in which OCBs are treated as independent variables at Time 1 and the dependent variables at Time 2. As a result, this methodological advantage provides important theoretical questions to be addressed, especially in light of competing models demonstrating whether OCBs are predictors of stressors, attitudes and health or vice versa. As mentioned earlier, the thesis does not assume that OCBs will demonstrate positive effects on individuals (as conventional literature has theorised) but examines how their effects may vary dependent on factors inherent in the psychosocial work environment (namely, organisational support and job control).

Thirdly, this thesis advances and empirically tests a new conceptual model depicting the effects of OCBs on a number of diverse individual-level outcomes including job attitudes, stressors and health-related factors. These effects are hypothesised to be moderated by organisational support and control. No such model exists in the literature regarding the moderated effects of OCBs, and the current thesis borrows from a number of popular and established theoretical frameworks in the building of this new conceptual model. Model building and development is critical to advancement of theory and research in any discipline.

1.2.2 Practical Significance From a practical perspective, the research is targeted at efforts to improve the psychosocial work environment of many organisations in which OCBs are commonplace. In many respects, OCBs are beneficial to organisational effectiveness and efficiency; however, there are situations in which OCBs might be detrimental to the individual and the organisation. This research seeks to highlight those situations in which organisations must be careful to endorse and encourage proactive organisational behaviours.

Secondly, employees who constantly engage in OCBs may require additional support systems and enhanced autonomy over their job in order to prevent or curb negative health consequences. The current research acknowledges the role of support and job control in helping employees cope with the increasing and diverse challenges and stressors in the workplace.

Thirdly, employers must be proactive in ensuring that employees' health and well-being are protected and enhanced. Employers must recognise that employees whose health and well-being are adversely affected can prove costly in the long run for their organisations, and are likely to impair the overall image of these organisations as attractive employers for current and prospective employees. Researchers (e.g. Cooper & Cartwright, 1994; Lowe, Schellenberg & Shannon, 2003) have provided necessary empirical evidence to support the associated benefits of healthy work organisations including job satisfaction, commitment and morale as well as the costs associated with unhealthy workplaces including absenteeism, turnover, and low levels of productivity. Hence, employers must value their employees as they are the most important assets in the organisation. This research provides necessary guidance on how employers can safeguard employees from the psychosocial

threats to their health and well-being and direct them to avenues in which employees can fulfil their roles and obligations in a healthy work environment.

1.3 General Outline of Thesis

This thesis comprises a number of key chapters depicting important aspects and phases of the research process. The entire thesis is expressed within seven chapters which largely reflect three interrelated Studies (i.e. Study 1, 2 and 3).

Chapter 2 of the thesis introduces a comprehensive and balanced review of OCBs. It provides relevant conceptual and empirical literature on this concept in terms of its nature, antecedents and consequences for individuals and organisations. These areas are discussed under two positions: (1) The traditional 'positive' side of OCB, and (2) The emerging 'dark' side of OCB. The review discusses theoretical perspectives and empirical findings underlying and supporting each position. Moreover, Chapter 2 presents an introduction of the study's main conceptual model depicting how the effects of OCB on individual-level outcomes can vary as a result of the moderating influences of perceived organisational support and perceived control. It is also provides a detailed theoretical background regarding the development of the conceptual model.

Chapter 3 introduces the principal study methodology and design guiding the research. It discusses the advantages and disadvantages of the chosen study design, and seeks to evaluate the chosen longitudinal design using an established evaluative framework (and associated assessment criteria) designed to assess the quality of longitudinal panel designs utilised by De Lange et al.(2003).

Chapters 4 to 6 represent three interrelated studies driving this research. Study 1 is presented in Chapter 4 which discusses the research methods adopted (i.e. sampling and data-collection procedures, research measures, and data-analysis techniques employed) and the cross-sectional results of the statistical testing of the models (i.e. hypothesised model versus alternative models) at Phase 1 of the two-wave longitudinal research design. Study 2, presented in Chapter 5, discusses the research methods adopted at Phase 2, excluding details that were common with Phase 1, and the corresponding cross-sectional results of the statistical testing of the models at Phase 2. Chapter 6 examines the full longitudinal testing and assessment of the proposed conceptual model. This model is then compared against the other competing or alternative models. The results are then compared against the cross-sectional versions of the models tested at each phase in the earlier Studies. Given the two-wave panel design, the findings associated with tests of reverse and reciprocal causation were also presented and discussed.

The final chapter (Chapter 7) of the thesis provides an integrative discussion of the key findings that emerged from the three Studies, makes explanations for critical, unique, and/or unexpected findings, draws comparisons and contrasts of the current findings with the conceptual and empirical literature, highlights main study limitations, and points to important implications for theory, practice, and future research.

1.4 Conclusion

Overall, the thesis represents an important advance in the conceptual and empirical study of OCBs and its consequences. The thesis aims to contribute to the theoretical field of OCB, stress, and well-being, as well as point to key recommendations

for managers and employees interacting in organisations on the management of citizenship behaviours and the psychosocial work environment. Relying on three Studies, the thesis tests a new conceptual model of the consequences of OCB in which a number of moderating influences are observed and assessed to determine the specific conditions under which OCB may prove detrimental or beneficial to individuals performing these behaviours targeted at the individual and organisation. The next chapter presents a comprehensive review of the theoretical and empirical literature, incorporating both older, conventional research studies and the newest research studies in the topic area.

Chapter 2: Literature Review

2.1 Introduction

This chapter introduces a comprehensive and balanced review of the conceptual and research literature on OCBs from two general perspectives: (1) the positive side of OCB, and (2) the negative side of OCB. In addition, the chapter presents the main assumptions underlying the thrust of the current thesis and introduces a new conceptual model depicting the consequences of OCB for the individual performer in terms of three categories of conceptually relevant variables derived from the existing literature (i.e. job attitudes, role stressors and health outcomes). Perceived organisational support and perceived control are included as key moderators in the relationship between OCBs and these outcome variables. Empirical support and theoretical justification are provided for this conceptual model.

2.2 A Review of the 'Positive Side' of Organisational Citizenship Behaviours

This first section of the review addresses the 'positive side' of OCB in organisations. The historical context and early conceptualisations of OCB and its nature are thoroughly discussed, followed by a review of the conventional antecedents and positive consequences of OCB for individuals and organisations. Finally, this section concludes with a summary of the key features of OCBs for organisations and individuals.

2.2.1 Historical Background behind 'Positive' OCB. Before delving into the earliest conceptualisations of OCB, several historical perspectives must be presented in order to ascertain the preceding background underlying how OCB (and other similar preceding constructs) first emerged within

organisational theory and scholarship. These perspectives came out of a number of diverse disciplines ranging from sociology to economics, including those proposed by Barnard (1938), Katz and Kahn (1978), and Blau (1964).

Barnard (1938) stressed the notion of the cooperative system as the very nature of the organisation. Within this context, he made a number of critical observations and claims that are still central to the study of OCB to date. Firstly, Barnard underscored the importance of the 'willingness' of individuals in organisations to contribute efforts to improving the cooperative system within which they work, interact, and produce. Barnard suggested that these contributions of individual organisational members were much more relevant and impactful than the formal structure and controls in a cooperative, organisational system. Another important assumption made by Barnard was that these efforts to contribute to the overall functioning of the system were also spontaneous and not naturally recognised as a part of the formal performance system such that they were not actual conditions or job requirements placed on employees. Finally, Barnard noted that these cooperative and spontaneous actions are not normally induced by material or monetary considerations but more by intangible desires and motives (e.g. satisfaction with work, commitment, etc). Hence, the focus on 'cooperative relations' and 'spontaneous employee behaviours' were hallmarks of his theory more so than the influences of actual formal structures and organisational rules which were key subjects of earlier debates by his predecessors. Overall, these important claims of Barnard acted to set a foundation for the study of voluntary employee contributions, above and beyond formal work performance, that serve to improve organisational effectiveness and efficiency.

Similar to Barnard (1938), Katz and Kahn (1978) highlighted three forms of contributions that effective organisations must inspire in their members: (1) the ability to attract and maintain skilled workers within the organisation, (2) the performance of high and dependable in-role job behaviours, and (3) the performance of "innovative and spontaneous behavior: performance beyond role requirements for accomplishments of organisational functions" (p. 337). The final category of contributions which includes cooperative behaviours, creative and innovative efforts, and harmony promoting gestures that create a cohesive and productive organisation represent important components characteristic of OCBs in organisations. Katz and Kahn believed, however, that these behaviours are so mundane that they often go unnoticed or unrecorded. They further argued that employees often develop a 'sense of citizenship' which manifests as an immediate antecedent of these behaviours. The good citizen does not engage in mere compliant behaviour but engages in actions and behaviours that encourage a spirit of community and productivity at work. Overall, Katz and Kahn stressed that the organisation's ability to foster these forms of contributions permits a system that is cooperative, effective, and efficient.

Blau's (1964) social exchange perspective also represents an invaluable framework that generates a comprehensive understanding underlying the organisational climate and social relationships that foster extra-role behaviours such as OCBs in work settings. For example, social exchange theory suggests that individuals in organisations operate within the context of social relationships that necessitates unspecified future obligations. Individuals who are recipients of some intangible 'gift' or 'reward' normally develop a need to reciprocate the 'giver' (whether the organisation or an individual member). The

reciprocation is varied, flexible, and balances the social relationship between the two parties. Two individuals may engage in social exchanges that resemble voluntary contributions aimed at helping each other, or an individual and organisation may engage in social exchanges that resemble behaviours that are mutually beneficial. Hence, the nature and various forms of these social exchanges are critically important. For example, if an employee perceives that an organisation is going beyond what is contractually determined to contribute to an employee's development or satisfaction at work, that employee develops an obligation, in turn, to give back to the organisation beyond what is required within his or her employment contract. Social exchange theory has developed tremendously as a strong guiding framework upon which the early theorising and study of OCBs were built. A number of key assumptions or conditions underlying social exchange theory include: (1) the view that voluntary contributions of individual organisational members are inspired by both internal and external satisfiers inherent at work, (2) the view that both parties in a social exchange develop a sense of obligation to reciprocate each other, and (3) the view that the value and efficacy of the social exchange between parties depends on trust. Essentially, this perspective speaks to an important and inescapable organisational reality and context that surpasses the necessity of economic exchanges solely as incentives for positive employee behaviours and improved organisational functioning.

Central to the foregoing discussion of the various historical perspectives is the acceptance that some notion or concept of OCB has been evident in a number of paradigms dating as far back as five decades. All of these perspectives noted very similar features of a category of voluntary and extra-

role job behaviours that eventually became an important target of theorising and study for future researchers in organisational behaviour and theory.

2.2.2 Early Conceptualisations of 'Positive' OCB. The earliest conceptualisation of the actual notion of OCB emerged out of an attempt (Organ, 1977) to resolve a popular debate regarding the relationship between job satisfaction and worker productivity. Organ (1977) contrasted typical quantitative measures of worker productivity with other more subtle, qualitative forms of job performance. At that time, these subtler forms of work behaviours were largely neglected and under-studied in organisational practice and research. However, Organ highlighted that these behaviors, albeit absent in quantitative measures of productivity and not formally recompensed, have the potential to contribute to the overall effectiveness and efficiency of the organisation. Subsequent to Organ's (1977) publication, these behavioural contributions were classified under the concept known as OCB which was defined as "individual behavior that is discretionary, not directly or explicitly recognised by the formal reward system, and in the aggregate, promotes the efficient and effective functioning of the organization" (Organ, 1988, p.4). This definition had pointed to several key features underlying the nature of OCB.

Firstly, the discretionary nature of OCB is a key characteristic of this performance concept as it suggests that the behaviour is subject to personal choice and not recognised as an explicit job requirement or obligation in one's employment contract or job description (Organ, 1988). This can be expressed by employees who voluntarily engage in work-related tasks or activities that are outside of their job description but nevertheless contribute positively to the organisation.

Secondly, the fact that OCB does not guarantee future remuneration (whether it is monetary or nonmonetary) from superiors given that it is not formally recognised within the employee's job contract is another important feature. Hence, any forms of compensation derived from OCB are highly uncertain when compared to more formal, recognised forms of in-role contributions such as technical excellence and innovative solutions (Organ, 1988, 1997).

Thirdly, the latter feature of the Organ's (1988) definition noted that OCB, in aggregate, enhances the overall functioning of organisations. Hence, this suggests that single instances of OCB in an organisation would not effectively promote high organisational performance, but these behaviours summed across time and across individuals, groups, and departments are likely to improve overall organisational effectiveness and efficiency.

Much criticism had emerged regarding the first two features or conditions of OCB: (1) the discretionary and extra-role nature, and (2) the noncontractual reward requirements. In terms of the discretionary and extra-role nature, researchers (e.g. Morrison, 1994) had noted that most operational measures of OCB were found to consist of largely in-role behaviours rather than behaviors that were outside of one's contract. For example, Van Dyne, Graham, and Dienesch (1994) claimed that the difference between in-role and extra-role behaviours represents "an inconstant distinction that varies across persons, jobs, and organisations and over time and with circumstances for individual job incumbents" (p. 766). In terms of the noncontractual reward requirements, Organ (1997) highlighted that the argument that any form of compensation for OCB is not contractually guaranteed by the formal reward system can be heavily criticised as this feature is not necessarily peculiar to

OCB but can be applied to any in-role behaviour that is formally recognised. Moreover, Organ noted that certain categories of OCB are just as likely as recognised forms of in-role behaviors to lead to some form of monetary recompense for employees.

In response to these challenges, Organ, in keeping with the notion of contextual performance derived from Borman and Motowidlo (1993), re-defined OCB as "contributions to the maintenance and enhancement of social and psychological context that support task performance" (1997, p. 91). This definition does not require that OCB be extra-role (or discretionary) or nonrewarded. Ultimately, Organ, Podsakoff and Mackenzie (2006) underscored the problems inherent in defining OCB along the same lines as contextual performance and noted that the concept of OCB is still in need of conceptual refinement and clarity.

Central to the early conceptualisations of OCB is the perspective of national culture as a key factor in the study of OCB and its manifestation. Organ et al. (2006) highlighted the importance of and need for empirical observations of OCBs in organisations in various cultures and countries across the globe. Drawing from the tenets of Hofstede's framework of cultural systems, Organ et al. (2006) claimed that the actual manifestations of OCBs may actually vary according to culture – i.e. individualistic versus collectivistic cultures, low versus high power distant cultures, low versus high uncertainty avoidant cultures, and masculine versus feminine cultures. For example, individuals in cultures that are high on power distance and uncertainty avoidance will be more reluctant to 'take initiative' due to fear of chastisement by superiors. Hence, this form of behaviour may not be regarded as OCB in these types of cultures. Moreover, Paine and Organ (2000) argued that certain cultural nuances inherent in the meanings attached to OCBs

must not be ignored as, for example, in collectivist cultures, "what we would call OCB appears to be part of what one is generally expected to do – regardless of job description or prospects for any sort of reward other than honour within the group" (p. 56). In addition, others have found a significant effect of national culture on employees' perceptions of specific behaviours that constitute OCB versus other forms of workplace behaviours (i.e. in-role or expected behaviours). Research by Lam, Hui and Law (1999) revealed that participants from collectivist cultures (e.g. Japan) were significantly more likely to treat the OCB dimensions of sportsmanship and courtesy as required job behaviours more so than those from more individualist cultures such as USA and Australia. Notwithstanding these differences, Paine and Organ (2000) concluded that "[e]ventually, research may show that certain groups of countries or cultures can reach a consensus about what constitutes OCB" (p. 58).

2.2.3 Early Frameworks Related to OCB. Several early frameworks related to OCB had emerged to capture and explain employee behaviours that are similar to or characteristic of OCBs in organisations. It is critical to understand these frameworks in order to assess the level of similarity they share with OCB as well as how they differ conceptually from this construct. These related frameworks include the notions of contextual performance, prosocial organisational behaviour, and extra-role behaviour.

As stated earlier, contextual performance can be classified as important contributions that sustain "an ethos of cooperation and interpersonal supportiveness of the group" (Organ et al., 2006, p.31). Contextual performance comprises both interpersonal facilitation and job dedication. The former deals with helping and job colleagueship and resembles the helping

dimension of OCB, and latter concerns self-disciplined behaviours and acts of rule-following resembling the compliance dimension of OCB. However, although contextual performance and OCB bear much resemblance, the contextual performance framework does not directly make any reference to any job-related requirement or prospect of formal rewards (whereas OCBs have been traditionally classified as contributions that do not fit these criteria). Although contextual performance has been traditionally regarded as OCB, Organ (1977) noted that "some readers might object to defining OCB as Borman and Motowidlo define contextual performance, regarding it as too vague or diffuse" (p. 90).

The second framework, prosocial organisational behaviour, was first used by Brief and Motowidlo (1986) to cover any range of behaviours in an organisational context that are targeted at improving the welfare of an individual to whom the behaviour is directed. This definition does not constrain acts to be directly relevant to the organisation (e.g. helping employees on personal matters). The definition, like contextual performance, also covers behaviours that may be part of the job description or requirements. Hence, prosocial organisational behaviour can be either role-prescribed or extra-role, whereas OCB by nature is extra-role (Borman & Motowidlo, 1997).

The third framework located OCB within a wider framework of behaviours known as extra-role behaviour. According to Van Dyne, Cummings, and McLean-Parks (1995), extra-role behaviour covers behaviours that go beyond role requirements that benefit the organisation in any way. Although the extra-role behaviour framework would exclude job-compliant behaviours, the helping dimension of OCB has been classified as a form of affiliative extra-role behaviour (Van Dyne et al., 1995). This form of extra-role behaviour comprises acts

that develop and sustain interpersonal and affective bonds among members of the organisation and promotes harmony and consensus. Another key difference between this framework and OCB is that the former also includes negative forms of extra-role behaviours including anticitizenship behaviours, workplace deviance, and voluntary forms of counterproductive behaviours including gossiping about coworkers, blaming coworkers for problems, sabotaging coworkers' work tasks and assignments, and unruliness. Some research studies on counterproductive work behaviours (CWBs) and OCBs have demonstrated that although these two domains exist within the same global domain, they may operate at opposite sides of the voluntary work behaviour domain (Dineen, Lewicki & Tomlinson, 2006; Lee & Allen, 2002, Rotundo & Sackett, 2002). This body of research has highlighted the view that OCBs represent positive voluntary contributions, whereas CWBs represent the negative, harmful actions, suggesting that both categories of behaviours are inversely related to each other and function on the different sides of the same continuum.

2.2.4 Further Conceptualisations of 'Positive' OCB. Podsakoff, Mackenzie, Paine, and Bachrach (2000), in a critical review of the theoretical and empirical literature of OCB, highlighted that the rapid proliferation of research on OCB has led to much theoretical confusion about the conceptual nature of the construct which ultimately poses troubling implications for its measurement in organisational research. These researchers have revealed that close to 30 different forms of citizenship behaviors have been developed since Smith, Organ, and Near (1983) coined the term 'OCB'. Among these behaviours, there were altruism, courtesy, sportsmanship, conscientiousness, civic duty (Organ, 1988), OCB-I and OCB-O (Williams & Anderson, 1991), helping co-workers (George & Brief, 1992), loyalty,

obedience, participation (Van Dyne et al., 1994), loyal boosterism, personal industry, individual initiative (Moorman & Blakely, 1995), interpersonal facilitation, job dedication (Van Scotter & Motowidlo, 1996), identification with the company, altruism toward colleagues, conscientiousness, interpersonal harmony, protecting company resources (Farh, Earley, & Lin, 1997), and helping and voice behaviours (Van Dyne & LePine, 1998). Organ et al. (2006) were also alarmed at the considerable number of OCB constructs and dimensions and urged future researchers about the need to reach a conceptual and empirical consensus regarding the actual nature of the construct to permit some consistent measurement attempt.

Spitzmuller et al. (2008), in another review, echoed concerns of the confusion associated with the high proliferation of OCB constructs in the literature. One concern suggests that most measures of OCB-related constructs were derived largely from factor analyses in which more attention was paid to their factorial or internal validity and less emphasis placed on the discriminant and convergent validity of these constructs among themselves. Moreover, Spitzmuller et al. (2008) alerted that there has been little research about the conceptual overlaps among these constructs, and the dimensionality of the OCB was still speculative. This concern is also amplified by conflicting research evidence (e.g. Coleman & Borman, 2000; LePine, Erez, & Johnson, 2002) which further precludes a definitive resolution on the construct's dimensionality. However, recent meta-analytic evidence (Ilies, Scott, & Judge, 2006; Ilies, Nahrgang, & Moregeson, 2007) highlighted that different dimensions of OCB vary in their relationships with several antecedents including positive affect, Big five personality traits, and leader-member exchange which provide some evidence that OCB is multidimensional in nature.

Overall, Spitzmuller et al. (2008) recognised the need to arrive at some resolution or consensus about a conceptually-based framework that can adequately organise the findings of past research and provide guidance for further research on OCB. A prominent framework suggested was one that distinguished OCB in terms of behaviours that target the organisation (OCB-O) and those that target the individual (OCB-I). There has been much empirical support for this chosen framework (e.g. Williams and Anderson, 1991). Essentially, much of the research, albeit variable in terms of the actual dimensions of OCB, does suggest that OCB can be classified under interpersonally-oriented and organisationally-oriented behaviours. For example, Smith et al. (1983) reported two dimensions of OCB: altruism and compliance. The former clearly points to behaviours that are aimed to directly benefit those who work in the organisation, and the latter serves to contribute to the general functioning of the organisation. Furthermore, other studied employee behaviours such as loyalty, obedience and participation (Van Dyne et al., 1994) have been placed under OCB-O, whereas helping behaviour (Van Dyne & LePine, 1998), social participation (Van Dyne et al., 1994), and interpersonal facilitation (Van Scotter & Motowidlo, 1996) have been classified under the OCB-I dimension. From a conceptual point of view, distinguishing OCBs in terms of behaviours intended to help individuals and behaviours intended to help the organisation is meaningful as such a distinction introduces key implications concerning the differential nomological networks of OCB-I and OCB-O (i.e. their relationships with various antecedents and consequences) in organisational research. The differential relationships of OCB-O and OCB-I with various attitudinal, dispositional, motivational, and contextual antecedents and with several individual and organisational consequences are also

empirically evident (Colquitt, Conlon, Wesson, Porter & Ng, 2001; Podsakoff & Mackenzie, 1997; Rioux & Penner, 2001; Van Dyne & Farmer, 2004).

Spitzmuller et al. (2008) suggested that "the OCB literature would currently benefit most from more basic comparisons of OCB based on the intended beneficiary of the behaviour" (p. 115). This approach is expected to lead to a better understanding of the differences and similarities in the antecedents and consequences of the basic categories of OCB: OCB-O and OCB-I.

2.2.5 Antecedents of OCBs. Spitzmuller et al. (2008) highlighted that several popular categories of antecedents of OCB have been investigated over the years: (1) dispositions, (2) attitudes, (3) motivations, (4) social relationships, and (5) contextual and task characteristics. Much of the early research had focused on dispositions, attitudes and motives, whereas later studies have focused on social relationships and contextual or organisational factors. However, it is worthy to mention here that much of this research was cross-sectional in nature. These key studies and their findings regarding the five categories of antecedents of OCB are discussed below.

The most heavily investigated dispositional antecedents of OCB were personality characteristics. In particular, agreeableness and conscientiousness from the Big five model of personality have emerged as salient predictors of various categories of OCB in a wide range of contexts (Barrick, Stewart, Neubert, & Mount, 1998; Organ & Ryan, 1995; Podsakoff et al., 2000). Agreeableness concerns an individual's level of friendliness and likeability, and it is plausible to argue that individuals high on agreeableness are predisposed to show willingness to support and assist co-workers, customers, colleagues, and superiors in the organisation.

Conscientiousness includes personal characteristics of self-discipline, perseverance, and dependability. Highly conscientious individuals tend to show good attendance, punctuality, compliance, and principled conduct in organisational settings. Conscientiousness is classified as one of the strongest and more consistent personality predictors of several forms of OCBs across a range of occupations and cultures in the literature (e.g. Konovsky & Organ, 1996; Kumar, Bakhshi, & Rani, 2009). In the Organ and Ryan's (1995) meta-analytic review, a population correlation of .30 was revealed between conscientiousness and generalized compliance suggesting the powerful role of personality in predicting OCB. More importantly, the differential relationships between various personality traits and OCB dimension have been noted. For example, LePine and Van Dyne (2001), in a laboratory study, found that conscientiousness had a stronger relationship with voice behaviours than with helping behaviours. However, agreeableness was positively correlated with helping, but negatively correlated with voice. Moreover, other meta-analytic and general research evidence suggests that agreeableness is a stronger predictor of OCB-I, whereas conscientiousness is a more powerful predictor of OCB-O (Ilies et al., 2006; Ilies, Fulmer, Spitzmuller & Johnson, 2009; Organ & Ryan, 1995).

Outside of Big five personality traits, other individual characteristics have also demonstrated differential effects on OCB-I and OCB-O. For example, Kamdar, McAllister and Turban (2006) revealed that the dispositional characteristic of perspective taking had a higher relationship with OCB-I than with OCB-O, whereas other reviews (Organ & Ryan, 1995; Podsakoff et al., 2000) revealed that positive affectivity was a significant predictor of OCB-I, and negative affectivity significantly predicted OCB-O. In more recent research,

Beauregard (2012) revealed that employees with high levels of adaptive perfectionism and general self-efficacy demonstrated higher levels of OCB, and personality characteristics explained OCB above and beyond social exchange variables. Although much of the research on dispositional antecedents provides crucial insights into the effects of personality traits on OCB, others (Organ et al., 2006) have claimed that "personality might influence manner or motive more than the substance of OCB" (p. 85). Hence, personality may explain the underlying reasons for a person engaging in OCB rather than explain the actual frequency and consistency of OCB itself.

The second category of antecedents – attitudes – has received a substantial amount of attention in the early literature on OCB. For example, job satisfaction (one of the most popular forms of job attitudes measured) has been argued to have stronger relations with OCB than with any other form of in-role performance criterion (Organ, 1988). This argument has been deeply rooted in the assumptions underlying social exchange theory. This theory underscores the norm of reciprocity in which an individual who perceives positive or fair outcomes and procedures in a job are likely to reward the organisation through the engagement of voluntary behaviours that are aimed to help individuals and organisations (Blau, 1964; Organ et al., 2006). Hence, employees who experience high levels of job satisfaction, positive affect and perceived fairness are likely to engage in OCB based on social exchange motives. Empirical research has been consistent with these arguments. For example, Organ and Ryan (1995) found that the combined estimates of the effects of job satisfaction and fairness on OCB were greater than those found in prior research (e.g. Iaffaldano & Muchinsky, 1985) where job satisfaction was correlated with traditional forms of performance. Affective commitment was

also found to have consistent, positive effects on OCB. These findings have also been shown to be consistent in a large number of studies and reviews (Colquitt et al., 2001; Konovsky & Organ, 1996; Ilies et al., 2006; Podsakoff et al., 2000). In particular, organisational commitment and perceptions of procedural justice were more strongly related to OCB-O, whereas interpersonal justice was more strongly associated with OCB-I (Colquitt et al., 2001). In another study by Zhang (2013), a high *job involvement* attitude was positively related to all dimensions of OCBs including altruism, courtesy, sportsmanship, conscientiousness, and civic duty. Recently, another cognitive-attitudinal variable – employee engagement – has emerged as an antecedent of OCB. Dalal, Baysinger, Brummel and LeBreton (2012) revealed that employee engagement, as well as positive affect, job satisfaction, and organisational commitment, was significantly and positively related to OCB. They concluded that employee engagement was the most important attitudinal predictor of OCB.

Thirdly, research on individual motivations as antecedents of OCB has been inspired by the views that the propensity to engage in voluntary behaviours at work is triggered largely by efforts to satisfy basic human needs (Rioux & Penner, 2001). Some researchers (e.g. Krebs, 1991) in this area have argued that certain forms of OCB are based on a blend of egoistic and altruistic motives and thus these behaviours ultimately benefit the performer, whereas others have contended that helping behaviours are exhibited to protect or express role identity and/or promote self-enhancement. The research on motivational antecedents however has been scant (Spitzmuller et al., 2008), where one of the most promising studies on the relationship between motives and OCB has been conducted by Rioux and Penner (2001). This research led to the development

of a three-factor framework of motives for engaging in OCB: prosocial motives (being motivated to help others), organisational concern (being motivated by a sense of pride and commitment to one's organisation), and impression management (being motivated by looking good to obtain rewards). Their research highlighted that only two of these three motives were significantly related to OCB, where organisational concern was much stronger in its association with organisationally-directed citizenship behaviours, and prosocial motives were stronger in predicting individually-directed citizenship behaviours. In spite of these results, impression management motives and their theorised relationship with OCB have gained immense popularity in other research (e.g. Bolino, 1999; Bolino, Varela, Bande & Turnley, 2006). However, these motives and their association with OCB are discussed in a later section of this review.

Fourthly, there has been a noticeable increase in scholarly interest and work on the role of social relationships in predicting OCB. Researchers (e.g. Bowler & Brass, 2006) have claimed that much work has neglected to consider the social environment as a major impetus for the development and maintenance of citizenship behaviours in organisations. Notwithstanding this concern, emerging research has demonstrated that leadership and social relationships have been powerful predictors of OCBs. For example, Podsakoff et al. (2000) found that supportive leadership behaviours and leader-member exchange were good predictors of OCB. In fact, the latter variable has emerged as a consistent predictor of individually-directed citizenship behaviour in past research (Kamdar & Van Dyne, 2007). In an earlier study, Farh, Podsakoff, and Organ (1990) found that leadership fairness explained significant variation in altruism but not compliance.

Overall, Podsakoff et al. (2000) noted that "the mechanisms through which these leader behaviors influence citizenship behaviors are not always clear…[s]ome of these behaviors…may have their primary effect on OCBs through the norm of reciprocity" (p. 552). It thus logical to posit that social exchange theory is a useful framework in understanding these relationships. Anderson and Williams (1996) highlighted that employees engage in more interpersonal citizenship when they experience good quality relationships with co-workers. Similarly, Bowler and Brass (2006) and Ng and Van Dyne (2005) have found that factors such as intensity of friendship, team member exchange, group cohesiveness, and cooperative group norms were positive predictors of OCB-I.

The final category of antecedents – contextual and task characteristics – has received a growing amount of research attention. In a review by Podsakoff et al. (2000), task-related variables such as task feedback, task routinisation, and intrinsically satisfying tasks have been found to be significantly related to OCBs. Moreover, Farh et al. (1990) found that task scope accounts for more variance in both altruistic and compliant behaviours than does job satisfaction. Motowidlo, Packard, and Manning (1986) also revealed that heavy task demands were negatively related to OCB-I, whereas job autonomy (control over tasks and work) was positively related to OCB generally. However, more general organisational factors such as organisational formalization and inflexibility were not promising predictors of OCB (Podsakoff et al., 2000). Chiu and Chen (2005) also revealed that job variety and job significance were positively related to OCB, and extrinsic job satisfaction also mediated these relationships. In the area of contextual job stressors, role stressors and job demands have also been examined (Spector & Fox, 2002) and found to predict OCBs

across organisations and job categories (Boerner, Dutschke & Wied, 2008; Lambert, Hogan, & Griffin, 2008). Moreover, Bragger, Rodriguez-Srednicki, Kutcher, Indovino and Rosner (2005) empirically demonstrated that work-family conflict, as a key stressor, negatively impacts on the performance of OCBs among teachers. In another study, Chiu and Tsai (2006) revealed that two dimensions of burnout (emotional exhaustion and diminished personal accomplishment) were negatively correlated with OCB. These authors further suggested that the relationships between OCB and burnout may be reciprocal such that "burnout might influence subsequent display of OCB, and this decreased level of OCB could lead to subsequent burnout" (p.528). These findings indeed have interesting implications for future OCB research, and they are especially relevant in the context of the current research.

2.2.6 Positive Consequences of OCBs*.* It has been argued, even in recent times, that "the consequences of organizational citizenship behavior have not been studied as extensively as the antecedents of citizenship" (Spitzmuller et al., 2008, p.114). This is surprising given the presence of strong conceptual rationale for the positive effect of OCB on overall organisational functioning (Podsakoff & Mackenzie, 1997). However, the limited research available has provided some important insights into the nature of the construct and its anticipated and observed benefits for individuals and organisations. Given the theorised and observed benefits of OCB in the literature, positive individual- and unit/organisational-level consequences of OCB are discussed here.

In terms of individual-level consequences, research has demonstrated that OCB has positive impacts for those who perform OCB and those who are the targets of the same

behaviour. For example, Mackenzie, Podsakoff, and Paine (1999) revealed that employees who engage in citizenship behaviors received significantly better performance ratings by their superiors. This finding has been supported by a number of massive reviews (Podsakoff et al. 2000; Organ et al., 2006) in which a bulk of research suggests that OCB does indeed influence managerial evaluations of performance and related decisions in various areas such as promotion recommendations (Parks & Sims, 1989) and salary/reward recommendations (Allen & Rush, 1998; Kiker & Motowidlo, 1999; Parks & Sims, 1989). Indeed, much theoretical rationale can be noted to explain these findings.

One explanation is rooted in the norms of reciprocity (Gouldner, 1960; Homans, 1961). Since citizenship behaviours are likely to be perceived by superiors as helpful and beneficial to members in the organisation as well as the entire organisation, superiors may feel obliged to reciprocate these 'positive contributions' by giving those who exhibit OCB more favourable performance assessments. Another theoretical explanation – implicit personality theory – notes that if a manager implicitly considers a very close association between OCB and overall performance, the manager is likely to include incidents of OCB among employees as part of the formal performance assessment criteria (Berman & Kenny, 1976). As a result, employees who frequently exhibit OCB are more likely to receive higher performance ratings. A third explanation rooted in behavioural distinctiveness and accessibility posits that managers often look for distinctive pieces of information in performance assessment, and given the unique nature of OCB, managers are likely to easily recall and appraise these behaviours during performance assessments (DeNisi, Cafferty & Meglino, 1984). A fourth explanation based on schema-

triggered processing strategies, similar to implicit personality theory discussed above, outlines that a manager is likely to categorise an employee as a 'prototypically good' employee due to observed positive features of OCB such as helping other workers, conscientiousness, and sportsmanship. Hence, employees are likely to obtain more positive evaluations from their superiors (Fiske, 1981, 1982). A related explanation is based on the view that OCB enhances a superior's liking for the OCB performer, and this liking subsequently affects the superior's assessment of the subordinate's overall performance. The above-mentioned conceptual explanations adequately and sufficiently explain the positive consequences of OCB on managerial evaluations of performance and related reward allocation decisions and they have provided a strong foundation on which much empirical research in this area has been built.

It must be noted here that although much of this research examining the individual-level consequences of OCB in this area of performance and reward allocations is indeed fruitful and relevant, the examination of the benefits of OCB for individuals cannot be restricted to these factors. OCBs have also been found to affect employee attitudes and well-being. For example, Bateman and Organ (1983), using a two-wave panel design, found that not only job satisfaction in an earlier period influenced OCB in a later period but also the reverse was equally plausible in that OCB measured at Time 1 had significant and positive effects on overall job satisfaction measured at Time 2. Others have noted that "OCB has a favourable effect on fellow employees' attitudes" (Tepper, Duffy, Hoobler, & Ensley, 2004, p.455) and these experiences enhance organisational loyalty and commitment among members in the organisations. Tepper et al. (2004) found that co-workers' OCB at Time 1 was positively related to organisational commitment at Time 2 and

was significantly and positively related to job satisfaction at Time 1 only. Moreover, co-workers' OCB was positively related to both job satisfaction and organisational commitment at Time 2 when abusive supervision was low, but it was negatively related to job satisfaction when abusive supervision was high. In a qualitative study (Oplatka, 2009) on OCB among teachers in Israel, it was revealed that teachers who perform OCB indicated that they enjoyed a high sense of self-fulfillment, and high levels enthusiasm and work satisfaction. In other research, positive extra-role organisational behaviours were found to be related to higher levels of employee well-being and positive mood (Glomb, Bhave, Miner, & Wall, 2011; Sonnentag & Grant, 2012), more positive self-evaluations (Van Willigen, 1998), personal development (Hanson, Larson, & Dworkin, 2003), and physical and mental health (Brown, Nesse, Vinojur, & Smith, 2003).

Other studies have examined the individual-level effects of OCBs on employee behavioural intentions and actual behaviours at work. Ladebo (2005) revealed that one form of OCB – loyalty behaviour – was inversely related to turnover intentions, and another form of OCB – employee participation – was inversely related to withdrawal behaviours (e.g. lateness/tardiness). In a large meta-analysis study (Podsakoff, Whiting, Podsakoff & Blume, 2009), OCB was found to be negatively related to several individual-level outcomes such as employee turnover intentions, actual turnover, and absenteeism. Employee job performance ratings were also found to be strongly and positively related to OCBs (Podsakoff et al., 2009).

Apart from the individual-level consequences, the organisational-level consequences of OCB have also received increasing levels of scholarly attention. A key feature in Organ's

initial definition of OCB suggested that OCB, in aggregate, promotes organisational effectiveness. Several conceptual reasons (Podsakoff, Ahearne & Mackenzie, 1997) have been proposed to highlight why OCB is likely to improve organisational effectiveness and include the following: (1) OCBs may enhance coworker productivity, (2) OCBs may enhance managerial productivity, (3) OCBs may free up resources for more productive purposes, (4) OCBs may reduce the need to devote scarce resources to purely maintenance functions, (5) OCBs may serve as an effective means of coordinating activities between team members and across work groups, (6) OCBs may enhance the organisation's ability to attract and retain the best people by making it a more attractive place to work, (7) OCBs may enhance the stability of organisational performance, (8) OCBs may enhance an organisation's ability to adapt to environmental changes, and (9) OCBs may enhance organisational effectiveness by creating social capital. These conceptual reasons have inspired an increasing number of research studies focusing on the effects of OCBs on various indicators of organisational effectiveness. Podsakoff and Mackenzie (1994) examined the effects of OCB on sales performance and found positive relationships between civic virtue, sportsmanship and this effectiveness outcome. Similarly, Podsakoff et al. (1997) revealed that helping behaviour and sportsmanship were significantly and positively related to the quantity of production, and helping behaviour was significantly and positively related to the quality of production. Moreover, Walz and Niehoff (2000) also found that helping behaviour was significantly and positively related to multiple indicators of effectiveness among a sample of restaurants such as operating efficiency, customer satisfaction and quality of performance. Podsakoff et al. (2000, 2009) revealed that OCBs

were positively related to productivity, efficiency, reduced costs, customer satisfaction, and was negatively related to unit-level turnover. These relationships were found to be stronger in longitudinal studies than in cross-sectional studies, providing some support for the causal effects of OCBs on these criteria of effectiveness.

Spitzmuller et al. (2008), in their review, noted that studies that differentiated between OCB-I and OCB-O have found inconsistent results concerning their consequences. For example, some studies reviewed (e.g., Podsakoff & Mackenzie, 1997) indicated that the relationship between OCB-I (helping) and performance may stronger than the relationships for civic virtue and sportsmanship (OCB-O) and performance, whereas others have found a significant negative relationship between helping (OCB-I) and sales performance (Podsakoff & MacKenzie, 1994). Podsakoff et al. (2009) claimed that "it is premature at this time to conclude that OCBOs and OCBIs have the same effects..." (p. 133). It is clear that much of variance in the outcomes of OCBs may also be linked to the diversity of operationalisations and models of OCBs used in the above-mentioned studies (Podsakoff et al., 2009). Very recently, Spitzmuller and Van Dyne (2012) argued that the positive consequences may also vary according to type of helping behaviors such as reactive versus proactive helping as well as the primary beneficiary: the individual, team, and organisation.

Overall, Spitzmuller et al. (2008) highlighted the need for further research to address these conflicting and unusual findings regarding the consequences of OCB-I and OCB-O. These authors also claimed that while most studies have focused on the effects of OCB on intended beneficiaries (individuals, groups, and organisations), "there is little research

on the consequences of performing OCB for those who perform OCB" (p.115). Hence, these authors made a call for increasing the study of individual-level consequences of OCB for OCB performers. As previously mentioned, research on prosocial behaviours in other settings has revealed that individuals who engage in these behaviours experience higher positive affect (Piliavin & Charng, 1990), more favourable self-evaluations and life satisfaction (Van Willigen, 1998; Yogev & Ronen, 1982), and better physical and mental health (Penner, Dovidio, Piliavin, & Schroeder, 2005; Thoits & Hewitt, 2001). Spitzmuller et al. (2008) recommended that further research should seek to examine the consequences of OCB for individuals who perform this behaviour in terms of their work attitudes, overall well-being, and work-related stress (e.g. work-family conflict, job stress and role overload). Since these consequences may not be entirely positive for individuals, and future research is recommended to explore potentially negative individual-level consequences of OCB, using more complex and causal models (Spitzmuller & Van Dyne, 2012). Table 1 shows a summary list of popular antecedents and consequences of OCBs based on arguments and findings underlying the 'positive OCB' perspective.

Table 1:

The Perspective on Positive OCBs

Popular Antecedents	Popular Consequences
Dispositions: agreeableness, conscientiousness, perspective-taking, positive affectivity.	**Individual:** positive reward allocations, higher performance ratings, higher job satisfaction, higher organisational commitment, lower withdrawal behaviours.
Attitudes: job satisfaction, organisational commitment, organisational justice, job involvement, employee engagement.	**Organisational:** increased organisational productivity, increased customer satisfaction, decreased unit-level turnover, increased organisational profits.
Motivations: prosocial, organisational concern, impression management motives.	
Social Relationships: supportive leadership behaviours, leader-member exchange, leadership fairness, relationships with co-workers.	
Contextual/Task Characteristics: task scope, task feedback, task routinisation, organisational formalisation, role stressors, burnout.	

2.3 A Review of the 'Negative Side' of Organisational Citizenship Behaviours

The second part of this literature review focuses on the much neglected 'negative' side of OCB. Although not as extensive as the 'positive' side given the limited theorising and research on this end of the fence, this section offers some degree of intellectual balance to the study of OCB. Specifically, it introduces key perspectives and research on the negative side of OCB, the often neglected (but emerging) antecedents of OCB in organisations, and its potentially negative consequences for organisations and employees. Several theoretical perspectives and recent empirical research are relied upon to provide the necessary justification for claims made in this section.

2.3.1 Alternative Perspectives of the Negative Side of OCBs. Up to this point, this thesis has discussed literature on OCB in a positive light in terms of its nature, antecedents, and consequences. The earlier definitions of OCB (e.g. Organ, 1988, 1997) have presented this concept in a positive manner, and have implied that (1) OCB stems from positive motives or antecedents (whether dispositional, attitudinal or contextual), (2) OCB positively contributes to organisational effectiveness and efficiency, and (3) OCB ultimately benefits employees in organisations. However, alternative perspectives and supporting research, albeit sparse, have emerged to suggest otherwise (e.g. Bolino et al., 2004; Bolino & Turnley, 2005). These perspectives are briefly listed and summarised in Table 2. Overall, these theoretical perspectives and positions, largely based on empirical work, point to the alternative dark side of OCBs which acknowledge that these behaviours are (1) not always sincere in nature, (2) not always a result of positive

motives or antecedents, and (3) not always leading to positive consequences. These perspectives together provide a general conceptual outlook that balances the debate on various aspects of OCBs in terms of its nature, antecedents, and consequences. They provide strong theoretical rationale and insight into the potentially negative side of OCBs, drawing direct links to self-serving motives, increased stress, interpersonal conflict, negative job attitudes and poor health and well-being. Indeed, these perspectives on the dark side of OCBs have been supported by conflicting findings that have emerged within the study of OCB and its relationship with CWB. Notwithstanding the earlier works which demonstrated that OCB and CWB function on opposite sides of the same domain (fostering the 'good OCB' versus 'bad CWB' debate), there have been an increasing number of recent research studies and conceptual papers which have revealed that OCB and CWB are nonbipolar (Coyne, Gentile, Born, Ersoy & Vakola, 2012; Dalal, 2005) and that these two constructs, in certain circumstances, exhibit a positive relationship with each other (Spector & Fox, 2010; Fox, Spector, Goh, Bruursema & Kessler, 2012). These findings and conclusions have led to the view that the same individuals may exhibit both OCB and CWB in response to the same situation or direct these behaviours at the same individual targets, promoting the popular oxymoron of the 'deviant citizen'. Hence, good citizens have the potential to commit evil acts.

The following sections of this review cover, in more detail, the 'dark side' perspectives of OCBs, associated empirical findings and their underlying implications for the nature, antecedents and consequences of OCBs for individuals and organisations.

Table 2:

Perspectives on 'Dark or Negative' OCB

Source	Theoretical Construct and Perspective	Key Assumptions/Findings
- Bergeron (2007) - Bergeron et al. (2013)	Resource-allocation framework	Employees engaging in OCB experience time constraints which limit their task performance behaviours. Employees who engage in more OCB had lower promotional prospects and salary increases than employees who exhibit less OCB.
- Bolino et al. (2004)	Self-serving motives and negative consequences	OCBs are likely to emerge from self-serving motives (rather than altruistic ones). OCBs are likely to lead to higher stress, resentment and interpersonal conflict in organisations.
- Bolino et al. (2010)	Citizenship pressure	Citizenship pressure (where employees feel pressured to engage in OCB) was found to be positively related to work-family conflict, job stress and turnover intentions

Table 2 continued:

Perspectives on 'Dark or Negative' OCB

Source	Theoretical Construct and Perspective	Key Assumptions/ Findings
- Vigoda-Gadot (2006, 2007)	Compulsory citizenship behaviour (CCB)	CCB was positively related to job stress, turnover intentions, negligent behaviour, and burnout.
- Halbeslebe n et al. (2009)	Conservation of resources theory	OCB was positively related to work-family conflict.
- Van Dyne and Ellis (2004)	Job Creep Notion	The job creep notion suggests that employees who engage in OCB are likely to receive negative treatment and experience interpersonal conflict at work by others.

2.3.2 Alternative Antecedents: Underlying Motives for Engaging in OCB. Bolino et al. (2004) noted that earlier research described individuals who engage in OCB as 'good soldiers' who are dutiful, compliant and loyal. This view links OCB to the notion of prosocial behaviour that is intended to help individuals and the entire organisation. OCB represented an expression of altruistic, 'other-oriented' behaviour which seeks to benefit something or someone other than the performer of the behaviour. Consistent with this positive depiction of OCB, researchers have looked extensively at "antecedents of OCB that are consistent with the assumption that citizenship behaviors are motivated by a desire to help others or reciprocate the positive treatment received from the organisation" (Bolino et al.,

2004, p. 235). These antecedents included affective or attitudinal states (job satisfaction and organisational commitment), individual difference variables (propensity to trust, agreeableness, positive affectivity, organisation-based self-esteem), and situational factors (leader supportiveness, group cohesiveness, etc). Hence, a large body of research examining the antecedents of OCB assumes that OCB stems from positive forces within the individual (mood and empathy), their work environments (supportiveness and cohesiveness), or their organisations (job satisfaction and psychological contract fulfilment). However, much of this research on OCB and its antecedents has largely neglected alternative motives or factors that are likely to influence these behaviours. Bolino et al. (2004) highlighted a number of potential antecedents: (1) self-serving motives, (2) transgression, (3) desire to make others look bad, (4) dissatisfaction with one's in-role duties and one's personal life. These are thoroughly discussed below.

Firstly, self-serving motives are now only receiving academic attention in the literature as potential reasons for individuals engaging in OCB. Research has shown a fair degree of overlap between citizenship behaviours and impression-management behaviours (e.g. Bolino, 1999, Eastman, 1994; Rioux & Penner, 2001) which suggests that some people who engage in OCB may be driven less by altruistic motives and more by self-enhancement motives. A qualitative study by Snell and Wong (2007) revealed that potential motives for OCB can be classified into two general categories: pro-organisational motives and citizenship-related impression-management motives. The latter set of motives concerns employees who engage in OCB primarily due to self-serving motives which seek to promote a positive impression to their superiors. For example, a colleague who offers assistance to other co-workers

only in the presence of superiors is an example of OCB attributed to impression management motives. Researchers (e.g. Bolino, 1999; Bolino et al., 2004) have argued that organisational politics have much to play in the relationship between impression-management and the performance of organisational citizenship behaviours, as impression-management tactics are increased in response to political environments which reward or foster such behaviours. There has been some research (e.g. Haworth & Levy, 2001) that suggests that employees are likely to engage in OCB when they believe that they will receive rewards from superiors. Moreover, Hui, Lam, and Law (2000) found that individuals who saw OCB as instrumental in their advancement demonstrate higher levels of OCB before a promotion decision, but they were more likely to reduce OCB after they have received their promotions than were other employees. Similarly, Yun, Takeuchi and Liu (2007) also revealed that employee self-enhancement motives were significantly and positively related to the performance of OCB-O but not OCB-I. Very recently, Kim, Van Dyne, Kamdar and Johnson (2013) examined employee motives as predictors of OCB and revealed that prosocial, impression management, and organisational concern motives significantly predicted OCB among employees.

Another potential antecedent of citizenship behaviours is referred to as transgression. The view behind this antecedent posits that employees engage in OCB to reduce guilt or negative emotions arising from prior transgressions against the organisation or its members. Although there has been no research to date that has examined the relationship between transgressions and OCB, early research has found considerable evidence that transgressions and feelings of guilt contribute to prosocial behaviours in general (Cialdini, Darby & Vincent, 1973;

Freedman, Wallington, & Bless, 1967; Rawlings, 1968). Clearly, theories of altruism in social psychology have attributed altruistic behaviours to guilt reduction and repair of self-image (Batson & Shaw, 1991). Hence, it is likely to assume that employees may seek to work overtime and assist others with other projects and tasks at work due to guilty feelings relating to tardiness, absenteeism, and/or the abuse of company time for personal uses. Fox and Freeman (2011) claimed that OCBs may be performed as a result of prior acts of counterproductive work behaviours (CWBs). The performance of OCBs serves as a 'mask' or 'redemption act' to override the effects of these past transgressions or negative workplace behaviours. For example, based on equity principle (Adams, 1965), an employee who behaves negatively towards another through CWB may be motivated to repair their past 'unacceptable behaviours' by engaging in pro-organisational or helpful behaviours towards that employee (Fox and Freeman, 2011).

Thirdly, Gilbert and Silvera (1996) and Shepperd and Arkin (1991) also found that employees may engage in helping behaviours to spoil the image of the intended target. Bolino et al. (2004) noted that 'over-helping' co-workers may create the impression among superiors that those co-workers are less competent in their job role or position. This is consistent with Snell and Wong (2007) who revealed a pseudo-form of OCB in which an employee may seek to sabotage the work of another co-worker while pretending to provide him/her with help or guidance. In another study, Beehr, Bowling and Bennett (2010) examined the negative effects of helping among university employees and found that three types of supportive helping behaviours were likely to worsen the physical and psychological health of intended targets. These helping behaviours included (1) interactions that drew the targets' attention to the stress in

the workplace, (2) help that makes the individual feels inadequate or incompetent, and (3) help that is unwanted.

A final set of motives for engaging in OCB concerns an employee's dissatisfaction with his/her in-role responsibilities or personal life. The rationale suggests that employees seek to 'escape' their dissatisfaction by engaging in tasks and duties that preclude their involvement in normal duties or in personal responsibilities at home (Bolino et al., 2004). The engagement of OCBs then serves to help employees cope with or manage situations in which they may experience loneliness or conflict in some context. Fox and Freeman (2011) suggested that employees' performance of OCBs may be linked to the need to cope with feelings of boredom that may occur during the performance of in-role tasks. For example, employees may seek to engage in novel OCBs to avoid doing boring tasks at work but to enrich or fulfil an underlying desire to be innovative, unique or impactful in the organisation.

Overall, these categories of antecedents provide a fresh look at the nature and reasons for employees engaging in OCBs at work. Among these categories, the most heavily researched, to date, are self-serving motives. Bolino et al. (2004) have claimed that self-serving motives play a key antecedent role in facilitating OCBs in organisations, in contrast to other forms of antecedents traditionally reviewed. More importantly, these authors have also concluded that "...OCBs might stem from self-serving motives, may negatively affect organizational functioning, and could have negative implications for employees" (p. 230). Hence, these motives and other related 'negative' antecedents of OCBs are likely to translate to OCBs that promote negative outcomes or consequences in various organisational contexts and situations.

2.3.3 Negative Consequences of OCB. The consequences of OCB have largely been theorised and empirically observed as positive for both organisations and its individual members. However, others (e.g. Bolino et al., 2004) claimed that OCB, in some instances, can be detrimental to organisations and individuals alike.

In terms of organisational consequences, Bolino et al. (2004) have outlined that although much research has shown that OCB contributes positively to organisational effectiveness, some existing evidence suggests that this is not always the case. For example, Podsakoff and Mackenzie (1994) revealed that helping behaviors have a negative effect on sales performance among insurance agents, suggesting that higher levels of OCB-I were associated with lower levels of performance. In another study, Podsakoff et al. (1997) did not find any significant effect of civic virtue on either quantity or quality of production. Walz and Niehoff (2000) found that OCBs were not a significant predictor of financial performance, and in particular sportsmanship was unrelated to seven and civic virtue to eight of nine indicators of organisational effectiveness. Several arguments have arisen regarding the non-positive impact of OCB on organisational effectiveness.

One argument noted was that OCB in some instances may occur at the expense of in-role behaviours (Bolino et al., 2004). Using the resource allocation framework, Bergeron (2007) asserted that there are situations in which there is a great trade-off between OCB and task performance as employees who constantly engage in OCB limit their resources (e.g. time and energy) to pursue their actual in-role responsibilities at work. Bergeron (2007) noted that "resource allocation forces a choice such that most individuals will focus on one activity at the expense of the other" (p. 1084). Hence, limited time is a critical

feature of workplace reality as employees cannot perform both OCB and task performance at equal levels. The framework suggests that engaging in OCB may be detrimental to normal in-role performance as the former can 'take away' the time that is necessary for the performance of the latter. A laboratory study (Allen & Rush, 1998) revealed a negative correlation between OCB and task performance in which participants had limited time to complete a particular task, and this was further supported by a field study (Mackenzie et al., 1999). In a very recent study, Bergeron, Shipp, Rosen and Furst (2013) revealed that more time spent on OCB was associated with lower salary increases, slower organisational advancement, and lower promotion prospects. On the basis of their findings, these authors concluded that OCBs detract from task performance and they also hamper positive career outcomes in the organisation.

Another explanation regarding the negative impact of OCB on organisational effectiveness concerns the view that there is a difference between the willingness (and quantity of OCBs) and the quality of OCBs. Employees who are willing to and frequently engage in high levels of OCB cannot contribute to organisational effectiveness, if the quality of these OCBs is poor. It seems logical to argue that if an employee volunteers to perform a particular task outside of his/her job description but lacks the necessary skills and knowledge to complete this task, he or she may be causing more harm than good to the organisation. Thus, Bolino et al. (2004) noted that in these situations in which employees are neither competent nor trained to perform the specific OCB, the relationship between their OCB and organisational effectiveness is likely to be negative. However, the issue of high-quality OCB has been neglected in prior research, as the existing body of OCB research has focused

mainly on the quantity/frequency of these behaviours performed.

Another explanation for the potentially negative consequences of OCB for organisational effectiveness is rooted in the nature of the motives underlying the performance of OCB. As mentioned in the previous section, self-serving motives are described as key antecedents that are likely to promote OCBs that can retard or negatively impact organisational effectiveness and performance (Bolino, 1999; Bolino et al., 2004). As result, there is an apparent link between motives of OCBs and their consequences for organisations. Depending on the underlying motives of OCBs, the consequences may either be positive or detrimental. Recall the study of Snell and Wong (2007) who revealed the existence of several forms of OCB driven by impression-management that are likely to hamper organisational effectiveness. Bolino (1999) highlighted that the motive behind OCB is important "because motivation is likely to adversely affect the impact of OCBs on organisations/work group effectiveness" (p.96). Two reasons were given for this assumption. Firstly, if employees engage in OCB based on impression-management motives, they are less able to attend to the primary job task at hand and task performance is ultimately impaired. Secondly, individuals motivated by self-interest or impression management motives consciously expend less effort or energy in performing OCB and thus the quality of OCB (as opposed to the quantity) is lower compared to an employee driven by genuine or altruistic motives (Bolino, 1999). Essentially, efforts to build one's own self-image through the performance of OCBs are likely to result in number of negative outcomes (e.g. conflict, envy, poor interpersonal relationships, low trust, etc) which in turn can negatively impact on overall organisational effectiveness and efficiency (Bolino, 1999; Bolino

et al., 2004). In a research study examining OCBs and underlying motives, Banki (2010) revealed that OCBs driven by impression management motives had negative effects on group cohesion and performance. It was argued that organisation members who attribute OCB to the self-serving motives of the performer are likely to react negatively towards the same performer.

Bolino et al. (2004) noted that the consequences of OCB for individuals can be equally detrimental. Firstly, they claimed that OCB can create interpersonal tension, conflict and resentment among employees at work. For example, Fisher, Nadler, and Whitcher-Alagna (1982) have shown that individuals who often receive help from others express strong resentment due to the fact that the helping behaviour leads to increased levels of guilt, doubt about one's own competencies, and decreased levels of personal freedom and self-esteem. The perspective supporting the negative consequences of OCB for individuals' interpersonal relationships at work has been reactance theory (or the job creep notion). Based on this theory, Van Dyne and Ellis (2004) claimed that work peers are likely to react negatively to the OCB performer (i.e. the job creep) and the organisation as a whole. For instance, some employees may feel underappreciated (and hence under rewarded) by superiors who value (or overvalue) other co-workers who go beyond what is normally expected in their jobs. Secondly, peers may develop a negative self-evaluation when they compare themselves with employees who engage in additional role responsibilities. This situation results in feelings of self-deprecation, incompetence and underachievement. Beehr et al. (2010) have revealed that certain helping behaviours (e.g. helping in which the target believes his or her competence is likely to be questioned) can be more detrimental

than positive. In other instances, these employees are likely to develop a reduced sense of job security and fulfilment at work. Bolino et al. (2004) noted that these negative peer group feelings are likely to encourage negative workplace behaviours against the organisation (i.e. sabotage) and/or against the OCB performer (i.e. isolation or rejection of job creep). These negative peer group behaviours are thus likely to adversely affect the OCB performer in the form of job dissatisfaction, reduced in-role and citizenship behaviours, withdrawal behaviours, and turnover.

In light of these findings, it is worthy to mention here that authors on OCBs (e.g. Spitzmuller et al., 2008) have highlighted that more research is needed to examine the negative consequences of OCBs for individuals who actually perform these behaviours (and not only on the consequences for intended beneficiaries). For example, Bolino et al. (2004) claimed that employees who frequently engage in OCB may find it difficult, over time, to distinguish between in-role and citizenship behaviours, which leads to increasing levels of role ambiguity and conflict. Moreover, these employees are likely to experience high levels of job dissatisfaction and work-related stress as a result of their performance of OCB. In line with the theoretical notion of the *job creep* (i.e. an employee who overfulfils his or her obligations at work through the performance of OCB), job creeps blur the lines between in-role and citizenship behaviours as these employees experience ongoing pressure to continually perform citizenship behaviours to meet growing and demanding expectations among superiors in the organisation (Van Dyne & Ellis, 2004). Due to the ongoing pressure to perform OCB, these employees may experience reduced personal freedom, lower commitment, higher stress, and increased burnout.

Empirical research on the negative effects of OCB on employee attitudes and well-being has been slowly emerging. Bolino and Turnley (2005) revealed that higher levels of OCB (i.e. individual initiative) were associated with higher levels of job stress, role overload, and work-family conflict. These authors have claimed that organisations are pressuring employees to perform OCB by putting in longer hours, being more accessible, and exerting more effort on the job. This notion of escalating citizenship has also been explored by Bolino et al. (2010a) who found that higher levels of citizenship pressure (i.e. a specific job demand in which employees feel pressured to perform OCBs) were related to higher levels of work-family conflict, work-leisure conflict, job stress and turnover intentions. The concept of citizenship pressure has largely been rooted in the previously discussed phenomenon of the *job creep* (Van Dyne & Ellis, 2004). Clearly, employees engaging in high OCB place tremendous demands on their personal and professional lives which ultimately interfere with work-family life balance, increase level of work stress and exhaustion, and decrease the quality of health and well-being among these employees (Bolino & Turnley, 2005). Other empirical research (Hannam & Jimmieson, 2002; Oplatka, 2009) revealed similar findings in which teachers who engage in OCB at their schools experience a range of negative outcomes such as increased work-family conflict, stress and burnout. Bolino, Valcea and Harvey (2010b) theorised that encouraging proactive behaviours in organisations, in some instances, can lead to higher levels of work stress and conflict between proactive and less proactive workers. Based on conservation of resources theory, they argued proactive behaviours (like OCBs) deplete resources such as time and mental energy and, hence, a variety of stressors and strain outcomes are likely to emerge. Similarly,

Halbesleben, Harvey and Bolino (2009), based on the same theory, revealed that engaged workers performed higher levels of OCBs which in turn led to higher levels of work-family conflict.

Vigoda-Gadot's (2006) recent notion of compulsory citizenship behaviours suggests instances in which OCBs are compulsory and destructive rather than voluntary and positive. The theory outlines that good citizenship behaviours and their voluntary feature are often hijacked by managers who seek to exploit and abuse employees' good will to achieve their organisational goals. Employees are pressured to perform these compulsory citizenship behaviours, at any costs. Vigoda-Gadot (2007) further revealed in a study of Israeli teachers that the majority of teachers surveyed reported strong pressure to engage in OCB and ultimately experienced high levels of job stress, organisational politics, intentions to leave, and burnout.

Spector & Fox (2010) claimed that some behaviours that go beyond job requirements (thus might be classified as OCB) are not always genuine but emerge as a response to strong pressures or powerful actors at work. They argued that depending on the individual's attributions about the causes of the situations that elicit 'OCB', an individual may follow the OCB with negative emotions, stress, and even CWB. For example, an employee who engages in OCBs in response to organisational constraints (e.g. a poorly performing coworker) is likely to experience feelings of inequity, frustration and resentment, resulting in "CWB directed against the coworker, depending on interpretations of the causes of the situation" (Fox & Freeman, 2011, p. 160). Moreover, these authors acknowledged that given OCB has the potential to be stressful based on prior research (Bolino & Turnley, 2005), it is expected that as OCB increases stressors, the more likely CWB emerges as a behavioural strain response to these stressors. These claims

were empirically validated by Fox et al. (2012) in which positive relationships between OCB and CWB, and stressors and OCB were revealed. Specifically, organisational constraints, negative emotions, and interpersonal conflict were correlated positively with both OCB and CWB, disconfirming conventional views that OCB and CWB are bipolar or operate at opposite sides of the spectrum. The notion of the *deviant citizen* suggests the possibility that OCB performers have the potential to engage in CWB under certain organisational or contextual conditions. Overall, Fox et al. (2012) concluded that future research should focus on determining the specific or exact conditions or circumstances under which OCB and CWB (and other forms of strain) may be positively or negatively related based on assessments of internal and external moderating variables.

In a very recent paper, Bolino, Klotz, Turnley and Harvey (2012) summarised a variety of themes across a number of studies that examined the personal costs of OCBs for individual employees including research on citizenship pressure (Bolino et al., 2010), resource allocation framework (Bergeron et al., 2013), job creep notion (Van Dyne & Ellis, 2004), and compulsory citizenship behaviour (Vigoda-Gadot, 2006, 2007). Based on their review, they suggested that additional research and strong theorising are required in the area of OCBs and their consequences in order to examine the ways in which OCBs may be positive or negative to individuals and organisations. Drawing from this line of reasoning, a very recent study by Somech and Drach-Zahavy (2013) sought to examine the longitudinal effects of OCB on job strain (measured by a combined measure of physical and psychological ill-health indicators) and the conditions under which OCB may be detrimental or beneficial to employees. These authors revealed that (1) OCB was positively related to role conflict, role

overload, and role ambiguity, and (2) under low leader support and participative decision-making, OCB has stronger, negative effects on job strain, but these effects were much weaker when leader support and participative decision-making were high. This study has a number of implications regarding the conditions or circumstances under which OCB may exhibit positive or negative effects on employees' well-being given their varied perceptions of the psychosocial work environment. It also invites a number of intriguing theoretical considerations that are central to the present thesis and are subject for later discussion.

In light of the theory and research discussed above on the negative side of OCB, it is not surprising that most authors (e.g. Bolino et al., 2004; Spitzmuller et al., 2008) have suggested that further research must seek to contribute to the existing but limited body of research on the negative consequences of OCB. In particular, research on the consequences of OCB for individuals performing this behaviour including employee attitudes, stress and well-being is very sparse and in need of further empirical attention (Bolino & Turnley, 2005; Bolino et al., 2012). Table 3 provides a list of popular antecedents and consequences of OCBs based on the context of 'the negative OCB perspective' arguments.

In line with Spitzmuller et al. (2008), the next few sections of this review present a comprehensive theoretical rationale for the proposed conceptual model depicting the consequences of OCB for individuals performing the behaviour and provide key points of justification for various elements in the model.

Table 3:

Summary of Negative Perspective of OCB

Popular Antecedents	Popular Consequences
Self-serving motives: impression management and self-interest become key reasons for engagement in OCBs.	**Individual:** Resentment from co-workers, weakened interpersonal relationships, high dissatisfaction at work, withdrawal behaviours, role stress, work-family conflict, reduced well-being and increased burnout.
Transgression: Feelings of guilt lead to increase in OCBs.	**Organisational:** Reduced sales performance reduced task performance, poor quality output, low productivity, poor organisational climate, and low organisational (industrial) harmony.
Spoiling Image of Others: Some employees may engage in OCBs to hurt the image of their target or bring into question his/her competence/role/value in the organisation.	
Dissatisfaction with in-role tasks or personal life: Some employees engage in OCBs to escape various dissatisfying aspects of their life at home or work.	

2.4 Key Theoretical Frameworks Underlying a Conceptual Model of the Individual-level Consequences of OCB

2.4.1 Introduction

The study seeks to propose a new conceptual model depicting the effects of OCBs on several individual-level outcomes. A necessary expectation behind testing new conceptual models concerns the availability and application of existing theoretical models and empirical evidence to support and validate various hypothesised links in these new models. Existing theory and evidence provide relevant justification and rationale for the development of models that seek to extend a particular school of thought and/or subject area. Hence, the role of this section of the review is to provide adequate justification for the development of a new conceptual model advanced in this research. It relies on the presentation and evaluation of existing theories in the area of work and organisational psychology and organisational behaviour to help extract critical areas that drive the new conceptual model. Several guiding theoretical frameworks and perspectives are worthy of discussion here: *Conservation of Resources (COR) Theory, Job-Demand-Control-Support Model* (JDCS model)/*Job Demands-Resources Model (JDR* model), and *Effort-Reward Imbalance Model* (ERI model).

2.4.2 The COR Theory. The COR theory posits that individuals are driven to acquire and conserve resources (Hobfoll, 1988, 1998). It also suggests that individuals are threatened by the actual or potential loss of these resources. Resources represent key factors that people personally value and include such things as conditions (e.g. employment, seniority, tenure, etc), personal characteristics (e.g., self-esteem), and energies (e.g. time, money and knowledge).

According to a basic tenet of the theory, stress emanates from either (1) the threat of a net loss of resources, (2) the net loss of resources, or (3) a lack of resource gain following the investment of resources (Hobfoll, 1989). Hence, stress represents the reactions to the environment due to perceived or actual loss of these resources. Another basic tenet of the theory suggests that the work environment usually poses threats to or causes a depletion of these resources (Hobfoll & Shirom, 2001). For example, it is possible that certain environmental circumstances at work may threaten employees' job security, self-esteem, and salary, among other things.

The COR theory postulates how individuals behave or act when confronted by stressful circumstances and when not confronted by stressful circumstances (Westman, Hobfoll, Chen, Davidson, & Laski, 2004). An individual under stressful conditions is likely to engage in behaviours which seek to minimise the net loss of valued resources (e.g. one may reduce extra-role investments/behaviour). However, if an individual is not confronted with stressors, the individual strives to develop surpluses of resources in order to offset the likelihood of future losses (e.g. one may increase extra-role investments/behaviour). Generally, the main aim is for the individual to protect and preserve these limited resources and strategically engage in behaviours which maximises their availability and efficacy (Hobfoll, 1989). This theoretical framework has been a subject of numerous empirical investigations in areas of stress, burnout, and personal job resources. For example, recent studies have established the powerful application of COR by examining the relationships between various job-related demands and physical and psychological health (Bono, Glomb, Shen, Kim, & Koch, 2012;

Demerouti, Bakker & Fried, 2012; Hakanen, Bakker, & Schaufeli, 2006).

COR theory can be viewed as a very useful theoretical framework for explaining the notion of OCB and its links to individual-level outcomes such as performance and health. Resource conservation, an assumption of COR, highlights that individuals under stress are likely to reduce levels of OCBs because engaging in OCBs depletes existing resources. The depletion of existing resources through the engagement of OCBs is thus likely to induce higher levels of stress and strains (i.e. negative emotional, psychological and physical states). Bolino et al. (2010b) claimed that organisational proactive behaviours (e.g. OCBs) are likely sources of stress because individuals go beyond what is naturally required and their various psychological and physical resources (e.g. time and mental energy) are impacted negatively. These authors also hypothesised that "to the extent that proactive behaviours deplete resources, engaging in such actions should contribute to stress" (p. 330). In a recent study, Ng and Feldman (2012) suggested that participation in employee voice, a specific form of OCB, is likely to take away from necessary limited resources, especially when stress is present. Moreover, Bolino and Turnley (2005) confirmed that employees engaging in individual initiative were likely to experience higher personal costs such as increased role overload, stress, and work-family conflict.

Furthermore, the concepts of state engagement and multiple role involvement are critical to understanding the theoretical ties between COR theory, OCBs, and individual-level outcomes (Halbesleben et al., 2009). State engagement concerns the extent to which individuals are highly engaged, motivated, and energetic to perform their job tasks at work. One crucial assumption of this concept is that individuals with

high state engagement have high levels of work-related resources, and these resources are often reinvested back into their job by performing exceptionally well or engaging in OCBs (i.e. multiple role involvement). The notion of multiple role involvement can be rooted in the scarcity paradigm. The scarcity paradigm suggests that the involvement in multiple roles at work leads to "competing claims on the limited and finite resources of an employee's time and energy" (Halbesleben et al., 2009, p. 1453). Persons with high levels of state engagement, over a period of time, have fewer resources available to use in other areas of work or at home with their families. Hence, "people who are highly engaged in their work are more likely to have difficulty balancing the demands of multiple roles" (Halbesleben et al., 2009, p. 1452). For example, Dierdorff and Ellington (2008) found that interdependence and responsibility for others explained a significant proportion of variation in work-family conflict, and noted that employees who faced a number of multiple role demands through frequent interactions with others and managing or accounting for others at work experienced the highest levels of work-family conflict. A similar study (Halbesleben et al., 2009) revealed that higher levels of state engagement led to higher OCBs, which in turn, led to higher work interference with family. Other studies have shown that employees who take on additional job activities and responsibilities or who engage in boundary spanning activities experience greater levels of role stress and burnout partly due to depleted time and mental energy levels (Bolino et al., 2010a; Bolino & Turnley, 2005; Stamper & Johlke, 2003). Moreover, OCBs, in certain situations, are likely to increase job stress because employees who perform OCBs to overcome organisational constraints (e.g. to address work process

problems or help out poorly performing co-workers) perceived these situations as demanding (Fox & Freeman, 2011; Fox et al., 2012). These demands, in turn, result in a variety of strain responses including physical, psychological and even behavioural outcomes like CWB. These claims have been linked to an emerging attributional theory of extra-role behaviours at work (Spector & Fox, 2010) regarding the causes of demands that elicit OCBs. For example, OCB performing employees who perceive situations eliciting OCBs as unfair and/or avoidable (i.e. due to feelings of being compelled to perform OCB, coworker lack of performance, social loafing or organisational constraints) are much more likely to exhibit more negative emotions and attitudes, higher stress, and a higher tendency to engage in counterproductive behaviours at work.

Generally, these studies demonstrate the possible negative personal consequences of extra-role behaviours or OCBs for individuals, and also reinforce the validity of the COR theory as a potentially valuable theoretical framework for this research.

2.4.3 The JDCS and JDR Models. The JDCS model depicts the influence of job demands (stressors) on health outcomes (i.e. physical and mental health) moderated by the effects of job control and social support (De Lange, Taris, Kompier, Houtman, & Bongers; Karasek, 1979). Job demands are psychological stressors that have the potential to contribute to the development of strain. Psychological demands concern the critical characteristics of the work environment which includes high time pressures, high pace of work, heavy workload, and high role conflict. Job control concerns an individual's ability to control his or her work tasks and immediate work environment, whereas social support involves the extent to which members of the organisation provide the

necessary resources to help employees cope with (i.e. handle) daily job activities and demands. According to the iso-strain hypothesis underlying this model, the most adverse health effects occur under the conditions of high job demands, low control and low social support. Another important assumption underlying this theory posits that perceived control (e.g. job autonomy) and social support seek to buffer the negative effects of job stressors on health outcomes. This buffer hypothesis suggests that in situations under high job control and social support, high job demands produce negligible or non-significant effects on worker health. Much empirical support has been found for the individual main effects of the model but less support was found for interactive effects of control and support on health outcomes (De Lange et al., 2003; Melamed, Kushnir & Meir, 1991; Van der Doef & Maes, 1998). However, authors (e.g. Melamed et al., 1991) have blamed rare interactive effect findings on inadequate measurement of the variables. The job demands-resources (JD-R) model (Bakker, Demerouti, & Verbeke, 2004; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) sought to overcome some of the limitations of JDCS model by extending the number of demands and resources variables examined.

In the JD-R model, a wider variety of physical, psychological, social, organisational demands and job resources are discussed. The aim of job resources in this model is to reduce the psychological costs of job demands as well as stimulate personal growth and learning. Proponents of this model (Bakker et al., 2004) contend that job resources can serve to buffer the effects of job demands on a range of strain outcomes, and the most important resources include those that permit the employee to predict, understand and control aspects of the said stressors. The availability of job resources, which

may be extrinsic or intrinsic, leads to more positive outcomes such as organisational commitment and work engagement. These resources, when possessed in abundance, permit employees to better handle and cope with various demands and stressors in the organisation.

Xanthopoulou, Bakker, Demerouti, and Schaufeli (2007) sought to build some common ground between JD-R model and COR theory. Firstly, they stressed the moderating role of resources in the relationship between demands (threats) and negative outcomes. Secondly, they highlighted that individuals' health and well-being can be enhanced by the availability of personal resources which, in turn, are likely to generate positive individual-level outcomes. Hence, the key common denominator is personal job resources and both JD-R and COR frameworks suggest that their availability (or lack of availability) pose interesting consequences to employees in organisations.

In an attempt to link the combined assumptions and arguments inherent in the JDCS/JD-R models and COR theory to the notion and study of OCBs, OCBs may be classified as a job demand which is likely to contribute to a range of attitudinal, stressor-related, and health-related consequences. Alternatively, OCBs may act to increase the number and/or intensity of other job demands which, in turn, contribute to these same individual-level outcomes. OCB may not necessarily be negative but it has the potential to transform itself into a stressor if it "requires high effort from which the employee has not adequately recovered" (Bakker & Demerouti, 2007, p. 312). In a recent article using COR theory, Bolino et al. (2010b) argued that proactive employee behaviours can create job stress because these behaviours are resource-depleting behaviours given the limited resources available to the employee who engages in other in-role or extra role activities at work. They contended that

employees who engage in proactive organisational behaviours require job resources to perform these behaviours, and postulated that "stress associated with proactive behaviour is likely to be especially great among employees who lack the resources to be proactive" (p. 331). As stated before, resources are anything that employees value and that can be used to help them cope with a diversity of job demands and reduce their physical and psychological costs. Commonly cited job resources include financial rewards, social support, task variety, feedback, job control or autonomy, and participation in decision-making (Bolino et al., 2010b; Crawford, LePine & Rich, 2010). Hence, employees engaging in OCBs under inadequate levels of these job resources can experience higher personal costs and a range of negative consequences. As noted earlier, the JD-R model claims that multiple forms of job resources might moderate the effects of different job demands on stress reactions such that higher perceived levels of job resources can buffer the negative effects of these job demands (Bakker et al., 2004). Empirical support was found for the moderating roles of job autonomy and work-related social support on the impact of job demands on burnout and exhaustion (Bakker, Demerouti, & Euwema, 2005) such that employees experienced more negative health consequences (i.e. higher personal costs) when job demands were high and these critical job resources were low.

2.4.4 ERI Model. The ERI model has been one of most important occupational theories of workplace stress and strain that has guided workplace health research for a number of years. It has its roots in medical sociology and concerns the link between efforts and the reward structure of work. Efforts refer to a variety of job demands and/or obligations that are placed on workers, whereas rewards are elements distributed by the organisation to employees in the form of money, esteem or job

security/career opportunities (Van Vegchel, De Jonge, Bosma & Schaufeli, 2005).

The ERI model rests on the assumption of social reciprocity which is based on the norm of return expectancy where efforts are equalized by adequate rewards (Siegrist, 1996). The notion of failed reciprocity emerges from the violation of this norm where high efforts are undercompensated. This phenomenon is referred to as ERI (effort-reward imbalance) which consists of manifestations of strong negative emotions and sustained stress reactions. However, where efforts are equally matched with rewards, positive emotions and well-being are ultimate outcomes. Another tenet of this model is that employees with an excessive level of job-related overcommitment have a higher tendency to experience the stressful imbalance, and this may lead to an increased risk of strain and negative health outcomes (Yu, Gu, Zhou, & Wang, 2008). This occurs because these individuals experience more distorted perceptions of demands and coping resources, and hence they fail to accurately evaluate their effort-reward status. Indeed, an overcommitted employee's ERI is further exacerbated because this employee exaggerates his or her efforts far beyond what is normally considered appropriate. There has been much empirical evidence supporting the relationship between ERI and various negative health-related consequences (Bosma, Peter, Siegrist, Marmot, 1998; Siegrist, 1996; Steptoe, Siegrist, Kirschbaum, Marmot, 2004; Watanbe, Irie, & Kobayashi, 2004).

The ERI model is another very useful framework in understanding the nature of the consequences of OCBs for employees. Firstly, OCBs can be classified as "efforts" or "investments". Employees who engage in higher levels of OCBs (high efforts) but are "reciprocated" with inadequate/low levels

of rewards are likely to experience negative emotions and sustained stress reactions or strain. However, where high OCBs are equalized by rewards, employees are likely to experience positive emotions and well-being. Secondly, rewards can also be closely tied to job resources as conceptualized under the JD-R model. Rewards in ERI are represented by a mixture of tangible/extrinsic and intangible/intrinsic rewards that have differential effects on employees. They may include esteem rewards, financial rewards, and promotion prospects/job security rewards (Siegrist et al., 2004). Esteem rewards deal with feelings of respect from colleagues and supervisors, as well as perceptions of adequate levels of recognition, social support, and autonomy (control) at work. Financial rewards refer to assessments about salary, and promotion prospects/job security rewards concern the stability of job conditions and future advancement opportunities for employees. As a result, different types of rewards (e.g. intrinsic versus extrinsic) are likely to be differentially effective in the relationship between efforts and outcomes. Thirdly, high OCB performers can be equated with overcommitted employees. Given this comparison, one may argue that OCB performers who naturally perform beyond the call of duty are likely to have higher ERI and ultimately a higher level of negative emotion and job strain due to exaggerated levels of effort.

2.4.5 Final Summary of Key Theoretical Frameworks. The aforementioned review of the key theoretical frameworks has been instrumental to the development of the proposed conceptual model in this research. In summary, these theoretical frameworks point to several common assumptions underlying the consequences of OCBs for employees. Firstly, OCBs can create more negative emotions and higher stress and job strain in OCB performers who perceive lower/inadequate

levels of resources or rewards than in those who perceive higher/adequate levels of resources or rewards. Secondly, OCBs can generate more positive emotions and well-being in OCB performers who perceive higher/adequate levels of resources or rewards than in those who perceive lower/inadequate levels of resources or rewards. Thirdly, overcommitted employees may correspond to high OCB performers. Hence, high OCB performers will suffer from the same exacerbated stressful imbalance as overcommitted employees and hence they are likely to experience negative health-related consequences. As previously mentioned, Somech and Drach-Zahavy (2013) relied on the key assumptions inherent in the COR theory and JDCS/JD-R models to establish that job resources such as leader support and participative decision-making (similar to organisational support and job control, respectively) moderated the effects of OCB on job strain. The present thesis relies on these assumptions as well as those from the ERI model in the proposal and testing of a new conceptual model of the consequences of OCBs for individuals. Essentially, the findings of the prior study provide an excellent basis for comparisons to be made. Table 4 provides a brief summary of key theoretical frameworks, associated assumptions, and their contributions to the proposed model.

Table 4:

Key Theoretical Frameworks

Theoretical Framework	**Underlying Assumption**	**Frameworks' Link to Proposed Model**
Conservation of Resources (COR)	(a)*Resource conservation*: Individuals seek to minimise net resource loss. (b) *Multiple role involvement:* employees who engage in extra-role behaviours are likely to suffer higher personal costs.	Employees who engage in OCBs are likely to have depleted resources which in turn creates stress and strain. Stress associated with OCBs is likely to be higher with employees who lack other resources (e.g. support, financial rewards, autonomy).
Job Demands-Control Support Model (JDCS) & Job Demands-Resources Model (JD-R)	Control and support buffer the negative effects of demands/stressors on individual outcomes. Personal job resources are likely to generate higher positive outcomes, even under high demands situations	Employees who engage in OCBs under low levels of personal resources (e.g. low support and control) are likely to experience higher personal costs or negative outcomes. Employees who engage in OCBs under high levels of personal resources (e.g. high support and control) are likely to experience more positive outcomes.

Table 4 continued:

Key Theoretical Frameworks

Theoretical Framework	**Underlying Assumption**	**Frameworks' Link to Proposed Model**
Effort-Reward Imbalance (ERI) Model	High efforts-low rewards create imbalance which generates negative emotions, high stress, and negative health outcomes. Overcommitted employees have exacerbated stressful imbalances.	OCB can be equated with high effort. Employees who engage in higher OCBs (high efforts) but are reciprocated with low or inadequate rewards are likely to experience negative emotions and sustained stress reactions. OCB performers, who are similar to overcommitted employees, have exacerbated ERI, negative emotion and job strain.

2.5 The Roles of Perceived Organizational Support and Perceived Control

Central to the aforementioned theoretical frameworks are the concepts of job resources from the JDCS/JD-R models and intrinsic rewards from the ERI model. These factors are critical to the proposed model of the present research in light of their contribution to the explanatory power of the previously discussed models. In particular, the proposed model draws from two of the most popular factors in stressor-based models in work and organisational psychological literature: perceived

organisational support and perceived control (i.e. job-related autonomy). Perceived organizational support and perceived control have long been theorised and explored as key organisational factors that are critical to understanding the effects of stressful organisational experiences on employee outcomes.

Perceived organisational support represents the degree to which employees believe that their organisation and its members value their contributions and cares about their overall well-being (Eisenberger, Huntington, Hutchinson & Sowa, 1986). Theorists (e.g. Rhoades & Eisenberger, 2002) have argued that employees have a need to be valued by their organisation which can be manifested in the form of approval, respect, pay and promotion, and access to information. Moreover, "[p]erceived organizational support is also valued as assurance that aid will be available from the organization when it is needed to carry out one's job effectively and to deal with stressful situations" (p. 698). Indeed, much empirical research has demonstrated the significant role of perceived organisational support in the prediction of a range of positive employee outcomes. For example, research has demonstrated that perceived organisational support has led to improved job attitudes such that employees who perceived high levels of organisational support tend to have higher levels of job satisfaction and organisational commitment (Riggle, Edmondson, & Hansen, 2009). In addition, a number of studies (e.g. Stamper & Johlke, 2003) have found that perceived organisational support was negatively related to role stressors such as role conflict and role ambiguity. Furthermore, other research has demonstrated that employees who experience high levels of organisational support also exhibit lower levels of psychological and physical health problems (George, Reed, Ballard, Colin, & Fielding, 1993), lower

turnover intentions, and fewer withdrawal behaviours such as lateness and absenteeism (Aquino & Griffeth, 1999; Guzzo, Noonan, & Elron, 1994). More importantly, perceived organisational support has been treated as a crucial moderating variable in many explored relationships between stressors and health outcomes. As previously discussed, the JDCS model (Karasek & Theorell, 1990) suggests that perceived support at work from superiors and co-workers can act as a buffer against high demands and low control situations. Hence, under high levels of support, employees experiencing heavy demands at work are less likely to experience negative attitudinal, affective, and health-related outcomes. For example, research by Stamper and Johlke (2003) explored the moderating effects of perceived organisational support on the relationship between role stressors and job attitudes, performance and turnover intentions. The argument underlying this approach highlights that support acts as a buffer such that it provides the necessary socioemotional resources to help employees cope with demanding and stressful work, thereby reducing the negative effects derived from this type of work. Much research has shown the moderating effects of perceived support on the relationship between workplace violence and job satisfaction and commitment (Leather, Lawrence, Beale, Cox, and Dickson, 1998), the relationship between work-family conflict and organisational commitment, and the relationship between various job demands and individual health outcomes (LaRocco, House, & French, 1980). The buffering hypothesis suggests that social support interacts with stressors in such a way that the negative consequences of stress are reduced. This hypothesis is based on the view that social support provides the needed resources to help employees manage their stressful experiences.

Although there has been research to show that perceived organisational support is related to OCB (e.g. Randall, Cropanzano, Bormann, & Birjulin, 1999), the current research is the first to recognise and examine the moderating effects of perceived organisational support on the relationship between OCBs and employee-level outcomes. Moreover, there have been claims that perceived organisational support (in contrast to social support) has been rarely researched as a buffering variable on effects of job stress, and others have recommended that future studies seek to examine its moderating effects in occupational stress research (Jex, 1998). The closest account of the use of perceived organisational support in pro-organisational behaviour and stress research can be observed in a study by Stamper and Johlke (2003) who explored the concept of boundary spanner role stress. Employees who are 'boundary spanners' spend most of their work time under intense pressures and demands, and they often handle non-routine (and extra-role) responsibilities and experience diverse role expectations. These authors found that perceived organisational support significantly moderated the relationship between boundary spanner role stress and work outcomes. Under high levels of support, employees with high levels of boundary spanning stress experienced greater levels of job satisfaction and lower turnover intentions, whereas under low levels of support, employees with higher levels of boundary spanning stress experienced lower levels of job satisfaction and higher turnover intentions.

Perceived control has also received similar attention as a key moderating variable in the relationship between organisational characteristics and employee work outcomes. Perceived control concerns the extent to which the individual perceives that he or she has adequate level of autonomy or

discretion over his or her work (Karasek, 1979). Essentially, job control has been described in terms of job autonomy and participative decision-making as both concepts relate to the employees' ability to alter various aspects of their work environment to help cope with stressful demands (Daniels & Gubby, 1994). In particular, perceived control or autonomy has been shown to improve employees' health and well-being as it reduces the negative effects of work-related stress (Daniels and Gubby, 1994). Employees with high levels of control tend to be more satisfied with their jobs (McLaney & Hurrell, 1988), experience less stress, and enjoy better levels of health and well-being (Spector, 1986). Similar to perceived organisational support, perceived control has been argued to help buffer the negative consequences of stressful workplace experiences encountered by employees. Empirical support has been found for control as a moderator (e.g. Bakker et al., 2005; Beehr, 1976; Karasek, 1979, Spector, 1986), especially in the JDCS and JD-R models. Consistent with the buffering hypothesis, employees faced with stressful demands are less likely to experience negative outcomes under high levels of perceived control, whereas employees with little control are at risk of experiencing the adverse effects of these demands. Control over work affords employees the opportunity to manage their work environment in ways that promote better time management, and coping mechanisms that act against heavy demands at work (Spector, 1986, 1998).

Overall, perceived organisational support and control are necessary factors or potential moderators in the relationship between organisational work characteristics or work stressors and employee-level outcomes such as job attitudes, behaviours and health-related consequences. As a consequence, the current research relies on these two factors as key moderators in the

proposed conceptual model discussed in a later section of this chapter.

2.6 Towards a Model of the Individual-level Consequences of OCB

As this research seeks to develop a conceptual model in which the consequences of OCB for various individual-level outcomes are explored, three categories of outcome variables, consistent with the literature previously discussed, are worthy of mention: (1) job attitudes - job satisfaction and organisational commitment; (2) stressors - role overload, role ambiguity, and work-family conflict, and (3) health variables - physical exhaustion or burnout (physical health indicator) and work-related depression (mental health indicator).

The rationale for the inclusion of job attitudes (i.e. job satisfaction and organisational commitment) is consistent with arguments put forward by Spitzmuller et al. (2008). These authors recommended that future research should seek to examine the consequences of OCB for employee attitudes and moods at work. In particular, they highlighted that there are a number of conceptual arguments and empirical studies highlighting that employees who perform high levels of OCB are likely to enjoy high levels of job satisfaction and organisational commitment (Bateman & Organ 1983; Tepper et al., 2004). However, certain conditions may also exist under which OCB can be negatively related to these desirable employee attitudes, and hence, this provides an attractive avenue for future research on OCB and its consequences (Spitzmuller et al., 2008).

The use of stressors as key outcome variables has been inspired by a recent study done by Bolino and Turnley (2005). They explored the effects of OCB-I on three stressor outcomes (role overload, work-family conflict, and job stress), and found

that OCB was positively related to these stressors; these effects were moderate to strong. However, the study was cross-sectional in nature. This current research focuses on extending the research of Bolino and Turnley (2005) by including both OCB-I and OCB-O in the prediction of role overload, role ambiguity and work-family conflict in a longitudinal (complete panel) design. The inclusion of role ambiguity is crucial given the argument, advanced by Bolino et al. (2004) as well as Van Dyne and Ellis (2004), which suggests that as OCBs increase in organisations, employees would find it difficult to distinguish in-role from extra-role job behaviours and ultimately experience a degree of ambiguity regarding their role obligations and expectations at work. Theoretically, the previously discussed perspectives of COR, JDCS/JD-R and ERI have also set a foundation to examine job-related stressors as possible outcomes for OCBs.

The third category of variables – employee health and well-being – was also recommended by Spitzmuller et al. (2008) who indicated that there has been conflicting evidence regarding the effects of OCB on employee health and well-being. For example, there exists a number of studies (e.g. Thoits & Hewitt, 2001; Penner et al., 2005) that show that individuals who engage in OCB benefited from improved levels of physical and mental health, whereas more recent research (e.g. Oplatka, 2009) and conceptual arguments (Bolino et al., 2010a, 2010b) suggest that high levels of OCB contribute to poorer levels of health and well-being. Hence, exploring physical and mental health as outcome variables of OCB can serve to be a fruitful research endeavor as their inclusion would help seek to ascertain how exactly OCB contributes to employee health and well-being, thereby addressing past conflicting evidence.

There have been a number of emerging arguments that suggest that future models depicting the consequences of OCB should focus on the examination of key moderating variables. For example, Bergeron (2007) claimed that future researchers should consider different categories of moderating variables in order to understand the nature of the OCB-outcomes relationship. Moreover, Bolino et al. (2004) confirmed that there were certain conditions under which OCB can be beneficial (or detrimental) to individuals and organisations, and that future researchers are faced with the task to explore these situations. Hence, the main question is - *under what conditions, does OCB benefit or hamper individual performers and the entire organisation*? This research is not locked on either side of the OCB-outcomes debate (i.e. the negative versus positive OCB argument) but rather supports a more balanced view that OCBs are beneficial to individuals under certain conditions, but they prove detrimental to those same individuals under different conditions.

Given the above perspective, a more unique feature of the model is the inclusion of two theoretically derived factors - perceived organisational support and perceived control, as key moderating variables in the OCB-outcomes relationships. Their inclusion acknowledges prior arguments that OCBs can be detrimental or beneficial under different conditions. The complete proposed model then ultimately demonstrates that the effects of OCBs on attitudinal, stress-related and health outcomes are not direct but are dependent on employees' perceived levels of organisational support and control over their work. This proposed model clearly resembles much of the underlying assumptions and features inherent in the previously discussed theoretical models. The next section presents a fuller

description of the proposed model and associated research hypotheses.

2.7 Presentation of Main Study's Conceptual Model

The current research advances and tests a conceptual model depicting perceived control and perceived organisational support as central moderators of the effects of individually- and organisationally-oriented citizenship behaviours on three categories of outcome variables: (1) job attitudes such as job satisfaction and organisational commitment, (2) stressors such as role overload, role ambiguity, and work-family conflict, and 3) health outcomes such as physical exhaustion and work-related depression (see Figure 1). The model is tested with a longitudinal two-wave panel design in which all study variables are measured at both time points. In particular, this main research model is based on the following main hypotheses which are tested longitudinally:

Hypothesis 1: ***Perceived organisational support will moderate effects of OCBs (OCB-I and OCB-O) on job attitudes (job satisfaction and organisational commitment), role stressors (role ambiguity, role overload, and work-family conflict), and health-related outcomes (physical exhaustion and work-related depression).***

Hypothesis 2: ***Perceived control will moderate effects of OCBs (OCB-I and OCB-O) on job attitudes (job satisfaction and organisational commitment), role stressors (role ambiguity, role overload, and work-family conflict), and health-related outcomes (physical exhaustion and work-related depression).***

In particular, the first hypothesis posits that the effects of Time 1 OCB-I and OCB-O on Time 2 job attitudes (job satisfaction and organisational commitment) will be negative under low levels of support but these effects will be positive under high levels of support. Moreover, higher levels of OCBs will be correlated with the higher levels of role ambiguity, role overload, work-family conflict, and with higher levels of physical exhaustion and work-related depression under low levels of support but the effects of OCBs on these variables will be the reverse under high levels of support. Similarly, the second hypothesis posits that the effects of Time 1 OCB-I and OCB-O on Time 2 job attitudes (job satisfaction and organisational commitment) will be negative under low levels of control but these effects will be positive under high levels of control. Moreover, higher levels of OCBs will be correlated with the higher levels of role ambiguity, role overload, work-family conflict, and with higher levels of physical exhaustion and work-related depression under low levels of control but the effects of OCBs on these variables will be the reverse under high levels of control.

Important unique contributions of this model include (1) the examination of OCBs as antecedent variable and potential demand/stressor variable, (2) the inclusion of a diversity of individual level outcomes which are theoretically salient and empirically linked to OCBs, and (3) the inclusion of the perceived organizational support and perceived control as key moderators on the effects of OCBs on various employee outcomes consistent with prior theoretical frameworks and empirical findings. It borrows from major theoretical models and perspectives including the COR theory, JDCS/JD-R and the ERI models and extends current thought and literature regarding the theorising

and study of work-related stressors, OCBs, and employee-level outcomes in organisations.

This main conceptual model is tested across the three studies underlying this thesis. In Study 1, it is tested using cross-sectional data derived from the first wave of the research (Time 1 data), and in Study 2, it is be re-assessed using the cross-sectional data derived from the second wave (Time 2 data) from the same participants. Hence, Studies 1 and 2 tested cross-sectional versions of the main conceptual model. Study 3 examined this model in its best form as a longitudinal model in which Time 1 variables are cross-referenced to Time 2 variables, controlling for other influences at the former wave. The model results in Study 3 are then compared against the cross-sectional results derived from Studies 1 and 2.

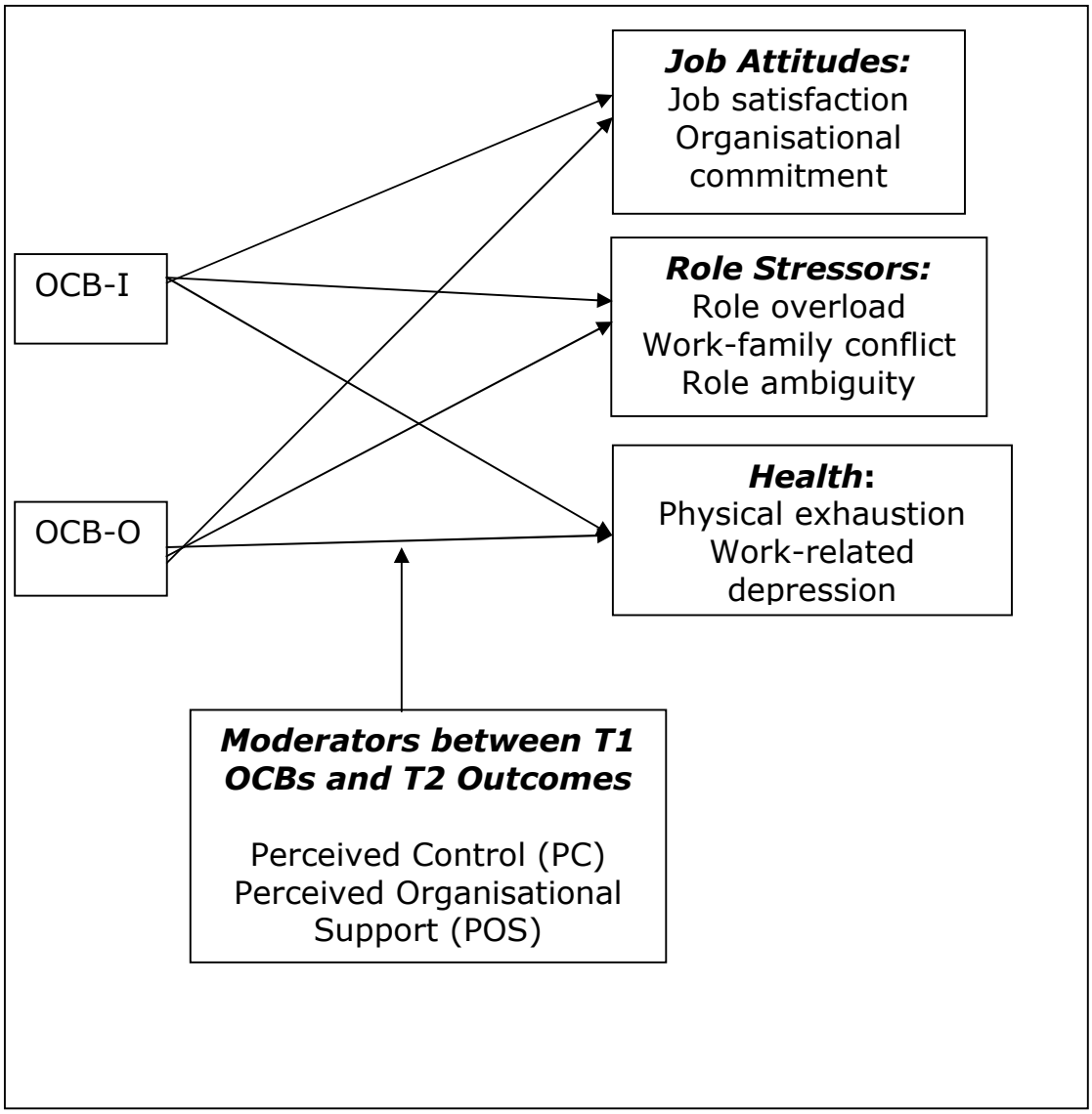

Figure 1. Model 1: PC and POS as moderators in the OCB-outcomes relationship (main conceptual model)

2.8 A Case for Alternative Models

The proposed research recognises the necessity of testing alternative models as a means of validating the current proposed model based on the adopted two-wave panel design. Two alternative models, derived from existing theory and empirical research, have also been advanced here to compare against the main conceptual moderation model: a direct effects model and a mediation model.

The direct effects model posits that OCB-I and OCB-O, measured at Time 1, have direct effects on the three categories of dependent variables: job attitudes, stressors, and health outcomes, measured at Time 2 (see Figure 2). The moderating variables of perceived organisational support and perceived control are not assessed in this model. Theoretically, this model acknowledges existing theoretical views of Bolino et al. (2010b) and Van Dyne and Ellis (2004) which highlight that the performance of proactive behaviour and OCBs, over time, can directly impact on a range of employee outcomes. Although Bolino et al. (2010b) do not regard that all forms of OCBs are proactive behaviour (i.e. some OCBs may be reactive), they recommended that future research should examine the effects of different forms of proactive behaviours on a number of diverse outcomes. The direct effects model is also in keeping with the suggestions of Spitzmuller et al. (2008).

The mediation model examines the role stressor variables as central mediators for the effects of OCB-I and OCB-O at Time 1 on the job attitudes (job satisfaction and organisational commitment) and health variables (physical exhaustion and work-related depression) measured at Time 2. The mediation model, presented in Figure 3, demonstrates that OCBs will have direct effects on role ambiguity, role overload and work-family conflict, which in turn, will have effects on job attitudes such as

job satisfaction and organisational commitment and health variables such physical exhaustion and work-related depression.

There has been much research to support the mediating processes in this model. Building cases for mediation has been rooted in Baron and Kenny's recommendations which suggest that mediation is plausible if (1) the independent variable(s) has a significant path or relationship to mediator(s), (2) the mediator(s) has a significant path or relation to the outcome(s), and (3) the independent variable(s) has a significant path or relationship to the outcome(s).

In relation to the first condition - 'OCBs-to-role stressors' paths - in the mediation model, past empirical evidence (Bolino & Turnley, 2005; Somech & Drach-Zahavy, 2013) has shown that OCB has a direct impact on role stressors such that OCBs increase higher levels of role stressors such as role overload and work-family conflict. Moreover, theoretical arguments (Bolino et al., 2004; Van Dyne & Ellis, 2004) have been previously mentioned in this chapter suggesting a direct link between OCBs and role stress. In relation to the second condition - 'role stressors-to-health' and 'role stressors-to-job attitudes' paths, there has been even more available research evidence which demonstrates that role stressors including role ambiguity, role overload, and work-family conflict impact negatively on employee attitudes such as job satisfaction and organisational commitment (Anton, 2009; Lambert, Hogan, Paoline III, Clarke, 2005; Yousef, 2002), as well as employee health including burnout and mental health (Maslach, Schaufeli, & Leiter, 2001; Tennant, 2001). Theoretical models such as the Affective Event Theory (AET) have been instrumental in theorising the links between organisational stressors and employee-level outcomes such as job attitudes and health (Weiss & Cropanzano, 1996). Finally, in order to build a final case for full mediation, there

must be some known empirical link between independent variables (i.e. OCBs) and job attitudes and health variables. Although not as prevalent as the prior evidence discussed, the relationship between OCBs and attitudes and health has received some empirical support. For example, past research evidence (Bateman & Organ, 1983; Tepper et al., 2004) has shown that OCBs have direct effects on job satisfaction and organisational commitment, and other studies (Van Willgen, 1998; Yogev & Ronen, 1982) have shown that prosocial behaviors, similar to OCBs, share a high level of variation with physical and mental well-being. In light of these conditions, there is adequate justification for the proposal of this mediation model.

Overall, the direct effects and mediation models serve as plausible alternative conceptual models to the main conceptual model of the present thesis. Similar to the main conceptual model, they are empirically tested first using the cross-sectional data at Time 1 (Study 1) and Time 2 (Study 2), and then using the longitudinal dataset between Time 1 and Time 2 (Study 3).

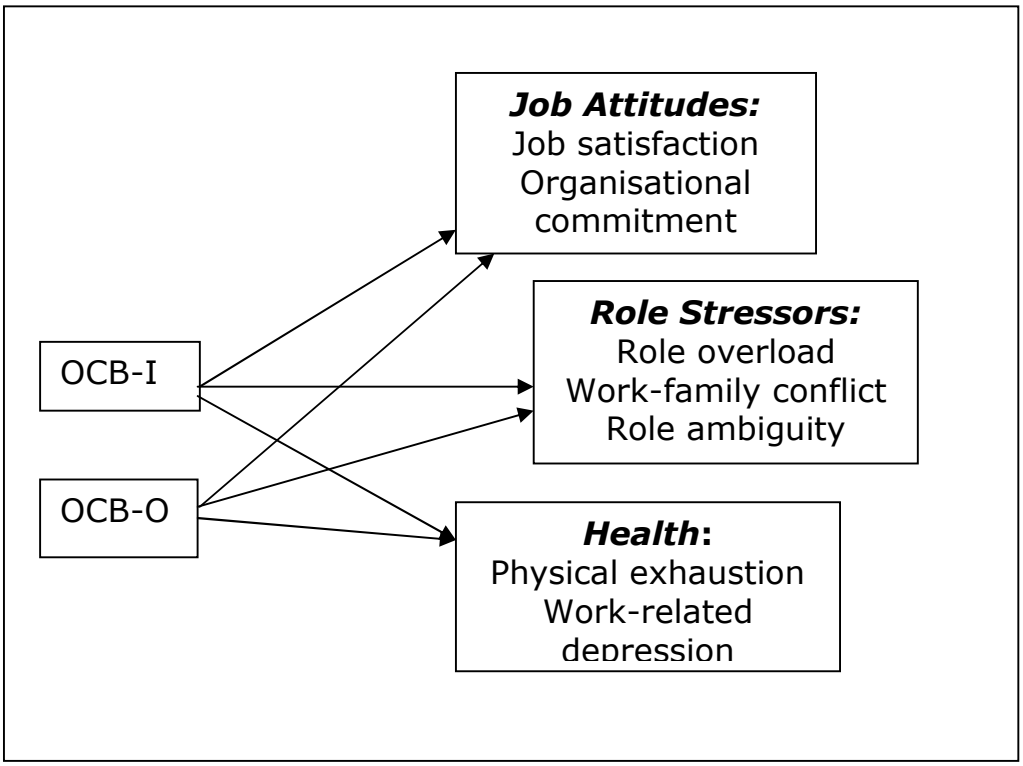

Figure 2. Model 2: Direct Effects model

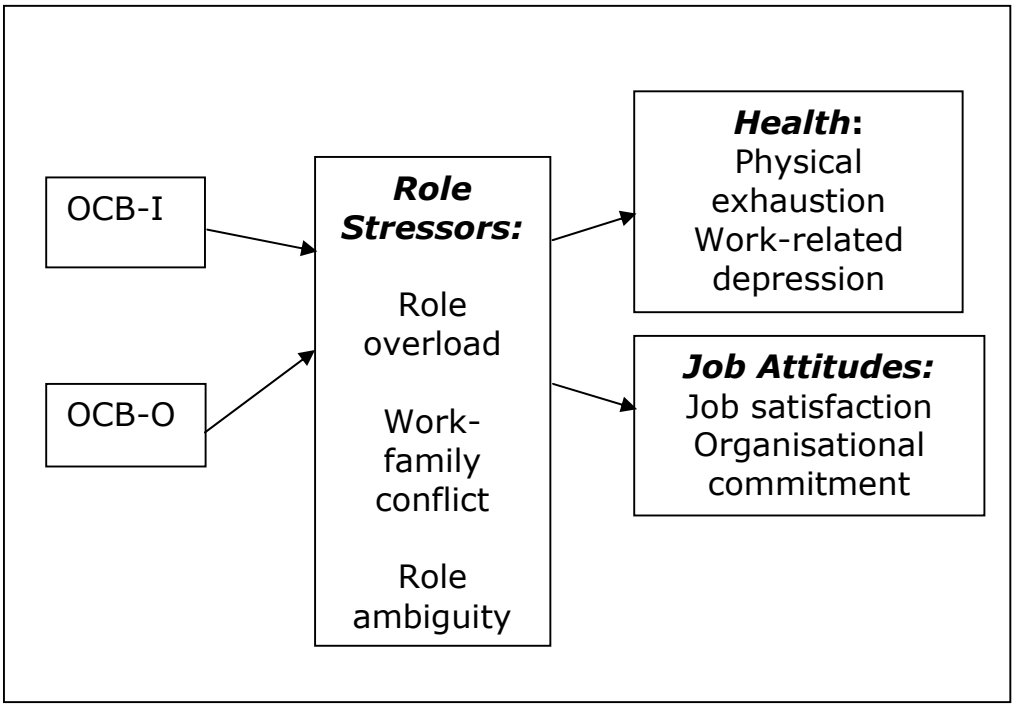

Figure 3. Model 3: Mediation model

2.9 Reverse and Reciprocal Causation Models

Whereas the current research examines OCB as a main antecedent, OCB has been traditionally regarded and studied as a key outcome variable of stressors, job attitudes, and health-related variables. Moreover, many theoretical arguments and research findings suggest that longitudinal panel studies provide the unique opportunity for testing not only normal causal relations but also reverse (and reciprocal) versions of these relations. In keeping with these arguments and findings, the reversed versions of the direct effects and mediation models are also assessed (in the longitudinal analyses of Study 3). The direct effects model, in its reverse, is in keeping with the conventional depiction of OCB as a main outcome variable in which the Time 1 effects of stressors (role overload, role ambiguity and work-family conflict), job attitudes (job satisfaction and organisational commitment), and health variables (physical exhaustion and work-related depression) on Time 2 OCBs are assessed (e.g. Eatough, Chang, Miloslavic, & Johnson, 2011; Foote & Tang, 2008; Rego, Ribeiro, & Cunha, 2010; Ford, Cerasoli, Higgins & Decesare, 2011; Schappe, 1998; Sesen, Cetin & Basim, 2011; Zeinabadi, 2010). An alternative reversed version of mediation model examines the Time 1 role stressors on Time 2 OCBs, as mediated by job attitudes (satisfaction and organisational commitment) and health-related variables (physical exhaustion and work-related depression).

De Lange et al. (2003) have stressed the need for studies with longitudinal panel designs to examine not only direct and reverse causation models but also assess the possibility of reciprocal causation. In the longitudinal study of the present thesis (i.e. Study 3), a reciprocal causation model is estimated in which the effects of Time 1 OCBs on Time 2 outcome

variables of job satisfaction, organisational commitment, role ambiguity, role overload, work-family conflict, physical exhaustion, and work-related depression as well as the effects of these outcome variables measured at Time 1 on Time 2 OCBs are simultaneously assessed. This reciprocal model is then compared against the previously discussed models.

2.10 Conclusion

This chapter provided an extensive review of the nature, antecedents, and consequences of OCBs for employees and organisations. It provided a balanced review on both positive and negative sides of the debate on OCBs, and established the need for further research to remedy the existing mixed findings and theoretical uncertainty regarding OCBs and its consequences for individuals. The second part of the chapter provided an overview of several theoretical frameworks (COR, JDCS/JD-R, and ERI theories) and relied on their core assumptions as a key foundation to develop and pose a new conceptual model depicting organisational support and job control as moderators in the relationship between OCBs and individual-level outcomes of job satisfaction, organisational commitment, role overload, role ambiguity, work-family conflict, physical exhaustion, and work-related depression. This proposed model is tested across two cross-sectional datasets (Time 1 and Time 2 separately), and then tested finally in a longitudinal dataset. The model is tested against other alternative models including a direct effects model and a mediation model. The next chapter presents a comprehensive overview of the key methodological design adopted for the research and evaluates a number of methodological considerations important for ensuring valid and reliable inferences.

Chapter 3: Methodology

3.1 Introduction

This chapter discusses the general methodological orientation underlying the current research. Firstly, the chapter introduces the nature of longitudinal research, how it differs from cross-sectional research, and different types of longitudinal designs available to researchers examining causal relationships between variables. Secondly, advantages and disadvantages of longitudinal research are identified and discussed. Thirdly, an evaluative framework used to assess the quality of longitudinal research (De Lange et al., 2003) is introduced and discussed. Finally, the longitudinal approach adopted in the current thesis is assessed against the criteria and weights derived from the evaluative framework. The current longitudinal approach adopted is a two-wave complete panel design with a one year time lag between waves.

3.2 Overview of Methodological Considerations in OCB and Stress Research

A number of authors have recommended that researchers in stress research (e.g. De Lange et al., 2003; Taris & Kompier, 2003) and OCB research (e.g. Koys, 2001; Podsakoff & Mackenzie, 1997) utilised stronger methodological designs such as longitudinal or panel designs to test their theories and models in ways that provide more rigorous assessments of the quantitative relationships among variables. Moreover, Zapf, Dormann and Frese (1996) noted that sound longitudinal research is needed to better appreciate and understand the nature of the stressor-strain relationship. When it comes to longitudinal research, strong methodological considerations include issues of causality, measurement of variables, sampling,

data-collection, and data analysis. Cross-sectional studies have provided limited information and assessments to many past conceptual claims which preclude any definitive or conclusive statements about the validity of these claims. As a result, many organisational psychologists have suggested to researchers to be cautious in the pursuit of such studies and recognise the limitations inherent in their adoption to evaluate conceptual models and theoretical arguments.

3.3 Definition and Nature of Longitudinal Research

Longitudinal research designs are becoming increasingly popular under the quantitative research methodology, especially within the subjects of organisational behaviour and work psychology. Longitudinal designs are clearly distinguishable from cross-sectional designs. Cross-sectional research concerns the measurement and investigation of one or more variables at a single point of time (Ivancevich & Matteson, 1978), whereas longitudinal research has the feature of measuring these same variables on several successive occasions over a period of time. Hence, longitudinal research introduces a time dimension and the ability to capture changes in some attribute, attitude or behaviour over time that clearly sets it apart from cross-sectional research. Longitudinal research must be defined according to the data and methods used. For example, others (e.g. Menard, 2002) have defined longitudinal research as research in which (1) data are gathered for one or more variables for at least two distinct occasions or waves, (2) the participants studied are the same or at least similar from one wave to the next, and (3) the data analysis is based on some comparison between or among waves. This definition reinforces the popular view that longitudinal research includes a family of

methods and not a single method. For example, several types of research designs which are often placed under the heading of 'longitudinal design' include total population designs, repeated cross-sectional designs (or trend study designs), intervention study designs, and longitudinal panel designs. However, the design which has gained immense popularity is the longitudinal panel design. A longitudinal panel design relies on the same set of participants at different waves of data-collection (Menard, 2002; Taris, 2000). In particular, prospective panel designs involve the measurement of more than one variable across more than one wave of data-collection with the same set of participants. These are contrasted with retrospective panel designs in which data collection occurs once (i.e. a single period). Prospective panel designs have also been praised for their ability to facilitate a more in-depth understanding of causality among variables captured at different time points (De Lange et al., 2003).

3.4 Advantages and Disadvantages of Longitudinal Research Design

Menard (2002) states that "longitudinal research is touted as a panacea for establishing temporal order, measuring change, and making stronger causal interpretations" (p.1). Longitudinal designs present researchers with a number of advantages. The first and most obvious advantage of longitudinal designs rests in their ability to examine multiple variables over a period of time for a large number of participants. Such a feature provides a good opportunity to study intra-individual changes (Taris, 2000). Hence, it is possible to observe and assess attitudinal and behavioural changes over time at the individual level. Secondly, these designs allow for an examination of relationships among

variables at different time periods with the same respondents, as the case with panel designs. Hence, it is possible to conduct both cross-sectional analyses (on each wave) and longitudinal analyses (across waves) to permit relevant comparisons between these two unique sets of analyses. Thirdly, longitudinal designs have generated greater praise than cross-sectional designs in detecting underlying causal mechanisms in the relationships between variables captured by surveys. For example, De Lange et al. (2003) claimed that "such [cross-sectional] designs are ill-suited to test *causal* relationships, because they cannot provide any evidence regarding the temporal order of the variables…strong evidence on the causal order of variables requires longitudinal designs" (p. 283). A cross-sectional design does not offer a high degree of assurance for understanding the effects of variables given that these 'one-shot' attempts are unable to disentangle the causal networks between variables. Taris (2000) noted that longitudinal designs essentially capture three important criteria for establishing causality: (1) covariation, (2) non-spuriousness, and (3) temporal order of events. The first condition suggests that there must be significant associations between independent and dependent variables, as causality cannot be considered if no relationships among the variables exist. The second condition implies that for causality to be plausible, the relationship between the variables must not be due to the effects of other factors. In non-experimental designs, advanced statistical analyses are used to control the effects of extraneous variables to determine whether associations between independent and dependent variable are pure (hence, ruling out the possibility of spuriousness). Essentially, the two above-mentioned conditions can be addressed using cross-sectional studies. However, the third criterion clearly distinguishes longitudinal designs from

cross-sectional designs where the ability to determine whether the causal variable precedes the outcome variable becomes a powerful contribution of the former. Although others have cautioned that "longitudinal designs per se are no guarantee for drawing valid causal inferences" (Taris & Kompier, 2003, p.1), these designs do provide initial guidance about the causal nature of and causal mechanisms within the relationships between variables. Fourthly, longitudinal panel designs provide much more efficient and robust model estimators than do cross-sectional research designs, making the former much more preferred in statistical model building and testing research (Frees, 2004).

In considering the general advantages of longitudinal research designs, one must be cognisant that specific designs provide specific and unique advantages over other forms. Incomplete panel designs involve the measurement of independent variables and dependent variables at Times 1 and 2, and only a measurement of the dependent variable at Time 2. These forms of designs restrict the depth of analyses and explanations that researchers can provide regarding the causal network of variables studied. As a result, complete panel designs have emerged as a popular design of choice for examining full causality. This specific form of panel design concerns the measurement of both independent and dependent variables at both time points (i.e. Time 1 and Time 2). Hence, an advantage of complete panel designs (compared to incomplete panel designs in which not all variables are measured at all time points) rests on their ability to examine different kinds of causality such as normal causal relationships, reverse causal relationships, and reciprocal causal relationships (Zapf et al., 1996). As noted by De Lange et al (2003), a fuller understanding of the causal processes in the relationships

between variables is best achieved by complete panel designs. Zapf et al. (1996) recommended that future longitudinal design attempts should seek to measure all variables at all time points using the same measurement tools or instruments for the respective variables.

Clearly, longitudinal designs do have a number of disadvantages that must be appreciated here. Firstly, one often cited disadvantage of longitudinal designs is the possibility of panel conditioning. Panel conditioning or panel effect concerns the possibility that prior responses alters or changes later responses of the same respondents; hence, either the way in which participants report experiences, attitudes or behaviours may change or these actual variables may change (Lynn, 2009). Conditioning is common in situations in which the same questions from the first wave are posed to the same participants in the second wave. More often than not, panel conditioning can pose validity problems in the research. However, researchers have argued that panel conditioning is reduced over longer intervals between waves. Thus, in cases where time lags are longer between waves, panel conditioning is unlikely to occur.

Another disadvantage of longitudinal designs concerns sample or panel attrition. This phenomenon refers to "the continued loss of respondents from the sample due to nonresponse at each wave of a longitudinal survey" (Lynn, 2009, p.10). Sample attrition can occur for a number of reasons including the following: (1) participants cannot be reached or located at later waves (due to changes in contact details or death), (2) participants may outwardly refuse to participate in the survey in later waves, and (3) participants may not complete major sections of survey leading to a wide coverage of missing data. Sample attrition results in a number of challenges, of which the most problematic is attrition bias. If

sample attrition is systematic (i.e. not random), it suggests that there are unique characteristics among 'drop-outs' which can ultimately bias the final results (i.e. estimated population parameters). However, if attrition is found to be random, attribution bias does not occur. Given the fact that the respondent is lost for the entire study once he or she misses at least one wave of data-collection, attrition ultimately reduces sample size in the research. This can have serious implications for data analysis. High drop-out rates lead to smaller sample sizes which ultimately limit not only sample representativeness but also statistical power. Many frequently used statistical analyses relied on large sample sizes such as SEM and multiple regression, and researchers may be forced to either use less powerful and non-parametric alternative techniques or transform their data to address their questions or hypotheses when faced with reduced sample sizes due to attrition.

Apart from the above cited disadvantages, longitudinal designs are also viewed to be costly and time consuming. Lynn (2009) also outlined that given that panel designs require tracking respondents, relevant contact information (i.e. names and contact details) is usually needed. However, participants' concerns over anonymity and confidentiality become pronounced. Hence, these concerns may translate to nonparticipation in longitudinal surveys or inaccurate or misleading survey data.

Despite these disadvantages, longitudinal designs still provide very useful ways of investigating various phenomena much more rigorously than do other types of designs, once they are carefully planned and properly executed. The next section outlines key issues and challenges facing longitudinal panel research, and provides a framework for evaluating the quality and rigour of longitudinal research based on a number of

important criteria. This evaluation framework will serve to address most of the challenges and weaknesses encountered in longitudinal designs and strengthen the quality of data obtained.

3.5 A Framework for Evaluating Longitudinal Research

Several issues have haunted the practice of longitudinal research for a number of decades. These issues include the type of longitudinal design employed, the time lag duration selected, the quality of research measures used, types of statistical analyses conducted, and the use of nonresponse analysis to inspect nonresponse bias. As a result, an evaluative framework for assessing the quality and rigour of longitudinal research was developed based on suggestions and recommendations from the literature (e.g. De Lange et al., 2003; Taris, 2000; Zapf et al., 1996). This framework provides necessary criteria for acceptable longitudinal designs and reports a weighting system which allows for a thorough assessment of various criteria. This framework is highlighted in Table 5 (adapted from De Lange et al., 2003). Each criterion is discussed below.

3.5.1 Type of longitudinal designs. A critical problem revealed in the organisational stress and health literature concerns the lack of attention on causality, reverse causality, and reciprocal causality (De Lange et al., 2003). Zapf et al. (1996) argued that several past longitudinal study attempts have failed to examine reverse and reciprocal causality which is due largely to the use of incomplete panel designs. Incomplete panel designs are where all study variables (both independent and dependent variables) are not measured (or assessed) at all waves, restricting the examination of reverse and reciprocal causality. This has led to deficient panel designs and premature

claims of the causal nature and direction of study variables in many empirical studies.

Complete panel designs have been lauded because of their ability to model normal, reverse and reciprocal causality due to their requirement to measure and assess both independent and dependent variables at all study waves (Taris & Kompier, 2003; Zapf et al., 1996). This feature provides a more comprehensive and thorough investigation of the causal relationships among a diverse set of study variables. With these designs, other benefits are encountered. Firstly, occasion and background variables ('third' variable influences) are ruled out as potential sources of spuriousness in the analyses. Secondly, these designs allow one to examine synchronous effects between independent and dependent variables. With incomplete panel designs, a relationship between variables based on synchronous effects cannot be observed if the independent variable is not stable (Zapf et al., 1996). Hence, complete panel designs are heavily preferred over incomplete panel designs. In Table 5, the longitudinal designs which utilised an incomplete panel design are rated with one star (insufficient), whereas those which utilised complete panel designs which measure all variables in two-wave studies are rated with three stars (good) and those with higher waves are rated with four stars (very good).

Table 5:

Criteria for Evaluating Longitudinal Research

Criteria	*1 star (insufficient)	**2 stars (sufficient)	**3 stars (good)	****4 stars (very good)
Design	At least one variable not measured on all occasions	At least one variable not measured on some occasions (incomplete panel design)	All variables measured twice (complete panel design)	All variables measured more than twice (complete panel design with >2 measurements
Time Lags	1 time lag and no argument (support)	>1 lag and no argument	1 time lag and a theoretical and/or method. argument	>1 time lag and a theoretical and/or method. argument
Measures	Insufficient or questionable information	Good references	Good references and good psychometric checks on own data	Good references and good psychometric checks on own data and at least 1 'objective' indicator
Method of Analysis	Correlational research		SEM/ multiple regression	
Nonresponse Analysis	No check on selectivity of the sample	Check on selective Time 1 response or check on selective panel *or* follow-up response	Check on selective Time 1 response *and* check on selective panel or follow-up	Check on selective Time 1 response *and* check on selective panel or follow-up, and further analysis on response versus nonresponse group differences

Source: De Lange et al. (2003).

3.5.2 Time lags. One crucial prevailing issue inherent in longitudinal research concerns the selection of an appropriate

time lag or measurement interval between or among waves. Clearly, researchers and theorists have contended that the time lag should correspond with the 'causal interval' of the process under investigation (Leventhal & Tomarken, 1987; Taris & Kompier, 2003). However, Kenny (1975) highlighted that theory rarely offers any prescriptive guidance regarding how long a time lag should be for variables within a theoretically driven or hypothesised causal model. Hence, most researchers have chosen time lags on the basis of convenience and/or organisational/practical reasons (Zapf et al., 1996). However, care must be taken here as time lags that are too long can result in an underestimation of true causal variable effects, and those that are too short may lead to conclusions of non-significant lagged effects. Zapf et al. (1996) claimed that time lags of longitudinal studies must be carefully planned and that longer time lags are less problematic than shorter time lags. De Lange et al. (2003) noted that there is no general consensus in the literature regarding appropriate time lag lengths but stressed the need for researchers to find acceptable and reasonable evidence for their choices. For example, De Lange et al. noted that pragmatic considerations (i.e. those based on practical constraints) should be accompanied with strong conceptual and/or empirical reasons to help justify one's decision regarding the length of a time lag. For example, a one year time lag has been chosen for assessing various stressor-strain relationships in the industrial and organisational psychology literature based on a number of considerations. Firstly, De Lange et al. empirically found that a one year time lag was most appropriate for studies examining stressor-strain relationships. Secondly, other researchers (e.g. De Jonge et al., 2001; Frese & Zapf, 1988) have argued that this particular time lag seems to be long enough for possible changes in individual

scores, but not too long to permit too many nonresponses. Thirdly, one year time lags have been empirically shown to allow for sufficient time between measurement points, since time lags that are too short can be problematic (Houkes, Janssen, Jonge, & Bakker, 2003; Kessler & Greenberg, 1981). Fourthly, a one year interval is selected to control for alternative explanations (such as seasonal influences) for relationships among study variables. Based on prior empirically derived arguments (De Jonge et al., 2001; Houkes et al., 2003), a one year measurement interval ensures that seasonal influences are controlled for. Notwithstanding the commonly cited advantages of one year time lags, others (Dormann & Zapf, 2002) argued that multiwave longitudinal studies with two year time lags often demonstrated the strongest relationships between variables. Table 5 outlines that longitudinal research studies with a one year time lag with supporting methodological or theoretical justification fall into the 'three stars' category (good), whereas those with more than one time lag with supporting justification fall into the 'four stars' category (very good) in relation to methodological rigour/quality.

3.5.3 Research Measures. The most popular method for longitudinal research in the work and organisational psychology (e.g. stress and health) literature is the survey design. Given the heavy reliance of self-report instruments in this design type, there is strong need to utilise measures with good psychometric properties. Validity and reliability are critical for self-report measures in longitudinal research. Validity and reliability problems can influence statistical relationships between variables in longitudinal research, such as the underestimation of causal variable effects and poor model fits in measurement and structural models. De Lange et al. (2003) suggested that longitudinal researchers should rely on

established and well-validated instruments. Such instruments have been shown to have acceptable levels of reliability and validity. One popular measure of reliability of measurement items – the Cronbach's alpha – is highlighted as an important source of evidence for selecting self-report instruments. This reliability assessment technique provides an estimate of internal consistency reliability of different research measures. Cronbach's alpha coefficients of .70 and higher indicate acceptable levels of reliability for self-report measures. In their review, De Lange et al. claimed that all studies assessed were at least sufficient in their 'measurement' criterion assessment, suggesting that all studies utilised measures with good references on their psychometric properties. However, they found that nearly half of the studies reviewed either failed to provide psychometric checks (i.e. their own reliability analyses) or reported unacceptable results for their measures (alphas < .70).

Another important concern regarding the measurement of variables in longitudinal designs relates to the possibility of self-report biases which can negatively influence statistical findings in both cross-sectional and longitudinal research. Social desirability and common method biases present a number of problems which limit researchers' ability to detect the true causal effects of variables in statistical modelling research. Common method biases can result from the act of measuring both independent and dependent variables with the same source or rater. In OCB research, self-reports of OCB used alongside other self-report measures can lead to common method variance. Hence, researchers (Organ & Ryan, 1995; Podsakoff & Organ, 1986) suggested the use of 'other' reports (i.e. superior or peer evaluations) of OCBs with self-report measures of other variables to address this problem in organisational behaviour

research. Moreover, De Lange et al. (2003) recommended the combined use of objective and self-report measures in order "to mitigate the effects of methodological or conceptual overlap between the measured variables, thus reducing the risk of falling in the triviality trap" (p. 285). Clearly, the use of objective and subjective measures in work and organisational psychology research is gradually becoming popular (De Lange et al., 2003). Table 5 shows that studies which relied on well-supported and validated measures are rated with 'three stars' (good), and those which used at least one objective measure alongside well-supported and validated self-report measures are rated with 'four stars' (very good).

3.5.4 Methods of Statistical Analysis. A careful examination of the literature regarding longitudinal research on stress and health reveals that there are three main methods of analysis for examining causality between variables: (1) cross-lagged correlations, (2) hierarchical multiple regression, and (3) structural equation modelling (SEM).

Cross-lagged correlations involve six correlations: the cross-sectional correlations at different waves, the autocorrelations or stabilities r (x_1, x_2) and r (y_1 and y_2), and the cross-lagged correlations r (x_1, y_2) and (y_1, x_2). The analysis primarily concerns the comparison between the two cross-lagged correlations between variables (Kenny, 1975). However, this technique often leads to inaccurate conclusions due to its inability to reject occasion-factor models, and the presence of differences in variances and in cross-sectional correlations, suggesting that assumptions inherent in cross-lagged correlations are often not met. It is difficult to assess reversed or reciprocal causality as the cross-lagged correlations are contingent on the variances of the variables as well as across-time stability (De Lange et al., 2003).

Hierarchical multiple regression analyses are often used to model the effects of independent variables on dependent variables, simultaneously controlling the effects of third variables. Such a technique rules out potential explanations of spuriousness (e.g. background and nonconstant variables) due to its ability to control for other variables concurrently. The technique can also be used to examine reverse causality hypotheses in which Time 2 stressors are regressed on Time 1 strain variables.

SEM analyses involve the comprehensive estimation of measurement and structural models in which the construct validity of all measures and hypothesised relationships between different variables are assessed. SEM involves a combination of confirmatory factor analyses to assess the validity of a measurement model and structural path analysis to estimate paths from latent variables (Kelloway, 1998; MacCallum & Austin, 2000). This technique has a number of benefits to the longitudinal analyst which have been outlined by Zapf et al (1996). Firstly, measurement errors can be estimated in SEM, which provides an opportunity to assess correlated (or uncorrelated) measurement errors in different variables. This feature is not available in correlational or multiple regression analyses. Secondly, SEM can assess multivariable-multiwave models as it can simultaneously estimate causal effects of all latent variables on other variables. Thirdly, it has the ability to assess reciprocal effects or causality, alongside normal and reverse causality relationships among multiple variables. Fourthly, third variable and method problems can be modelled as occasion factors and common factor models that account for the effects of unmeasured third variables. Overall, Zapf et al. (1996) highlighted that SEM can do everything that cross-lagged correlations and hierarchical regression analyses do. Hence, it

represents a very popular and useful method of statistical analysis for longitudinal research models. Table 5 outlines that longitudinal studies which rely on multiple regression and/or SEM are rated with 'three stars' (good).

3.5.5 Nonresponse Analyses. Several researchers and authors (e.g. De Lange et al., 2003; Taris, 2000) highlighted that some degree of nonresponse in longitudinal surveys is inevitable. Nonresponse can lead to increased sample bias if there is a significant systematic (nonrandom) difference between responders and nonresponders with respect to the variables under study (Taris, 2000). Such bias can undermine the overall validity of the research and subsequent conclusions made about key findings emerging from the data. The systematic difference between responders and nonresponders results in biased samples and severely limits the generalisability of results to larger populations. Selective nonresponse can also reduce the possibility of detecting truly significant relationships among study variables, due to reduced variation in the sample on certain variables (Taris, 2000). Attrition is considered to be most popular form of nonresponse in longitudinal surveys. It has been argued that nonresponse through attrition should be avoided wherever possible. Several preventative strategies suggested include (1) the collection of critical contact details of participants or of those who are related to (or affiliated with) those participants, (2) the use of rewards or incentives to maintain continual survey participation, (3) convincing respondents of the importance of their participation and contacting them at different periods after the first wave but before upcoming waves to encourage commitment.

Given that nonresponse presents a serious threat to study validity as well as its inevitability in longitudinal panel research, appropriate analyses are required to assess the extent of

selective nonresponse bias so as to control for its effects on the overall validity of the obtained results. Hence, the fifth criterion – nonresponse analysis – is considered. Several analytical strategies of detecting selective nonresponse have been recommended. Firstly, Menard (2002) suggested the use of binomial or Chi-square tests to examine whether the proportions of participants in different demographic groups (e.g. genders, age groups, occupations, etc) differ significantly between Time 1 and Time 2. This strategy helps determine whether sample representativeness has been altered significantly across waves. Another strategy concerns statistically comparing *stayers* (those who participated in both waves) and *drop-outs* (those who participated in the first wave but not the second wave) with regards to the main study variables at Time 1 (Menard, 2002; Taris, 2000). The use of multivariate analysis of variance (MANOVA) and/or multiple binary logistic regression is popular in examining statistical differences between these groups on main study variables, whilst controlling for familywise error. A more popular strategy involves comparing the structure and strength of the relationships among study variables (i.e. independent and dependent variables) between stayers and drop-outs based on correlational and regression analyses. These tests are crucial for detecting "evidence of sample variability over successive waves of data collection" (Menard, 2002, p. 40).

In light of the above suggestions, it has been argued that there is need to control for selective nonresponse in longitudinal research by combining both preventative and analytic methods. In terms of the latter, De Lange et al. (2003) suggested that differences between responders and nonresponders be investigated on all study variables, and that relationships among Time 1 variables be examined between responders and

nonresponders (De Lange et al., 2003; Kessler & Greenberg, 1981). These forms of analyses permit the identification of possible nonresponse bias in the research. Based on Table 5, longitudinal studies, which engage in the above-mentioned analytical methods of detecting selective nonresponse, are evaluated with 'four stars' (very good) in the area of nonresponse analysis.

3.6 An Evaluation of Current Study Methodology

In light the above discussion regarding the evaluative framework for assessing the quality of longitudinal research, the current study's longitudinal approach is assessed under the same criteria in Table 5. A customised version of this table is presented in Table 6 which presents an assessment of the current study's longitudinal approach using the same criteria and weights discussed.

3.6.1 Current Study Design. The first criterion – type of design – concerns the fact that not all types of longitudinal designs are created equal; others are more rigorous than others. Under this criterion, the current research can be evaluated as '*good*', given that the current research employs a complete panel design in which all study variables are measured at both Time 1 and Time 2, allowing for the analysis of normal and reverse causal relationships. The study seeks to examine several models depicting the effects of OCBs at Time 1 on job attitudes, stressors and health outcomes at Time 2, as well as the reverse and reciprocal model versions. As mentioned earlier, complete panel designs provide a fuller understanding of the causal processes within relationships among independent and dependent variables.

3.6.2 Time Lag Length. Secondly, a complete panel design is not sufficient to model causal relationships among

variables because "the researcher still has to consider the length of the time lag that is needed to detect any effects" (De Lange et al., 2003, p. 285). Hence, the second criterion – time lag length – concerns the view that an appropriate time lag is necessary for acquiring better quality results in longitudinal research. In the area of 'time lag length', the current research can be evaluated as '*good*', given the use of a time lag of one year coupled with its support derived from empirical and methodological arguments (as previously discussed). This is consistent with the recommended assessment schedule provided by De Lange et al. (2003).

3.6.3 Research Measures. The quality of a longitudinal survey research design is also based on the quality of research measures used. Hence, the quality of research measures is the third criterion for evaluating methodological rigor in longitudinal designs. The measures used in this research were all taken from previously validated instruments and evidence of adequate reliability and validity is provided (see next chapter). It is worth mentioning that OCBs were measured using an 'other-report' method (i.e. use of peer-reports) in order to prevent possible over-report bias and common method variance given that other measures used were based on self-reports. Notwithstanding the positive attributes of the adopted measures, the research was evaluated as '*good*', given that measures of employee health (e.g. physical burnout and mental health) and stressors were based on self-reports (i.e. not on objective indicators).

3.6.4 Methods of Statistical Analysis. The fourth criterion - method of statistical analysis – deals with view that high quality longitudinal designs rely on more advanced or sophisticated statistical techniques. Researchers have argued that there are three general methods of analysing longitudinal data in testing causal relationships: (1) comparisons of cross-

lagged correlations, (2) hierarchical multiple regression, and (3) structural equation modeling (SEM). Given that the current research seeks to rely on a combination of SEM procedures and multiple regression analyses to examine the main research hypotheses, the research is thus classified as '*good'*.

3.6.5 Nonresponse Analysis. The current research seeks to use both preventative and analytical methods to address the issue of selective nonresponse bias. In terms of preventative methods, relevant contact details of participants were obtained on a separate form so as keep track of and locate participants for the second wave of data-collection. Moreover, participants were informed heavily about their relevance and the need to participate in both waves of the research. However, participants were in no way coerced during these attempts. Consistent with the analytical recommendations of De Lange et al. (2003), the current research tests for selective nonresponse by examining differences between responders and nonresponders on all study variables, as well as comparing associations among the key variables at the baseline period (Time 1) for the responders and nonresponders. As a result, the research was evaluated as '*very good'* in the area of nonresponse analysis.

3.7 Summary and Conclusions

The current research has been judged as at least good (***) on all five criteria based on the evaluative framework suggested by De Lange et al. (2003). This research is manifested as a complete two-wave panel design which relies on a one year time lag (with accompanying empirical and methodological support/justification), utilises well-validated and supported research survey measures, employs advanced SEM and multiple regression analyses, and conducts various

nonresponse analyses to detect selective nonresponse bias (see Table 6). Further information about the sample and associated sampling procedures, research measures, and overall data-collection and administrative procedures at the first wave of panel design are thoroughly discussed in the next chapter (i.e. Study 1). The cross-sectional statistical analyses of the hypothesised model and other alternative models advanced in this research are also presented and discussed for Time 1 in the upcoming chapter.

Table 6:

Assessment of Current Longitudinal Research Design

	CRITERIA				
	Design	Time Lag	Measure	Method of Analysis	Nonresponse Analysis
Current Research	***	***	***	***	****

Note. * = insufficient; ** =sufficient; *** = good; **** = very good. The current research has been judged as at least good on all five criteria.

Chapter 4: Study 1 - Direct, Mediated and Moderated Model Testing: A First Cross-sectional Assessment (Wave 1 Only)

4.1 Introduction

This chapter introduces Study 1 of the research and discusses the main research methods employed including the population and sampling procedures, measurement of variables and instrumentation, data-collection procedures, and data-analytical techniques. Given the two-wave structure of the methodology, this chapter discusses only the events of the first phase of the data-collection process (i.e. Time 1). Firstly, it provides the presentation of the descriptive and correlational statistical results regarding the main study variables. Secondly, SEM techniques were used to examine and compare the fit of the direct effects and mediation models as conceptualised in Chapter 2. Thirdly, moderated structural equation modelling (MSEM) was used to examine the main hypothesised moderation model (with control and organisational support as moderators). This chapter concludes with a summative and critical discussion of the key findings derived from the model testing conducted on Time 1 data.

4.2 Methods

4.2.1 Research Context, Study Participants, Sampling and Data-collection Procedures at Time 1. The study population for this research comprised diverse categories of employees from different sectors in Barbados. Barbados is a small island territory in the English speaking Caribbean (a former British colonial state) and possesses a small open economy which is strongly dependent on tourism (its main

economic earner) and international trade which is another major source of foreign exchange. Historically, the country was heavily reliant on the agricultural industry but its economy has been diversified to include other key productive sectors. These productive sectors which contribute to GDP include the wholesale and retail, finance and business, and government services sectors. Barbados is the only Caribbean island territory recognised as a Developed State by the United Nations. The total country population is estimated at 285,000, with a large majority of the population classified under African descent (93%), and 3 percent classified under European descent and those of mixed race accounts for another 3 percent. The working population is estimated at 214,000 with females comprising 52 percent of this total (see Appendix G for other social and historical information on Barbados).

With reference to this thesis, the chosen population consisted of office workers, sales workers, clerical officers, and administrative personnel employed in the financial, retail/wholesale, manufacturing, tourism, and governmental sectors on the island. The reliance on diverse populations has been argued to provide more variation (or exposure contrast) in work characteristics and behaviours (e.g. stress, OCBs, etc) than homogeneous populations; this variation is considered even "more important than the representativeness of the sample under study" (De Lange et al., 2003, p. 287). For example, Kristensen (1995) considered sample representativeness to be of secondary importance, given the primary purpose of studying causal relationships among variables under investigation. An effort to maintain sample representativeness was made by utilising a systematic random sampling procedure in which employee lists as sampling frames were obtained to aid in random sample selection. However, there were a high number

of cases (approximately 55% of the sample) in which such frames were unavailable, and these participants were selected based on non-random procedures. Nevertheless, care was taken to ensure that bias was kept to a minimum.

Sample size selection is largely influenced by the method of analysis (e.g. SEM and regression analysis) and the need to maintain adequate statistical power. Given that the main study variables in SEM are represented as latent variables, each measured by at least three indicators. A number of interaction effects were also examined in the models. Soper (2013) recommended the power analysis approach to secure the minimum sample size necessary for maintaining adequate power. This approach requires the following pieces of information: (1) anticipated effect size (which was set at a medium effect of .30), desired statistical power (which was set at .80), number of latent variables (9 latents across two time waves: 18 latents in total), and number of indicator variables (29 indicators across two time waves: 58 indicators in total). Based on the power analysis calculator by Soper, a minimum sample size of 500 participants was sought for this study, however, in order to control for attrition, 700 employees were sought after.

At Time 1, employees were targeted as the main participants across twenty-three (23) organisations across a range of industries and occupations. Letters seeking participation from the organisation as well as the face-to-face introductory meetings with general managers and/or HR managers were conducted to inform management about the nature and purpose of study and to ultimately secure access to participants employed in the selected organisations. As previously mentioned, where sampling frames in the form of employee lists were available, systematic random sampling was

employed in which every *n*th employee on the list was selected based on the calculated sampling interval for the selected organisations. Once access was obtained, these chosen employees were similarly informed about the study, and the importance of their participation in both waves of the research. Participants were not forced to participate in the research, and were made aware of their rights to voluntary participation and withdrawal in the data-collection phases. Given the need to track and locate participants for the second wave (Time 2), relevant contact details including names (or nicknames), email addresses, and telephone and mobile numbers were sought on a separate sheet which was adequately secured and was used only for the retrieval of participants at Time 2. Participants were strongly assured that all information (including their private contact details) would be kept in the strictest confidence, and no information would be shared with anyone internal and external to the organisational setting.

It is worthy to note here that the primary measurement of OCBs was done using separate peer-report assessment forms and selected employees were asked to give these forms to co-workers who usually observe or interact with them on a daily basis at work. Co-workers were asked to provide an assessment of OCBs for the selected employees, and these assessment forms were returned directly to or collected by the lead researcher. In most organisations, the data-collection was allowed to occur within a selected period in which employees were made available (or free from work duties) to complete the questionnaires. In other organisations, questionnaires were dropped off and collected on the following day, or in a very few cases, in the following week. Overall, participants were reminded that this data-collection phase was only the first phase of their participation, and that they will be contacted in one year

to complete the same questionnaire to permit longitudinal assessments. The overall data-collection phase at Time 1 spanned from November of 2010 to January of 2011. The final sample size obtained at the end of this wave was 562 participants, indicating an 80 percent response rate.

Based on analysis of the demographic profile of the sample, 65 percent were female and 35 percent were male; 90 percent were those 50 years and younger (45% in 19-34 age group and 45% in 35-50 age group); 60 percent were single; more than 50 percent were from clerical, administrative and non-technical positions or jobs; and 92 percent were full-time employees of medium to large-sized organisations. The mean length of work experience in the organisation was 8.06 years, with a median estimate of 5 years.

4.2.2 Research Measures. Previously validated measures with accompanying evidence of good validity and reliability were used. Based on the proposed model, the key independent variables were organisationally- and individually-oriented citizenship behaviours, and the outcome variables were job attitudes (i.e. job satisfaction and organisational commitment), stressors (i.e. role ambiguity, role overload, and work-family conflict), and health-related variables (i.e. physical exhaustion and work-related depression). The measures are described below.

4.2.2.1 OCBs. Two dimensions of organizational citizenship behaviours - OCB-O and OCB-I – were measured using a 14-item scale developed by Williams and Anderson (1991). This scale comprises two subscales with 7 items measuring OCB-O and 7 items measuring OCB-I. The scale was selected for a number of important reasons. Firstly, the scale conforms to a recent operationalisation of OCB adopted in this research. This approach distinguishes behaviours directed at

individuals which concern helping those who are absent or taking a personal interest in another co-worker, from those behaviours directed at the organisation which deal with protecting organisational property and adhering to informal organisational rules and regulations. Secondly, this scale allows for a concise measurement of OCB-O and OCB-I which helps in reducing the length of the instrument. Despite its shortened form, this scale has reported high reliability and validity. For example, internal coefficient alphas for both scales have been reported at values of .70 and higher in prior research (Morrison & Phelps, 1999; Williams & Anderson, 1991, Van Dyne & LePine, 1998). Exploratory factor analysis has shown that items loaded under their respective dimensions as hypothesised (Williams & Anderson, 1991). To address single source bias and self-report problems in the current study, sampled employees were asked to distribute this specific questionnaire to co-workers (or work-related peers) who were asked to rate their OCBs at work on a five-point scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). These raters were asked to seal this questionnaire in a confidential envelope and place it in a box provided at workplace. These questionnaire forms were then collected. A sample item for the OCB-O scale was: "Conserves and protects organizational property", and a sample item for the OCB-I scale was: "Helps others who have been absent".

4.2.2.2 Job Attitudes. Job satisfaction was measured using a 3-item overall job satisfaction scale developed by Cammann, Fichman, Jenkins, and Klesh (1983). This scale was developed as part of the Michigan Organizational Assessment Questionnaire (OAQ), and provides a global indication of worker satisfaction with a job. A sample item was "In general, I like working here". Prior research has shown acceptable levels of reliability (Pearson, 1991; Siegall & McDonald, 1995) and

validity (Sanchez, Kraus, White, and Williams, 1999). Employees were asked to rate this measure on a 7-point scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree).

Organisational commitment was measured using a 9-item overall commitment measure developed by Cook and Wall (1980). Prior research revealed high scale reliabilities above .70 for this measure (Oliver, 1990; Sanchez & Brock, 1996), and its validity was also deemed acceptable (Oliver, 1990). Employees were asked to rate this measure on a 7-point scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). A sample item was "I feel myself to be part of this organisation".

4.2.2.3 Role stressors. Three categories of role stressors were used in this research: role overload, work-family conflict, and role ambiguity.

Role overload was measured using a 3-item measure from Schaubroeck, Cotton, and Jennings (1989) and Beehr, Walsh, and Taber (1976). This scale has been used in a recent study by Bolino and Turnley (2005), and its reliability coefficient was reported to be .84. Employees were asked to rate this measure on a 5-point scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). A sample item was "The amount of work I am expected to do is too great".

Work-family conflict was measured using a 5-item work-family conflict scale developed by Netemeyer, Boles, and McMurrian (1996). This scale has been reported to have high reliability (ranging from .88 to .89) and validity (Netemeyer et al., 1996). Employees was asked to rate this measure on a 7-point scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). A sample item was "The demands of my work interfere with my home family life".

Role ambiguity was measured using 6-item scale developed by Rizzo, House, and Lirtzman (1970). This scale has

been reported to have good reliability (above .70) and validity (Jex, 1999; Netemeyer, Burton, & Johnston, 1995). Employees were asked to rate this measure on a 7-point scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). A sample item was "I know exactly what is expected of me (reversed)".

4.2.2.4 Health-Related Variables. Physical exhaustion (a measure of physical health) was measured using a 7-item Likert-type scale derived from Pines and Aronson's (1988) Burnout Inventory. This physical exhaustion scale is said to be a good indicator of physical well-being and depicts the extent to which individuals suffer from fatigue, low energy, and weakness. The scale has been found to be both reliable (above .70) and valid in prior research (Enzmann, Schaufeli, Janssen, & Rozeman, 1998). Employees were asked to indicate the extent to which they exhibited a range of experiences (e.g. being tired, being weary, and feeling weak, etc) related to their physical health over the last month, ranging from 1 (Never) to 5 (Always).

Work-related depression (a mental health measure) was measured using a 6-item Likert-type scale developed by Caplan, Cobb, French, Van Harrison, and Pinneau (1980). Work-related depression has been argued to be a good indicator of an employees' mental health at work and has been used in prior research as key measure of mental health or psychological well-being (Jalajas, 1994). The scale has been reported to have high reliability (alphas above .70) and validity in prior research (Jalajas, 1994). Employees were asked to rate this measure on a 4-point scale ranging from 1 (never or a little of the time) to 4 (most of the time). A sample item was "I feel depressed".

4.2.2.5 Organisational Support. Organisational support was measured by 9-item perceived organisational support (POS) scale derived from Eisenberger et al. (1986). This scale

measures employee perceptions about the level of support that their organisation offers. The scale has good reliability (alphas above .70) and validity (Lynch, Eisenberger & Armeli, 1999; Moorman, Blakely, & Niehoff, 1998). Employees was asked to rate this measure on a 7-point scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). A sample item was "The organisation really cares about my well-being".

4.2.2.6 Perceived Control. Perceived control was measured by a 4-item job autonomy scale derived from the Hackman and Oldham's (1975) Job Diagnostic Survey. Job autonomy, as an indicator of worker control, concerns the extent to which employees are allowed to exercise freedom, independence, and discretion when carrying out their job tasks. The job autonomy scale has reported adequate levels of reliability (alphas above .70) and validity (Dunham, 1976; Dunham, Aldag & Brief, 1977). Employees was asked to rate this measure on a 7-point scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). A sample item was "I have a lot of say over what happens on my job."

Overall, the preliminary instrument comprising the measures above was pre-tested to assess and improve the suitability and overall face validity. The pre-test assessment involved a small survey of 25 employees in order to obtain pilot data for the study's measures. These participants were also asked to evaluate the quality of the measures and associated items used on the questionnaire. Based on participants' suggestions, no changes to the overall instrument were necessary. These measures which were used at Time 1 were also used with the same participants at Time 2.

4.2.3 Data Analysis Procedures. The key objective of Study 1 was to estimate and assess the three hypothetical models guiding this research using the data collected at Time 1

(n = 562). Hence, the analyses conducted were based on cross-sectional data. The upcoming results section consists of a number of key segments detailing various analyses relevant to model testing.

In this first section, descriptive statistics (means and standard deviations) and Pearson product moment correlations were conducted to examine the main study variables and their associations. Internal consistency reliabilities for all study variables/measures were also computed and presented in this section.

Secondly, confirmatory factor analyses (CFA) were used to examine the general measurement model depicting all relations among all observed study variables (indicators) and their respective latent factors. These analyses were necessary to ascertain the overall usefulness or overall fit of the measurement model prior to estimating and testing the structural models in this study. Tests of convergent and discriminant validity of the measurement model were also conducted.

Thirdly, the estimation and testing of the direct effects (Model 2) and mediation (Model 3) cross-sectional models (based on the Time 1 data) were conducted and their model fit were assessed and compared to examine their suitability.

Finally, a separate estimation of the study's main proposed model (broken down into five moderation models with perceived control and organisational support as moderators) was estimated and examined with Time 1 data. The overall acceptability and fit of this model was assessed to determine the significance of the proposed interaction effects of control and organisational support.

4.3 Results

4.3.1 Descriptive Statistics and Correlations. Table 7 shows means and standard deviations, intercorrelations, and internal reliabilities of main study variables. OCB-I and OCB-O were significantly and positively correlated with organisational commitment, job satisfaction, perceived organisational support and control, and significantly and negatively correlated with role ambiguity and work-related depression. The correlation between OCB-I and OCB-O was positive and strong ($r = .61$, $p < .001$). Internal reliabilities presented in the diagonal were all above .70, indicating acceptable levels of internal reliabilities.

Table 7:

Descriptives, Correlations, and Reliabilities of Study Variables at Time 1

	M	**SD**	OC	JS	RA	WFC	RO	PE	WD	POS	PC	OCBI	OCBO
OC	5.19	1.02	(.77)										
JS	5.56	1.31	0.69	(.74)									
RA	2.41	1.08	-0.50	-0.55	(.83)								
WFC	2.76	1.78	-0.11	-0.12	0.15	(.95)							
RO	2.82	1.12	-0.22	-0.24	0.24	0.40	(.90)						
PE	3.37	0.83	0.30	-0.34	0.29	0.37	0.50	(.91)					
WD	3.21	0.49	0.49	-0.54	0.39	0.19	0.31	0.50	(.82)				
POS	4.52	1.40	0.62	0.56	-0.50	-0.13	-0.25	-0.30	-0.43	(.92)			
PC	4.55	1.53	0.44	0.46	-0.47	-0.01	-0.10	-0.18	-0.33	0.59	(.86)		
OCBI	3.84	0.63	0.23	0.20	-0.17	0.04	0.02	0.00	-0.17	0.20	0.19	(.85)	
OCBO	3.94	0.65	0.16	0.20	-0.20	0.02	0.01	0.05	-0.18	0.21	0.20	0.61	(.80)

Note. N = 562 (Time 1). All correlations above 0.1 are significant at the .05 level. OC = organisational commitment, JS = job satisfaction; RA= role ambiguity; WFC = work-family conflict; RO = role overload; PE = physical exhaustion; WD= work-related depression; POS = perceived organisational support; PC = perceived control; OCBI = organisational citizenship behaviour at individual level; OCB-O = organisational citizenship behaviour at organisational level.

4.3.2 Confirmatory Factor Analysis: Test of the Overall Measurement Model. Confirmatory factor analysis (CFA) is a method of testing how well observed variables (indicators) represent theoretically derived constructs known as latent factors or unobserved variables (Hair, Black, Babin, Anderson, & Tatham, 2010). All possible correlations among observed variables with their latent factors, and correlations among latent factors themselves represent a measurement model. CFA analyses were estimated using AMOS 19 software with maximum likelihood estimation (MLE) to examine the overall fit of measurement model which is necessary prior to estimating and testing structural models in latent SEM (Anderson & Gerbing, 1988).

Due to the excessive number of items underlying constructs and inherent problems in using items as direct indicators of latent factors, it was necessary to implement partial disaggregation – i.e. use of parcels as indicator variables for latent constructs. There are several theoretically and empirically driven arguments for the use of parcelling in CFA and SEM. Theoretically, the pragmatic-liberal philosophical perspective on parcelling has noted that the use of parcels offer greater benefits for the exploration of cleaner and more thorough measurement relations between indicators and latent variables (Little, Cunningham, Shahar, & Widaman, 2002). Empirically, item-level data, when compared to parcelled data, have been shown to create a range of problems due to their lower reliability, lower communality, a lower ratio of common-to-unique factor variance, and higher probability of distributional distortions and violations (Bandalos & Finney, 2001).

Given that fewer model parameters are required when parcelled indicators are used compared to item-level indicators,

parcels are preferred due to the parsimony generated in model estimation. Moreover, parcelled indicators, compared to item-level indicators, are (1) less likely to have correlated residuals or dual loadings (as unique variances are lower), (2) produce better model fit statistics in SEM, and (3) result in reduction of different sources of sampling error (Little et al., 2002; MacCallum, Widaman, Zhang,, & Hong, 1999). In addition, using many items as indicators can lead to unwanted sources of variation and misspecification, and "parceling the items into fewer indicators would likely eliminate or at least reduce the unwanted source or sources and would lead to better initial model fit than if the items were used as indicators of constructs" (Little et al., 2002, p. 161). Finally, parcels have been shown to have better internal reliabilities and are more likely to result in more normally distributed data (even when used with nonnormal data) than do item-level indicators (Thompson & Melancon, 1996). Notwithstanding the positive advantages of parcelling, Hau and Marsh (2004) have highlighted that "researchers should be more cautious when using two-indicator factors [in SEM] and that item parcels should preferably not be used unless there are sufficient items to construct at least three or four parcels per factor" (p.344). In prior studies, researchers (Graves, Ruderman, Ohlott, & Weber, 2012; Kuhnel, Sonnentag, & Westman, 2009) have only created parcels for constructs comprising six or more items (where at least three parcels can be formed with each consisting of two items combined), whereas constructs with fewer than six items were not represented by parcelled indicators due to insufficient items to construct at least three parcel-level indicators. Hence, the present study follows these recommendations and sought to create parcels only for constructs with six or more items in order to obtain at least three or four parcel-level indicators for the

SEM analyses. Parcels were not constructed for other constructs with fewer than six items.

Scientifically validated procedures for parcelling were followed (Yuan, Bentler, & Kano, 1997) in which exploratory factor analyses were used to examine the structure of items measuring various constructs separately. Items were rank-ordered on the basis of the size of their factor loadings, and pairs of items with lowest and highest loadings were successively placed into one of three parcels (Hall, Snell, & Foust, 1999; Little et al., 2002). In this research, with the exception of job satisfaction (three items), role overload (three items) and work-family conflict (five items), all factors (OCB-I, OCB-O, role ambiguity, organisational commitment, physical exhaustion, and work-related depression) had three parcelled indicators, as suggested by Hau and Marsh (2004). Moreover, these item parcels were found to have adequate levels of internal consistency reliability. The measurement model depicting relations with parcelled indicators and their respective latent factors, and relations among the latent factors were estimated using CFA. The overall fit of the measurement model was highly favourable (χ^2 = 825.50, df = 341, $p < .001$; RMSEA = .05 [C.I: .04 to .05, p = .44], CFI = .96, NFI = .95, IFI = .96). Although the chi-square goodness-of-fit test for the model was found to be statistically significant, others (Kline, 2010) suggested that it is better to rely on other model fit statistics due to the sensitivity of the chi-square test to large sample sizes. Values of CFI, NFI and IFI above .95 indicate a very good level of model fit (and values above .90 indicate only adequate/good fit), whereas values of RMSEA below .10 indicate acceptable fit (and values of 0.05 or below indicate very good fit). Confidence intervals and p-values for RMSEA were computed to obtain more rigorous assessments. Larger p-

values (above .05) are deemed desirable. The model fit for this measurement model with the parcelled indicators was superior to the measurement model with all item-level indicators (χ^2 = 3418.34, df = 1289, $p < .001$; RMSEA = .05 [C.I: .05 to .06, p = .001], CFI = .87, NFI = .85, IFI = .87), reinforcing the significance of parcelled data in SEM.

Further analyses were conducted to examine the overall construct validity of the measurement model by assessing convergent validity and discriminant validity of the measures used. Testing for convergent and discriminant validity is critical to assessing the overall validity of a measurement model in SEM. Hair et al. (2010) claimed that these tests provide a more rigorous assessment of the measurement model than that provided from model fit statistics alone.

Convergent validity concerns the extent to which the indicators underlying a latent factor share a high degree of common variance. The major criteria assessed by an inspection of the size of factor loadings and their significance, average variance extracted values (AVEs), and construct or composite reliabilities. In terms of factor loadings, all standardized loadings were statistically significant ($p < .001$) and ranged from as low as .47 to as high as .93. According to Hair et al. (2010), standardized loadings for latent-to-indicator relationships should be at least .50 to provide evidence of convergence. AVEs represent the mean variance extracted for indicators loaded on a single latent factor, and are popular summary measures for convergence (Fornell & Larcker, 1981; Hair et al., 2010). These statistical measures examine the proportion of variation which the latent factors explain in their respective indicators. An AVE of .5 or more is deemed as an acceptable cut-off value for adequate convergence. With the exception of organisational commitment (AVE = .42), the AVEs

were above the .50 cut-off mark. However, Fornell and Larcker (1981) claimed that the AVE measure is more conservative than the composite reliability measure and hence the former is likely to underestimate convergent validity estimates. These authors suggested that composite reliabilities are better measures of convergent validity, and that convergent validity can be easily established based on the evidence provided by composite reliabilities alone. Composite reliabilities of at least .60 indicate adequate evidence of convergent validity (Fornell & Larcker, 1981). All latent factors (including organisational commitment) reported acceptable levels of composite reliabilities (see Table 8).

Discriminant validity refers to the degree to which a latent factor is distinct from other latent factors in a measurement model. This form of validity was examined by comparing the AVEs for any two latent factors with the squared correlations between these two latent factors. Evidence of discriminant validity is found when the AVEs of individual latent factors are larger than their squared correlations (Hair et al., 2010). With the exception of the squared correlations between organisational commitment and job satisfaction (r^2 = 0.88), OCB-I and OCB-O (r^2 = 0.62), and organisational commitment and role ambiguity (r^2 = 0.46), all other squared correlations between other pairs of latent factors were lower than the respective AVEs of the individual latent factors within a particular pair of variables. It is worthy to note that the AVE approach to assessing discriminant validity fails to account for the variance in the correlation between two latent factors as well as the variances in the AVEs of the same two latent factors (Shiu, Pervan, Bove, & Beatty, 2011). Hence, it was necessary to follow up this test of discriminant validity with more rigorous tests such as the nested model approach (Bagozzi & Philips, 1982) and 95 percent

confidence interval approach (Bagozzi, Yi, & Phillips, 1991). The nested model approach involves conducting a statistical comparison between a constrained pair of latent factors (such that the correlation between the two latent factors is set to unity) with an unconstrained pair of the same latent factors (such that the correlation between two latent factors is freely estimated) based on the chi-square difference test (Bagozzi & Philips, 1982; Bagozzi et al., 1991). A chi-square difference value exceeding 3.84 ($\Delta df = 1$) suggests that the correlation between the pair of factors is significantly different from one at the 5 percent level of significance (Shiu et al., 2011). If the constrained and unconstrained models differ significantly on chi-square difference test, evidence of discriminant validity between pairs of latent factors is established (Bagozzi & Philips, 1982; Bagozzi et al., 1991). The nested model approach concerns testing one pair of latent factors at one time. For all latent factors in the research, the unconstrained models (where the correlation between a pair of latent variables was freed) provided significantly better fit to the data than did the constrained models (where the correlation between the same pair of latent variables was set to unity). Hence, the nested model approach provided adequate evidence for discriminant validity for all study variables in the research. The confidence interval approach involves examining the 95 percent confidence intervals for correlations between each pair of latent factors. If confidence intervals do not contain a value of one, evidence of discriminant validity is revealed. Based on this approach, it was found that none of the confidence intervals for correlations between pairs of latent factors in the research contained a value of 1. These results further confirmed evidence of discriminant validity among all latent factors in the research. Shiu et al. (2001) have argued that the nested model approach and the 95

percent confidence interval approach set a minimum requirement for assessing discriminant validity among latent variables in SEM.

Overall, these tests demonstrated sufficient evidence of convergent and discriminant validity of the measures examined in the overall measurement model. It was thus necessary to estimate the structural portions of the model. Table 9 shows the summary methods for assessing convergent and discriminant validity of the measurement model

Table 8:

AVEs and CRs for Convergent Validity Assessment of Constructs

CONSTRUCTS	**AVE**	**CR**
OCB-I	.58	.80
OCB-O	.52	.72
Role Ambiguity	.63	.82
Role Overload	.76	.90
Work-Family Conflict	.83	.95
Job Satisfaction	.52	.76
Organisational Commitment	.42	.70
Physical Exhaustion	.76	.91
Work-Related Depression	.53	.76

Note. AVE = Average variance extracted estimates; CR = Composite reliabilities

Table 9:

Methods for Testing Convergent and Discriminant Validity

Methods of Convergent and Discriminant Validity	**Assumptions/Criteria**
Convergent Validity:	
AVEs	*AVEs for each latent construct must be at least .50.*
Item Loadings	*All item loadings for each latent construct must be statistically significant.*
Composite reliabilities	*Composite reliabilities for latent constructs should be at least .60*
Discriminant Validity:	
AVEs and Squared Correlations	*AVEs for a construct should be higher than the squared correlation between that construct and other constructs*
Nested Model Approach	*This approach involves comparing the model fit statistics (chi-square different values) between constrained and unconstrained models. Constrained models have correlations set to unity, whereas unconstrained models allow correlations among latents to be freely estimated. Significant chi-square differences between these models provide evidence for discriminant validity.*
95 Percent Confidence Interval Approach	*This approach involves assessing whether confidence intervals among pairs of correlated factors contained a value of 1. Confidence intervals that do not contain 1 provide evidence for discriminant validity*

4.3.3 Tests of Structural Models: Direct Effects and Mediation Model. Based on Anderson and Gerbing's (1988) two-step estimation approach to SEM, once acceptable fit based on CFA is obtained, the structural models were estimated subsequent to the estimation of the overall measurement model. The direct effects model consisted of direct paths from OCB-I and OCB-O (latent exogenous variables) to job satisfaction, organisational commitment, role ambiguity, role overload, work-family conflict, physical exhaustion and work-related depression (latent endogenous variables). Given that the multiple endogenous variables were examined simultaneously, the residual terms of these variables were allowed to correlate. This direct effects model was found to have good fit (χ^2 = 825.50, df = 341, p < .001; RMSEA = .05 [C.I: .05 to .06, p = .44], CFI = .97, NFI = .95, IFI = .97, AIC = 1013.50).

The mediation model depicted the stressor variables - role ambiguity, role overload, and work-family conflict - mediating the effects of OCB-I and OCB-O on job attitudes (i.e. job satisfaction and organisational commitment) and health-related variables (physical exhaustion and work-related depression). Hence, the residual terms among the three mediators (role ambiguity, role overload, and work-family conflict) were allowed to correlate, and the residual terms among the outcome variables of job satisfaction, organisational commitment, physical exhaustion and work-related depression were also allowed to correlate. This mediation model similarly reported a good level of model fit (χ^2 = 850.84, df = 349, p < .001; RMSEA = .05 [C.I: .05 to .06, p = .39], CFI = .95, NFI = .94, IFI = .95, AIC = 1022.84).

A chi-square difference test between the direct effects and mediation model could not be conducted since neither model was a nested model in this structural model analysis;

hence, it was necessary to conduct an empirical comparison of these models based on the Akaike's information criterion (AIC) statistic. The AIC statistic is a popular measure used to compare non-nested models in SEM research (Kline, 2011). A lower AIC statistic indicates a more parsimonious model and is preferred. Based on the statistical comparisons between the direct effects model (AIC = 1013.50) and the mediation model (AIC = 1022.84), the direct effects model was preferred to the mediation model.

An examination of individual paths in the direct effects model revealed a number of significant paths. OCB-I had a significant and positive direct effect on organisational commitment (standardized path coefficient = .28, p = .02), and OCB-O had a significant and negative direct effect on role ambiguity (standardized path coefficient = -.34, p = .004). No other direct path relationships between the OCBs and the other outcome variables were found to be statistically significant (all ps > .05). Table 10 shows the path estimates derived from the direct effects model.

Table 10:

Estimates of the Direct Effects Model

	OCB-O	**OCB-I**	
	Unst. estimates (S.E)	Unst. estimates (S.E)	R^2 estimate
Job satisfaction	.18 (.09)	.06 (.09)	.08
Organisational commitment	.10 (.26)	.57*(.24)	.10
Role ambiguity	-.46*(.16)	.08 (.14)	.09
Role overload	-.01 (.07)	.03 (.06)	.001
Work-family conflict	-.01 (.12)	.04 (.11)	.002
Physical Exhaustion	-.20 (.11)	.16 (.10)	.02
Work-related Depression	-.04 (.05)	-.05 (.04)	.04

Note. Unst. Estimates = Unstandardised path estimates, S.E = standard errors.
* p <.05.

4.3.4 A Test of the Hypothesised Model: Interactive Effects of Control and Support. To estimate the main hypothesised model of the current research which depicted perceived control and organisational support as moderators of the effects of OCBs on job attitudes, work stressors, and health outcomes, moderated structural equation modeling (MSEM) analyses were performed. The main advantages of using MSEM over moderated regression analyses (MRA) are that (1) MSEM permits the assessment of measurement error, (2) MSEM provides measures of overall model fit, and (3) MSEM allows the simultaneous assessment of multiple independent and dependent variables within a single model structure.

An analysis of literature which documents a variety of methods for modelling latent interactions in MSEM revealed that one of the most popular and acceptable methods is one utilised by Mathieu, Tannenbaum, & Salas (1992) based on a review by

Cortina, Chen, & Dunlap (2001). Cortina et al. (2001) examined a number of methods for modelling interactions in SEM including the multi-indicator approaches of Kenny and Judd (1984) and Jaccard and Wan (1995), and the single indicator approaches of Joreskog and Yang (1996), Ping (1995, 1996), and Mathieu et al. (1992). Table 11 summarizes the approaches to modelling latent interactions including the residual-centering indicator approach by Little, Bovaird and Widaman (2006). Cortina et al. (2001) suggested that among these methods, the approach suggested by Mathieu et al. was "the simplest to implement…and the easiest to understand" (p.357). They also concluded that the approach of Mathieu et al. provided relatively similar results compared to the most elegant, multi-indicator methods, and is particularly useful for testing more complex theoretical models that include both mediated and moderated relationships. Clearly, this approach is highlighted to be more conceptually and operationally straightforward, and is least likely to produce convergence and estimation problems when testing fairly large models (Cortina et al., 2001). A number of recent studies in work stress and broader work psychological issues have effectively justified the use of and have relied on this approach to modelling latent interactions (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Bakker, van Veldhoven, & Xanthopoulou, 2010; Xanthopoulou et al., 2007). Given the high degree of empirical support and justification offered for its utility in MSEM, this research also employed the approach of Mathieu et al. (1992) to model latent interactions.

This approach involves first creating composite variables (the sum of individual indicators) for each latent exogenous variable (i.e. the independent variable, moderator variable, and their interaction) in the model. For the latent independent and moderator variables (e.g. OCB-I and support), their individual

composite variables are used as single indicators in the SEM. These composites have to be standardised (e.g. transformed into z-scores) prior to measuring their underlying respective latent variable (Mathieu et al., 1992). The loading (path) between each latent variable and its respective composite indicator is set to equal the square root of its reliability coefficient, and the error variances of each composite indicator were set to equal the product of their observed variances and one minus their reliability coefficients (Cortina et al., 2001; Joreskog & Sorbom, 1993). For the latent interaction term, its single indicator is a product of both standardised composites of the latent independent and moderator variables. This latent product indicator undergoes the same procedures above, in which its error variance is set to the product of its observed variance and one minus its reliability coefficient, and its loading with the latent interaction variable is set to the square root of its reliability coefficient. The estimation of the reliability coefficient of the interaction term is based on a formula by Bornstedt and Marwell (1978) in which the reliability of the interaction term equals the product of the reliabilities of the individual latent components which make up the interaction plus their squared correlation divided by one plus the squared correlation. This estimate is used for specifying the above measurement relations of the latent interaction term. Table 12 provides the steps involved in this approach and Figure 4 shows a diagrammatical representation of the mathematical approach to estimating latent interactions in SEM based on Mathieu et al. (1992), where r = reliability of composite and var. = variance of observed variable.

In this research, the hypothesised model was tested using a number of individual models in order to examine the effect of each latent interaction variable (along with its constituent parts:

the latent independent and moderator variables) on all endogenous latent variables simultaneously (job satisfaction, organisational commitment, role overload, role ambiguity, work-family conflict, work-related depression, and physical exhaustion). Overall, there were four individual (specific) models which tested various segments of the overall hypothesised model, and the fifth model tested the full hypothesised model.

The first moderation model (MM1) consisted of the exogenous latent variables of OCB-I, control, and their latent interaction and their effects on the seven endogenous latent variables. The second moderation model (MM2) consisted of the exogenous latent variables of OCB-O, control, and their latent interaction and their effects on the same endogenous latent variables. Hence, these first two moderated models examined the extent that perceived control was a significant moderator in the various OCBs-outcomes relationships. The third moderation model (MM3) consisted of the exogenous latent variables of OCB-I, organisational support, and their interaction and their effects on the seven endogenous latent variables, and the fourth moderation model (MM4) consisted of the exogenous latent variables of OCB-O, organisational support, and their interaction and their effects on these same endogenous latent variables. Hence, these last two moderation models tested the extent that perceived organisational support was a significant moderator in the various OCBs-outcomes relationships. Figures A1 to A4, in Appendix A, illustrated the aforementioned moderation models 1 to 4. A final moderation model (MM5) was examined in which the effects of all latent interaction terms above (along with the individual main effect OCB, support, and control variables) were estimated in a full model on the seven endogenous latent variables. Overall model fit of these models was evaluated

using the same model fit statistics used in the prior section (e.g. RMSEA, CFI, NFI, etc).

A significant interaction effect is evident when the path from the latent interaction to the endogenous variables in each model is statistically significant ($p < .05$). However, an interaction term's significance is conclusively confirmed by a statistical comparison between the fit of the model with the path from the latent interaction variable to endogenous variables and the fit of the model without this same path using a chi-square different test. If this chi-square difference test is statistically significant (indicating a significant improvement in model fit due to the interaction term's path to the endogenous variables), the significance of the interaction effect is confirmed.

In each of the moderation models estimated, the latent main effect and moderator variables (i.e. OCB-I and OCB-O with organisational support and control) were allowed to correlate, whereas correlations between each latent main effect variable (and moderator variable) and the latent interaction were not estimated. The residual errors of all seven endogenous latent variables were also allowed to correlate. These measurement specifications/requirements were consistent with prior research studies (e.g. Bakker et al., 2010) that relied on the approach based on Mathieu et al. (1992).

Table 13 shows the results of analyses of the five moderation models in SEM. Although an evaluation of the each model revealed initial evidence of significant interaction effects on a few of the dependent variables, statistical comparisons using chi-square difference tests revealed that there was no statistically significant improvement in model fit when paths from the interaction term(s) to the seven endogenous variables in each of the five models were freely estimated (compared with when these same paths were not present). These results,

alongside non-significant interaction effects based on simple slope analyses, suggested that perceived control and organisational support failed to moderate the hypothesised OCB-outcomes relationships, at least in the cross-sectional data collected at Time 1. Moreover, AIC statistics were lower in the models without the latent interaction paths than those in the models with the latent interaction paths. Hence, the results provide no supportive evidence for the hypothesised moderation model, at least for the Time 1 phase.

Table 11:

Approaches to Latent Interactions in SEM

Latent Interaction Approaches in SEM	Brief Description
Jaccard and Wan (1995) approach	- Based on Kenny and Judd (1984) approach, it involves developing multiplicative indicator terms between indicators of latent independent and moderator variables. These terms are used as indicators for a latent interaction variable in SEM.
Joreskog and Yan (1996) approach	- This approach uses a single cross-product term as an indicator for latent interaction variable in SEM.
Ping (1995) approach	- This approach is based on a single indicator for the latent interaction, and the product of the sums of the indicators acts as the sole indicator of this interaction.
Little et al. (2006)	- This procedure involves an unconstrained approach based on residual centering of indicators as a means of estimating latent interactions.
Mathieu et al. (1992)	- This approach uses a single product term as a sole indicator of a latent interaction. The product term is derived by multiplying the overall standardised scale scores together.

Table 12:

Steps involved in Matheiu et al. (1992) Approach

Steps in Matheiu et al. (1992) approach	Brief Description
Step 1: Creation of Composites	- Composites for latent independent and moderator variables are created by summing their item scores.
Step 2: Standardisation of Composite	- Each composite variable is standardised (includes centering and dividing by corresponding standard deviations).
Step 3: Creation of Latent Interaction	- Creating the latent interaction involves multiplying the standardised composites (independent and moderators) which leads to latent product.
Step 4: Specification of Measurement Properties for observed composites.	- The composite terms created in Step 2 are modelled in SEM and latent-indicator paths are fixed to square roots of reliabilities, and error terms of observed variables are set to equal to the product of their variances and one minus their reliability.
Step 5: Specification of the Measurement Properties for Latent Interaction	- The observed interaction variable from Step 3 is used to model the latent interaction variable. The latent-to-indicator paths are set to equal to the square root of reliability of product term, and observed variances are set to equal to product of their variances and one minus their reliability.

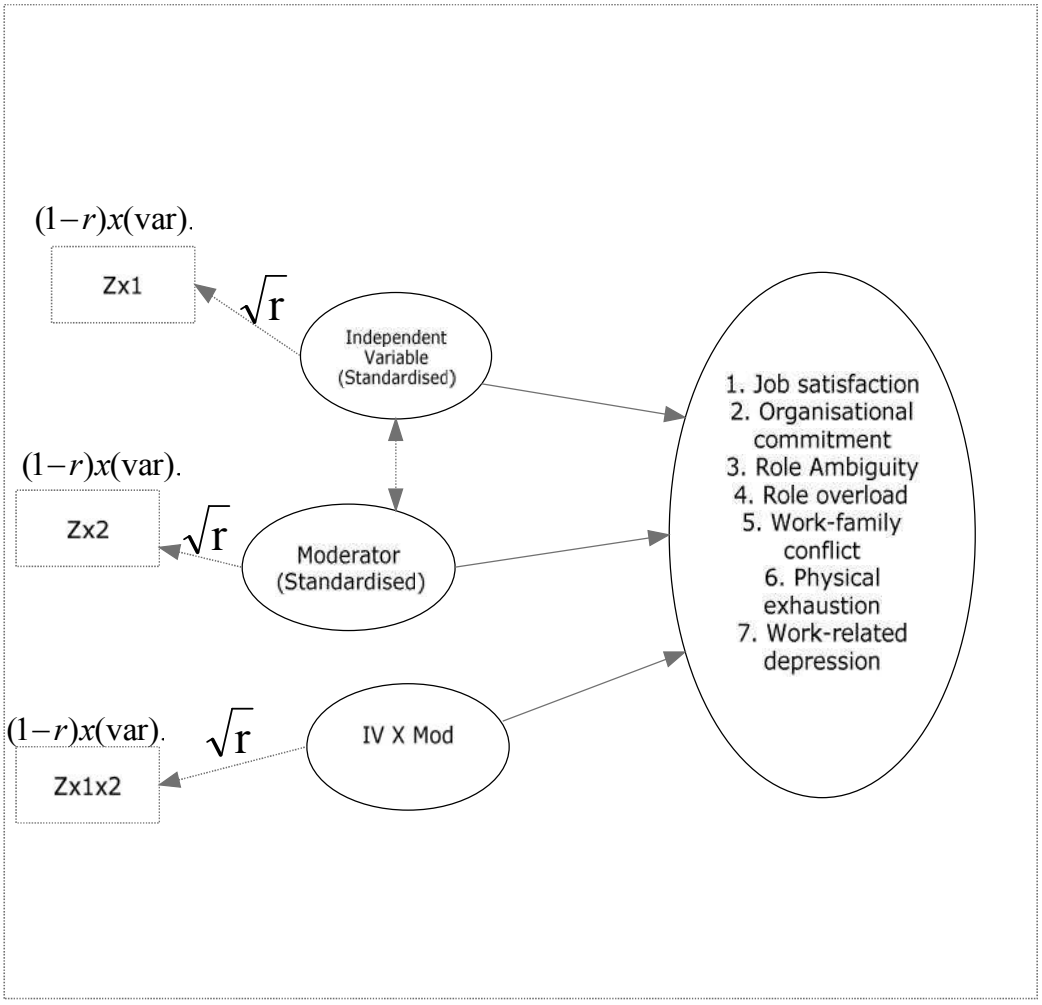

Figure 4. SEM-based approach to latent variable moderation

Table 13:

Model Comparisons of Hypothesised Moderated Models

	Model with paths from latent interaction to outcomes	Model without the paths from latent interaction to outcomes	Model comparison *Chi-square Difference*
Interaction effects:	χ^2 (*df*)	χ^2 (*df*)	$\Delta\chi^2$ (Δ*df*)
Control			
MM1: OCB-I × Control	694.26 (259)	705.49 (266)	11.23 (7) n.s
Model Fit Statistics	*RMSEA = .05, CFI = .96, NFI = .95, IFI =.97, AIC =878.26*	*RMSEA = .05, CFI = .96, NFI = .96, IFI =.96, AIC=875.49*	
MM2: OCB-O × Control	770.50 (260)	780.40 (267)	9.90 (7) n.s
Model Fit Statistics	*RMSEA = .05, CFI = .95, NFI = .94, IFI =.94, AIC =952.53*	*RMSEA = .05, CFI = .95, NFI = .94, IFI =.94, AIC=948.40*	

Note. n.s = not significant

Table 13 continued:

Model Comparisons of Hypothesised Moderated Models

	Model with paths from latent interaction to outcomes	Model without the paths from latent interaction to outcomes	Model comparison *Chi-square Difference*
Interaction effects:	χ^2 (*df*)	χ^2 (*df*)	$\Delta\chi^2$ (Δ*df*)
Organisational Support			
MM3: OCB-I × Organisational support	750.39 (259)	759.42 (266)	9.03 (7) n.s
Model Fit Statistics	*RMSEA = .05, CFI = .95, NFI = .94, IFI =.94, AIC =934.39*	*RMSEA = .05, CFI = .95, NFI = .94, IFI =.94, AIC=929.42*	
MM4: OCB-O × Organisational support	755.84 (259)	762.52 (266)	6.68 (7) n.s
Model Fit Statistics	*RMSEA = .05, CFI = .95, NFI = .94, IFI =.94, AIC=939.84*	*RMSEA = .05, CFI = .95, NFI = .94, IFI =.94, AIC =932.52*	
MM5: ALL INTERACTIONS	3298.3 (360)	3339.5 (388)	41.2 (28) n.s
Model Fit Statistics	*RMSEA = .10, CFI = .76, NFI = .71, IFI =.71, AIC =3564.72*	*RMSEA = .11, CFI = .76, NFI = .71, IFI =.71, AIC =3555.53*	

Note. n.s = not significant.

4.4 Study 1 Discussion

This chapter presented the main research methods and findings for the first Study in this thesis. Study 1 was aimed at testing the main proposed moderation model in which perceived organisational support and job control were assessed as moderators in the relationship between OCBs (OCB-I and OCB-O) and job attitudes (job satisfaction and organisational commitment), role stressors (role overload, role ambiguity, and work-family conflict), and health-related outcomes (physical exhaustion and work-related depression). Alongside this model, a direct effects model and a mediation model were assessed. The direct effects model examined the direct paths from OCBs to outcome variables of job attitudes, role stressors, and health-related outcomes, whereas the mediation model examined the indirect effects of OCBs on job attitudes and health-related outcomes via role stressors. All models were tested using SEM performed by AMOS 19 based on data collected from 562 participants sampled from the first wave of a two-wave panel design approach. Hence, the statistical tests and findings were based on a cross-sectional dataset captured at Time 1. A number of findings emerged and are worthy of discussion here.

Firstly, the SEM statistics provided very strong evidence supporting the structural model fits of the direct effects and mediation models. However, comparisons between these two models using AIC statistics revealed that the direct effects model (over the mediation model) emerged as the preferred model. An assessment of the individual paths revealed that OCB-I had a significant and positive direct effect on organisational commitment, and OCB-O had a significant and negative direct effect on role ambiguity. Hence, the results revealed that higher levels of OCB-I were associated with higher levels organisational commitment, and higher levels of OCB-O

were associated with lower levels of role ambiguity. These findings are consistent with those of Bateman and Organ (1983), who in a two-wave panel design, revealed that OCBs had a favourable effect on employee attitudes (including organisational commitment). They were also consistent with findings of Podsakoff et al. (2000) and Rasheed, Jehanzeb and Rasheed (2013) where OCBs were negatively related to role ambiguity and positively related to role clarity and perceptions. The findings provide support, albeit preliminary, for arguments in favour of the positive consequences of OCBs for OCB performers (Glomb et al., 2011; Spitzmuller & Van Dyne, 2012). These arguments suggest that performers of OCB are likely to exhibit more positive perceptions about the organisation, develop higher levels of loyalty towards their organisation, and enjoy better overall health and well-being. In light of the positive versus negative OCB debate, these findings are more in favour of the positive perspective of OCB in which OCBs represent positive extra-role behaviours that are beneficial and helpful to individual performers as well as individual and organisational targets.

It is worthy to reiterate here that the findings are cross-sectional in nature and caution is needed when interpreting the causal nature of relationships among the variables. Given that OCBs, role ambiguity and organisational commitment were measured and assessed in the same time point, it is impossible to assess the temporal nature or order of the variables as well as the causal direction (Taris & Kompier, 2003). Hence, it is equally likely that the findings demonstrate that organisational commitment positively predicts OCB-I as a criterion variable, and role ambiguity positively predicts OCB-O as a criterion variable. This latter interpretation has been consistent with theoretical arguments (e.g. affective events theory; AET) that

suggest that aspects of the psychosocial work environment (e.g. role stressors) as well as affective/attitudinal perceptions (e.g. job satisfaction and organisational commitment) have differential impacts on employees' performance and job behaviours at work (Weiss & Cropanzano, 1996). However, as suggested earlier, current methodological deficiencies, even in the presence of theoretical logic, precludes any causal interpretation to be established at this point.

Secondly, the SEM analyses of the proposed moderation model revealed no significant moderating effects of organisational support and job control in the relationships between OCBs and job attitudes, role stressors, and health-related outcomes. These model results suggest a lack of support for the moderation model, but given the cross-sectional nature of the data, the results remain only preliminary and inconclusive.

In conclusion, Study 1 assessed the structural validity of the proposed direct effects, mediation, and moderation models based on cross-sectional data, and revealed greater support for the direct effects model. Overall, these cross-sectional findings at Time 1 suggest that the direct effects model is indeed a superior model, although OCB-I was positively related to organisational commitment and OCB-O was negatively related to role ambiguity. Hence, the support for the direct effects is, at best, partial. In order to confirm these findings, it is important that similar empirical tests be conducted with these same models using cross-sectional data captured at Time 2. Although the samples between Time 1 and Time 2 are not independent, the emergence of consistent findings across the two time periods is likely to provide a better, albeit still limited, understanding about the relationships between OCBs and these outcome variables.

The next chapter provides similar cross-sectional analyses of the proposed moderation, direct effects, and mediation models based on the Time 2 dataset only. The results of Study 1 (Time 1 dataset) serve as a reference point against which the results of Study 2 can be compared and contrasted.

Chapter 5: Study Two: Direct, Mediated and Moderated Model Testing: A Second Cross-Sectional Assessment (Wave 2 Only)

5.1 Introduction

This chapter presents Study 2 which discusses the main research methods employed (e.g. sampling information and data-collection procedures) and data-analytical techniques during the second phase of the longitudinal research (Time 2). As in Study 1, this chapter also provides the presentation of the descriptive and correlational statistical results regarding the main study variables. SEM techniques were used to examine and compare the fit of the direct effects model and mediation effects model as conceptualised in Chapter 2. Moderated structural equation modelling (MSEM) was used to examine the main hypothesised moderation model of the research (with control and organisational support as moderators). This chapter concludes with a summative and critical discussion of the key findings derived from the model testing conducted on Time 2 data.

5.2 Methods

5.2.1 Study Participants, Sampling and Data-collection Procedures at Time 2. As stated in previous chapter, the study population for the research consisted of a range of diverse categories from various sectors in Barbados: financial, retail/wholesale, manufacturing, tourism, and governmental sectors on the island. Given the panel nature of the research design, it was necessary to obtain all participants

from Time 1 for this second phase for adequate longitudinal comparisons and analyses. At the end of the first phase, the total number of respondents in the sample was 562.

During data-collection in the first phase, strategic efforts were made to collect relevant contact information and utilise ID codes to ensure that participants could be located in the second phase and appropriately matched to their phase 1 data records. In the second phase, all participant organisations and employees were targeted. Participants were reminded of their prior participation and were generally willing to participate in the survey again. All participants were re-informed about the nature and purpose of the research prior to their participation. Participants were also reassured about their ethical rights to confidentiality and voluntary participation in the research. The peer assessment procedures of OCBs in Time 2 essentially mirrored those procedures conducted in Time 1, with participants selecting the same co-workers to provide peer reports of their OCBs. In most organisations, the data-collection was allowed to occur within a selected period in which employees were made available (or free from work duties) to complete the questionnaires. In other organisations, questionnaires were dropped off and collected on the following day. The overall data-collection phase at Time 2 spanned from November of 2011 to January of 2012. At the end of the data collection in Time 2, the sample size was 427 participants, resulting in an attrition rate of 24 percent from Time 1.

Based on analysis of the demographic profile of the sample, 62 percent were female and 38 percent were male; 90 percent were those 50 years and younger (45% in 19-34 age group and 45% in 35-50 age group); 60 percent were single; more than 50 were were from clerical, administrative and non-technical positions or jobs; and 93 percent were full-time

employees of medium to large-sized organisations. The mean length of work experience in the organisation is 7.91 years, with a median estimate of 6 years.

5.2.2 Research Measures. In keeping with the principal focus of the research and consistent with the requirements of a two-wave panel design, the structured questionnaire used in Time 1 was re-administered to the same participants, with no modifications or changes made to the measures utilised. Hence, the self-reported questionnaire included the measures of OCBs (Williams & Anderson, 1991), job satisfaction (Cammann et al., 1983), organisational commitment (Cook & Wall, 1980), role overload (Schaubroeck et al., 1989), work-family conflict (Netemeyer et al., 1996), role ambiguity (Rizzo et al., 1970), physical exhaustion (Pines & Aronson, 1988), work-related depression (Caplan et al., 1980), organisational support (Eisenberger et al., 1986), and perceived control (Hackman & Oldham, 1975).

5.2.3 Data Analysis Procedures at Time 2. Consistent with Study 1, the key objective of this Study was to estimate and assess the three hypothetical models guiding this research using the data collected at Time 2 (n = 427). Hence, the analyses conducted were based on cross-sectional data collected during this phase alone and mirrored the same sub-sections presented in the results segment of Study 1.

In the first section, descriptive statistics (means and standard deviations) and Pearson product moment correlations were conducted to examine the main study variables and their associations. Internal consistency reliabilities for all study variables/measures were computed and presented in this section.

Secondly, confirmatory factor analyses (CFA) were used to examine the general measurement model depicting all relations

among all observed study variables (indicators) and their respective latent factors. These analyses were necessary to ascertain the overall usefulness or overall fit of the measurement model prior to estimating and testing the structural models in this study. Tests of convergent and discriminant validity of the measurement model were also conducted to obtain a better assessment of the overall validity of the measurement model.

Thirdly, the estimation and testing of structural direct effects (Model 2) and mediation (Model 3) models (based on Time 2 data) were conducted and their model fit were assessed and compared.

Finally, a separate estimation of the study's main proposed model (i.e. Model 1: moderation model with perceived control and organisational support) was estimated and examined with the cross-sectional data. The overall acceptability and fit of this model was assessed to determine the significance of the proposed interaction effects of control and organisational support.

5.3 Results

5.3.1 Descriptive Statistics and Correlations. Table 14 shows means and standard deviations, intercorrelations, and internal reliabilities of main study variables. OCB-I was significantly and negatively correlated with role ambiguity, and perceived organisational support, and positively correlated with organisational commitment, work-family conflict and role overload. OCB-O was significantly and positively correlated with organisational commitment, and negatively correlated with role ambiguity. The correlation between OCB-I and OCB-O was positive and strong ($r = .57$, $p < .001$). Internal reliabilities

presented in the diagonal were all above .70, indicating acceptable levels of internal reliabilities.

Table 14:

Descriptives, Correlations, and Reliabilities of Study Variables at Time 2

	M	SD	OC	JS	RA	WFC	RO	PE	WD	POS	PC	OCBI	OCB0
OC	4.59	1.00	(.72)										
JS	5.48	1.29	-.21	(.70)									
RA	3.36	1.01	-.31	.06	(.73)								
WFC	3.51	1.68	-.20	.03	-.03	(.91)							
RO	2.77	0.81	-.43	.06	-.13	.31	(.70)						
PE	2.80	0.67	-.15	.05	.06	.59	.30	(.87)					
WD	2.11	0.54	-.14	.11	.01	.47	.17	.62	(.74)				
POS	3.91	1.05	.34	-.03	-.09	-.21	-.29	-.08	-.08	(.82)			
PC	4.50	1.58	.45	-.11	-.20	-.50	-.32	-.37	-.30	.51	(.92)		
OCBI	3.50	0.72	.24	-.07	-.29	.11	.13	.06	.07	-.17	-.02	(.88)	
OCBO	3.41	0.60	.23	-.07	-.23	-.04	-.03	-.05	-.03	-.07	.07	.57	(.70)

Note. N = 427 (Time 2). All correlations above 0.1 are significant at the .05 level. OC = organisational commitment, JS = job satisfaction; RA= role ambiguity; WFC = work-family conflict; RO = role overload; PH = physical exhaustion; WD= work-related depression; POS = perceived organisational support; PC = perceived control; OCBI = organisational citizenship behaviour at individual level; OCB-O = organisational citizenship behaviour at organisational level.

5.3.2 Confirmatory Factor Analysis: Test of the Overall Measurement Model. Similar to CFA procedures in Study 1, the overall measurement model depicting correlations between latent variables and their respective indicators, and intercorrelations among all latent variables was estimated and assessed. Scientifically validated procedures for parcelling were followed (Yuan et al., 1997), as was done in Time 1 data analyses in Study 1 (Hall et al., 1999; Little et al., 2002).

CFA analyses were estimated using AMOS software with maximum likelihood estimation (MLE) to examine the overall fit of measurement model which is necessary prior to estimating and testing structural models in latent SEM (Anderson and Gerbing, 1986). Similar to Study 1, the fit indices of CFI, NFI, IFI, and RMSEA as well as associated confidence intervals and p-values were reported. The overall measurement model fit was, at best, modest (χ^2 = 1992.6, df = 341, p < .001; RMSEA = .08 [C.I: .08 to .09, p = .10], CFI = .90, NFI = .89, IFI = .88). In order to obtain a more rigorous assessment, convergent and discriminant validity tests were conducted.

Convergent validity tests included the inspection of item loadings and their significance, AVEs, and construct or composite reliabilities. In terms of the item loadings, all standardised loadings were statistically significant (p < .001) and ranged from as low as .41 to as high as .99. AVEs were also inspected for each latent variable to measure the proportion of shared variance between latent variables and their respective indicators. With the exception of OCB-O (AVE = .42), all AVEs of the latent variables were above the .50 cut-off mark. Composite reliabilities were also used to provide more convincing evidence. Given the suggested .60 cut-off point (Fornell & Larcker, 1981), all latent variables (including OCB-O)

reported adequate levels of composite reliabilities (see Table 15).

Table 15:

AVEs and CRs for Convergent Validity Assessment of Constructs

	AVE	**CR**
OCB-I	.65	.84
OCB-O	.42	.64
Role Ambiguity	.50	.70
Role Overload	.71	.88
Work-Family Conflict	.69	.92
Job Satisfaction	.50	.71
Organisational Commitment	.58	.81
Physical Exhaustion	.66	.84
Work-Related Depression	.57	.79

Note. AVE = Average variance extracted estimates; CR = Composite reliabilities

Discriminant validity was assessed by comparing the AVEs for any two latent variables with the squared correlations between the same two latent variables. With the exception of the squared correlation between OCB-I and OCB-O (r^2 = .58), all other squared correlations between other pairs of latent factors were lower than the respective AVEs of the individual latent factors within a particular pair of variables. In order to obtain more substantial and definitive evidence for discriminant validity, the nested model and 95 percent confidence interval approaches were conducted. Similar to the findings in Study 1, these approaches provided more definitive support for discriminant validity among all latent factors in the measurement model.

Overall, convergent and discriminant validity tests advanced the necessary evidence for the overall construct validity of the measurement model and its components.

Therefore, it was deemed necessary to specify and estimate the structural portions or models.

5.3.3 Tests of Structural Models: Direct Effects and Mediation Models. The structural models were estimated subsequent to the estimation of the overall measurement model. The direct effects model consisted of direct paths from OCB-I and OCB-O (exogenous latent variables) to job satisfaction, organisational commitment, role ambiguity, role overload, work-family conflict, physical exhaustion and work-related depression (endogenous latent variables). Given that the multiple endogenous variables were examined simultaneously, the residual terms of these variables were allowed to correlate. This direct effects model was found to have an adequate fit (χ^2 = 1992.60, df = 341, p < .001; RMSEA = .08 [C.I: .08 to .09, p = .10], CFI = .90, NFI = .89, IFI = .90, AIC = 2180.57).

The mediation model depicted the stressor variables - role ambiguity, role overload, and work-family conflict – mediating the effects of OCB-I and OCB-O on job attitudes (i.e. job satisfaction and organisational commitment) and health outcomes (physical exhaustion and work-related depression). Hence, the residual terms among the three mediators (role ambiguity, role overload, and work-family conflict) were allowed to correlate, and the residual terms among the outcome variables of job satisfaction, organisational commitment, physical health and mental health were also allowed to correlate. This mediation model similarly reported an adequate model fit (χ^2 = 2006.02, df = 349, p < .001; RMSEA = .08 [C.I: .08 to .09, p = .10], CFI = .91, NFI = .89, IFI = .91, AIC = 2178.05).

As stated in the previous chapter, the AIC statistic is a popular measure used to compare non-nested models in SEM

research. Based on the statistical comparisons between the direct effects model (AIC = 2180.57) and the mediation model (AIC = 2178.05), the mediation model was deemed as the better model compared to the direct effects model, albeit marginally.

An examination of individual paths in the mediation model revealed a number of significant paths. OCB-I had a significant and positive path to work-family conflict and a significant and negative path to role ambiguity, whereas OCB-O had a significant and negative path to work-family conflict. In turn, work-family conflict had significant and positive paths to work-related depression and physical exhaustion. Role ambiguity had a significant and positive path to physical exhaustion, and a significant and negative path to organisational commitment. Sobel's tests were conducted to assess the indirect effects of OCBs (through work-family conflict and role ambiguity) on the above-mentioned outcome variables and the results confirmed full mediation ($p < .05$). Table 16 presents the various paths and estimates of the mediation model.

Table 16:

Path Estimates of the Mediated Effects Model

Independents to Mediator Paths			
	OCB-O Unst. estimates (S.E)	OCB-I Unst. estimates (S.E)	R^2 estimate
Role ambiguity	-.40 (.28)	-.46* (.22)	.15
Role overload	.28 (.27)	-.15 (.21)	.01
Work-family conflict	-.97** (.39)	.95** (.32)	.05

Mediators to Outcome Paths				
	Role Ambiguity	Role overload	Work-family conflict	
	Unstand. estimates (S.E)	Unstand. estimates (S.E)	Unstand. estimates (S.E)	R^2 estimate
Job Satisfaction	.08 (.05)	-.17*** (.05)	-.02 (.03)	.06
Organisational Commitment	-.38*** (.05)	.04 (.04)	.07 (.06)	.29
Physical Exhaustion	.05** (.02)	.01 (.02)	.17*** (.02)	.40
Work-related Depression	-.05 (.03)	.01 (.03)	.18*** (.02)	.23

Note. Unstand. Estimates = Unstandardised Estimates; S.E = standard errors.
* p <.05; **p < .01; ***p < .001

5.3.4 Tests of the Hypothesised Model: Interactive Effects of Control and Support. Similar to Study 1, MSEM was used to estimate the main hypothesised model of the current research which depicted that perceived control and organisational support as moderators of the effects of OCBs on job satisfaction, organisational commitment, role ambiguity, role overload, work-family conflict, physical exhaustion, and work-

related depression measured at Time 2. As in Study 1, this study utilised the same approach to assessing moderation in latent models advanced by Mathieu et al. (1992) in which standardised latent independent and moderator variables were represented by their composite standardised scores, as well as the latent interaction term which was represented by the product of the two standardised scores of the independent and moderator variables. Moreover, all MSEM procedures (as found in Study 1) for establishing the paths from latent to indicator variables and error term variances were followed.

Based on the Time 2 data, there were five structural moderation models (MM1 to MM5) in which organisational support and control were tested as moderators in the relationships between OCBs and the outcome variables. These were the same five moderation models tested in Study 1. The first four were specific models which tested various segments of the overall hypothesised model (e.g. OCB-I, control, and the seven outcome variables), and the fifth model tested the full hypothesised model (i.e. relationships among all exogenous and endogenous variables were assessed simultaneously). As previously discussed in Study 1, significant interactions were detected when the path from the latent interaction to the endogenous variables in each model is statistically significant ($p < .05$). Chi-square difference test statistics were also used for confirmation of significant interactions.

Table 17 shows the results of analyses of the five moderation models in SEM. Statistical comparisons using chi-square difference tests revealed that there were statistically significant improvements in model fit when paths from the interaction term(s) to the seven endogenous variables in each of the five models were freely estimated (compared to those models with these same paths omitted). These results as well

as simple slope analyses suggested that control and organisational support played significant roles as moderators in several OCBs-outcomes relationships. An evaluation of fit indices for the first four models revealed modest fit but the final model which included all modelled interaction terms presented less than adequate model fit. Given the poor fit of this model, its structural path results were not discussed. As a result, only the findings derived from the first four models were discussed. These models were sufficient to examine the moderating roles of control and support (albeit individually) in the OCBs-outcomes relationships.

Overall, control moderated the effects of OCB-I on work-family conflict, physical exhaustion, work-related depression, and role ambiguity. With respect to the interactive effects of OCB-I and control on both work-family conflict and physical exhaustion, the results revealed that when control was low, higher levels of OCB-I were associated with higher levels of work-family conflict and physical exhaustion; however, under high control, higher levels of OCB-I were associated with lower levels of work-family conflict and physical exhaustion. Moreover, higher levels of OCB-I were associated with higher levels of work-related depression when control was low, but the relationship between OCB-I and work-related depression was non-significant when control was high. In terms of role ambiguity, higher levels of OCB-I were associated with lower levels of role ambiguity under both low and high levels of control, but this relationship was much stronger under the high control condition.

Control also moderated the effects of OCB-O on physical exhaustion, work-related depression, and role ambiguity. The interactive effect of OCB-O and control on physical exhaustion revealed that higher levels of OCB-O were associated with lower

levels of physical exhaustion under low levels of control. Under high control, the relationship was non-significant. The interactive effect of OCB-O and control on work-related depression revealed that higher levels of OCB-O were associated with higher levels of work-related depression under high levels of control but the relationship was non-significant under low levels of control. The interactive effect of OCB-O and control on role ambiguity revealed that higher levels of OCB-O were associated with lower levels of role ambiguity under high levels of control but the relationship was non-significant under low levels of control.

Organisational support moderated the effects of OCB-I on work-family conflict, role ambiguity, work-related depression, and physical exhaustion. Firstly, higher levels of OCB-I were associated with higher levels of work-family conflict and physical exhaustion under low levels of organisational support, but higher levels of OCB-I were associated with lower levels of work-family conflict and physical exhaustion under high levels of organisational support. Secondly, higher levels of OCB-I were associated with lower levels of role ambiguity under both low and high levels of organisational support but this relationship was much stronger under the low organisational support condition. Thirdly, higher levels of OCB-I were associated with higher levels of work-related depression under low levels of organisational support but the relationship was non-significant under high levels of organisational support.

Organisational support also moderated the effects of OCB-O on work-family conflict, physical exhaustion and role ambiguity. Firstly, higher levels of OCB-O were associated with higher levels of work-family conflict and physical exhaustion under low levels of organisational support; however, higher levels of OCB-O were associated with lower levels of work-family

and physical exhaustion under high levels of organisational support. Finally, higher levels of OCB-O were associated with lower levels of role ambiguity under high levels of organisational support but the relationship was non-significant under low levels organisational support. Tables 18 and 19 show the path results of individual interactive terms in the first four moderated models. Figures A5 to A18 (in Appendix A) display the interaction graphs for the significant interactive terms in the models discussed above. Low and high levels of the moderators correspond to 1 standard deviation below and above the mean, respectively.

Table 17:

Model Comparisons of Hypothesised Moderated Models

	Model with paths from latent interaction to outcomes	Model without the paths from latent interaction to outcomes	Model comparison *Chi-square Difference*
Interaction effects:	χ^2 (*df*)	χ^2 (*df*)	*Δ* χ^2 (Δ*df*)
Control			
MM1: OCB-I × Control	1957.14 (259)	2016.07 (266)	58.93 (7)***
Model Fit Statistics	*RMSEA = .09, CFI = .90, NFI = .91, IFI =.91, AIC=2141.14*	*RMSEA = .09, CFI = .89, NFI = .90, IFI =.90, AIC = 2186.07*	
MM2: OCB-O × Control	2007.19 (259)	2022.39 (266)	15.2 (7)***
Model Fit Statistics	*RMSEA = .09, CFI = .89, NFI = .90, IFI =.90, AIC=2191.19*	*RMSEA = .09, CFI = .89, NFI = .90, IFI =.90, AIC =2192.24*	

Note. ***p<.001.

Table 17 continued:

Model Comparisons of Hypothesised Moderated Models

	Model with paths from latent interaction to outcomes	Model without the paths from latent interaction to outcomes	Model comparison *Chi-square Difference*
Interaction effects:	χ^2 (*df*)	χ^2 (*df*)	*Δ* χ^2 (Δ*df*)
Organisational Support			
MM3: OCB-I × Organisational support	1932.61 (259)	1993.99 (266)	61.38 (7)***
Model Fit Statistics	*RMSEA = .09, CFI = .91, NFI = .91, IFI =.91, AIC = 2116.61*	*RMSEA = .09, CFI = .90, NFI = .91, IFI =.91, AIC =2163.99*	
MM4: OCB-O × Organisational support	1881.21 (259)	1923.30 (266)	42.09 (7)***
Model Fit Statistics	*RMSEA = .09, CFI = .90, NFI = .91, IFI =.91, AIC=2065.17*	*RMSEA = .09, CFI = .90, NFI = .91, IFI =.91, AIC =2093.30*	
MM5: ALL INTERACTIONS	2883.14 (360)	2988.96 (388)	105.82 (28)***
Model Fit Statistics	*RMSEA = .11, CFI = .87, NFI = .88, IFI =.88, AIC = 3157.14*	*RMSEA = .12, CFI = .87, NFI = .88, IFI =.88, AIC =3206.96*	

Note. ***p<.001.

Table 18:

Results of Specific Interactions with Control

	MM1: OCB-I x Control Interaction	
Dependents	Ustand. Estimates (S.E)	R^2 estimate$^+$
Job satisfaction	-.03 (.04)	.03
Organisational commitment	.004 (.03)	.30
Role ambiguity	.16** (.05)	.26
Role overload	.04 (.04)	.01
Work-family conflict	-.37*** (.06)	.26
Physical exhaustion	-.09*** (.02)	.22
Work-related Depression	-.12*** (.03)	.10
	MM2: OCB-O x Control Interaction	
Dependents	Ustand. Estimates (S.E)	R^2 estimate$^+$
Job satisfaction	.03 (.03)	.05
Organisational commitment	.03 (.03)	.24
Role ambiguity	-.08 (.03)**	.18
Role overload	.001 (.04)	.01
Work-family conflict	.10 (.05)	.23
Physical exhaustion	.05 (.01)***	.27
Work-related Depression	.06 (.02)**	.09

Note. Unst. Estimates = Unstandardised Estimates; S.E = standard errors.
+ The R-squared estimate is based on the proportion of variation in dependent variable explained by the independent, moderator, and their interaction together.
**p< .01
***p< .001

Table 19:

Results of Specific Interactions with Organisational Support

	MM3: OCB-I X Organisational Support	
Dependents	Ustand. Estimates (S.E)	R^2 estimate$^+$
Job satisfaction	-.04 (.04)	.02
Organisational commitment	-.02 (.03)	.32
Role ambiguity	.15** (.05)	.22
Role overload	.01 (.05)	.00
Work-family conflict	-.37*** (.06)	.13
Physical exhaustion	-.11*** (.02)	.13
Work-related Depression	-.11*** (.03)	.11
	MM4: OCB-O x Organisational Support	
Dependents	Ustand. Estimates (S.E)	R^2 estimate$^+$
Job satisfaction	-.03 (.06)	.02
Organisational commitment	.04 (.04)	.27
Role ambiguity	-.08* (.04)	.18
Role overload	.09 (.06)	.01
Work-family conflict	-.46*** (.09)	.14
Physical exhaustion	-.12*** (.03)	.11
Work-related Depression	-.09 (.07)	.06

Note. Unstand. Estimates = Unstandardised Estimates; S.E = standard errors.
+ The R-squared estimate is based on the proportion of variation in dependent variable explained by the independent, moderator, and their interaction together.
*p< .05
***p< .001

5.4 Study 2 Discussion

This chapter presented the research methods and findings for Study 2 which are based on cross-sectional analyses of the direct effects, mediation, and moderation models using Time 2 data. The methods and analyses parallel to those conducted in Study 1. Study 2 sets another cross-sectional context against which the results of the first Study can be compared and contrasted.

Firstly, the direct effects and mediation models were re-assessed and compared using SEM statistics and their fit were found to be only modest at best. The results also revealed that the mediation model was deemed superior to the mediation model based on the comparisons of the AIC statistics. Specifically, an inspection of significant paths in the mediation model revealed that OCB-I had a significant indirect effect on organisational commitment and physical exhaustion via role ambiguity and work-family conflict. Moreover, OCB-I has also had a significant indirect effect on work-related depression via work-family conflict. Higher levels of OCB-I were associated with higher levels of work-family conflict and lower levels of role ambiguity and, in turn, higher levels of work-family conflict were related to higher levels of work-related depression and physical exhaustion, and higher levels of role ambiguity were related to lower levels of organisational commitment. OCB-O had a significant indirect effect on physical exhaustion and work-related depression via work-family conflict. Higher levels of OCB-O were related to lower levels of work-family conflict, and higher levels of work-family conflict were associated with higher levels of physical exhaustion and work-related depression. Overall, the results, albeit cross-sectional in nature, suggest that work-family conflict and role ambiguity are possible mediators in the relationships between OCBs and some of the

outcome variables. The findings also demonstrated that OCBs have differential effects on role stressors. For example, although OCB-I was negatively related to role ambiguity, it was positively related to work-family conflict. On the other hand, OCB-O was negatively related to work-family conflict. The positive relationship between OCB-I and work-family conflict is consistent with claims made by Bolino and Turnley (2005) who noted that "employees who engage in higher levels of individual initiative [a specific form of OCB] are likely to have to do so at the expense of family time or obligations" (p. 742). These authors empirically supported this positive relationship between OCB-I and work-family conflict. On the other hand, the other relationships regarding OCBs and role stressors explored in the mediation model of the present study were not consistent with those found in Bolino and Turnley (2005). The negative OCB-I-role ambiguity and OCB-O-work-family relationships were consistent with prior cross-sectional findings (e.g. Eatough et al., 2011; Rasheed et al., 2013). However, these studies examined role stressors as predictors of OCBs, and not that OCBs were predictors of role stressors. It is evident that the cross-sectional limitation in these studies (and in Study 2) precludes any determination of temporal order or causal nature in the assessed relationships between the variables. The second set of paths in the mediation model in which role stressors were positively related to negative health-related outcomes such as physical exhaustion and work-related depression, and negatively related to job satisfaction and organisational commitment were also consistent with prior research findings (Anton, 2009; Lambert et al., 2005; Tennant, 2001). Overall, although the mediation model received empirical support, Maxwell and Cole (2007) cautioned against making definitive claims or conclusions about full mediation

when conducting cross-sectional analyses of longitudinal mediation.

Secondly, cross-sectional SEM analyses of the proposed moderation model in organisational support and job control were used as moderators in the relationship between OCBs, and job attitudes, role stressors, and health-related outcomes, all measured at Time 2. The results revealed that organisational support and control were significant moderators among several relationships. These results differed substantially from the first Study in which no moderation was found by organisational support and job control.

In Study 2, control moderated the relationships between OCB-I and work-family conflict, physical exhaustion, work-related depression, and role ambiguity. Control also moderated the relationships between OCB-O and physical exhaustion, work-related depression and role ambiguity. Organisational support moderated the relationships between OCB-I and work-family conflict, role ambiguity, work-related depression, and physical exhaustion. Organisational support also moderated the relationships between OCB-O and work-family conflict, physical exhaustion, and role ambiguity.

In the above-mentioned relationships, higher levels of OCB-I were related to higher negative outcomes (e.g. higher physical exhaustion, work-related depression, and role ambiguity) under 'low control' and 'low organisational support' conditions. Moreover, higher levels of OCB-O were associated with higher positive outcomes (e.g. lower levels of work-family conflict and physical exhaustion) under 'high organisational support'. These findings, albeit cross-sectional in nature, are somewhat consistent with and supportive of the proposed model and hypothesised claims underlying this research. Generally, the findings are in keeping with the main theoretical frameworks

guiding the model such as the ERI and JDR/JDC-S frameworks which highlight the important roles that control and support play as key moderators in stressor-strain relationships as well as match the wealth of empirical evidence supporting their moderating roles (De Lange et al., 2003; Karasek, 1979; Siegrist, 1996; Van der Doef & Maes, 1999).

At this point, it is worthy to mention that the results of moderation model analyses revealed a conflicting finding regarding the moderating role of job control in the relationship between OCB-O and physical exhaustion and work-related depression. In particular, the results suggested that high OCB-O performers, with low job control, experienced lower levels of physical exhaustion (i.e. better physical health), and that high OCB-O performers, with high job control, experienced higher levels of work-related depression (i.e. poorer mental health). In light of the fact that control moderated the relationship between OCB-I and these outcomes in the expected direction as previously discussed, these other findings are counter to the assumptions underlying the positive role that control plays in promoting higher levels of employee well-being, in the context of OCB-O. Hence, some explanation for this surprising finding is necessary. Some researchers have established that control, in some situations, can have adverse (rather than positive) effects on individuals' appraisal of stress and overall well-being. For example, Rijk, Blanc, Schaufeli, & Jonge (1998) revealed that although job control positively predicted employees' well-being, high job control 'overtaxed' those employees with a low active coping style under high job demands. Hence, it is not surprising that job control acts as a stressor under these conditions (Warr, 1987). Moreover, Schaubroeck and Merritt (1997) and Fisher (1984) also claimed and found that lower control, in tense or demanding situations (or where there is low self-efficacy,

inefficient use of control, etc), is likely to reduce stressfulness experienced by individuals. The fact that job control operated differently with OCB-I (i.e. physical and mental well-being was enhanced) and OCB-O (i.e. physical and mental well-being was worsened) may suggest that employees use job control as a coping mechanism differently in their behaviours targeted at individual employees versus the overall organisation. Thus, employees assisting individual members (i.e. OCB-I) benefit more when they have high levels of control over their own work, but these same employees providing assistance to the entire organisation (i.e. OCB-O) may suffer adversely under high levels of control. Given that OCB-O has been classified as challenging behaviours and OCB-I as affiliative behaviours, it is expected that, consistent with arguments of Bergeron (2007), that challenging behaviours operate differently from affiliative behaviours where the former is more damaging and may be more likely to be punished.

Clearly, although not all relationships between OCBs and outcomes were moderated by control and support, the findings are still intriguing for the newly proposed moderation model. As expected in most cases, OCBs were associated with more positive outcomes for employees when organisational support and control were high but the consequences were negative when organisational support and control were low. However, definitive conclusions about the validity of the model and associated findings should be reserved given the cross-sectional nature of the data that presented these results. Overall, these cross-sectional findings (at Time 2) underscore the mediation model and proposed moderation model as plausible frameworks for explaining the relationships between OCBs and job attitudes, role stressors, and health-related outcomes.

Overall, two important points of differences emerged between Study 1 and Study 2. Firstly, the direct effects model was superior in Study 1 but the mediation model emerged superior in Study 2. Moreover, the moderation model received some support in Study 2 but received no support in Study 1. These differences may be attributed to the reduced sample size in Study 2 due to the 24 percent attrition rate as well as noticeable differences in inter-variable correlations in Study 1 compared to Study 2.

The next chapter discusses the final study (Study three) which assesses the proposed moderation, direct effects, and mediation models using longitudinal panel data in which Time 2 outcomes are modelled against Time 1 predictors. These models tests are deemed much more rigorous than the prior cross-sectional analyses given the innate ability to account for temporal ordering of study variables and causation in longitudinal panel designs.

Chapter 6: Study 3 - Direct, Mediated and Moderated Model Testing: A Two-Wave Longitudinal Assessment

6.1 Introduction

This chapter introduces Study 3 which presents the longitudinal analyses of the data collected across the two waves observed in this research. This chapter provides a more rigorous longitudinal examination of the models identified and examined in chapters 4 and 5 based on the data matched across the two waves (i.e. Study 1 and Study 2). Longitudinal data analyses permit the test of causal effects among variables by providing the opportunity to estimate the cross-lagged paths from variables measured at an earlier period to variables measured at a later period. These analyses also permit the testing of reverse and reciprocal causation once all independent and dependent variables have been measured at both time points. As a result, more rigorous assessments of alternative models are possible. This final study also provided a base against which the prior two studies can be compared and contrasted. Such comparisons of model findings from the longitudinal analyses with those from the cross-sectional model results from Time 1 and Time 2 are made in the final discussion chapter. These comparisons provided critical information on the variances and similarities between cross-sectional and longitudinal designs for model testing using SEM techniques.

6.2 Longitudinal Methods and Procedures

6.2.1 Sample Dataset and Research Measures. In order to complete the longitudinal dataset for Time 1 and Time 2, all relevant cases or observations were matched and placed into a single dataset using SPSS V.20. The final dataset comprised 427 participants taken across the two waves, and

indicated an attrition rate of 24 percent. Data screening and cleaning were performed to ensure that all cases were matched and recorded appropriately. An analysis of the sample profile characteristics indicated that 62 percent were female and 38 percent were male; 90 percent were those 50 years and younger (45% in 19-34 age group and 45% in 35-50 age group); more than 50 percent were from clerical, administrative and non-technical positions; and 93 percent of employees were full-time employees.

All item responses for all research measures and their corresponding total scores (e.g. OCB-I, OCB-O, role overload, physical exhaustion, etc) of sample participants (matched across waves) were appropriately recorded to allow for longitudinal modelling in AMOS 19; hence, each participant had two records of their responses: Time 1 and Time 2 responses in the same dataset. Study 1 and 2 have already reported relevant information on the above-mentioned research measures, associated reliability (Cronbach's alphas) and validity statistics (convergent and discriminant validities).

6.2.2 Longitudinal Data Analysis Techniques. Descriptives and correlational statistics were presented to examine associations among main study variables between Time 1 and Time 2 points. These analyses provide some information on stability reliability (test-retest reliabilities) and preliminary bivariate intercorrelations between Time 1 predictors and Time 2 criterion variables.

Secondly, nonresponse bias analyses were conducted using three procedures to ascertain the influence of selective nonresponse (attrition) bias. The first procedure involved a MANOVA followed by independent samples t-tests on all main study variables (alpha corrected for Type 1 error) between nonresponders (responders of first wave only) and responders

(those who responded in both waves). This approach was based on prior suggestions dealing with the assessment of nonresponse bias (Menard, 2002; Taris 2000). Significant differences (*p*s < .05) provide evidence of bias derived from attrition. The second procedure involved the analysis of bivariate correlations among all study variables (i.e. predictor against outcome variables) between nonresponders and responders to examine the extent to which the structure of associations among variables was radically different between those who participated in both waves and those who participated in only the first wave (De Lange et al., 2003). The third procedure involved the statistical comparison of respondent demographics (e.g. gender, age, employment status, and marital status) between responders and nonresponders using Pearson chi-square tests. Nonsignificant differences (*p*s > .05) between these groups rule out the possible influence of nonresponse bias in the study.

Thirdly, longitudinal measurement invariance was tested using SEM with AMOS 19 in which several features of a specified measurement model were constrained to equality across waves. Further description of these procedures is presented in a later section. Longitudinal invariance testing is a necessary step for assessing longitudinal, multi-wave models based on SEM analyses. Fourthly, the direct effects and mediation models that were assessed cross-sectionally using SEM were re-assessed longitudinally based on cross-lagged Time 1 and Time 2 data. The complete panel design adopted in this research, in which all study variables were collected and recorded at both waves, permitted the assessment of the reverse (or alternative) versions of these models and, in the case of the direct effects model, reciprocal causation was also assessed.

Finally, the moderation model in which perceived organisational support and control were examined as moderators in relationships between OCBs and outcome variables was tested longitudinally. In this model, the effects of Time 1 independents, moderators, and their interactions on Time 2 outcomes were assessed, while controlling for Time 1 outcome variables.

6.3 Longitudinal Results

6.3.1 Correlation Analyses between Time 1 and Time 2 Variables. Table 20 presents the correlation analyses examining the cross-lagged associations between Time 1 study variables and their Time 2 counterparts. The results revealed that OCB-I, at Time 1, was positively associated with role ambiguity and role overload at Time 2, and OCB-O, at Time 1, was negatively associated with organisational commitment and positively associated with role ambiguity at Time 2. In the reverse, organisational support and control, at Time 1, were positively associated with OCB-I and OCB-O at Time 2. Role overload, at Time 1, was positively associated with OCB-I at Time 2, and job satisfaction, at Time 1, was negatively associated with OCB-I at Time 2.

Table 20:

Correlations between Variables at Time 1 and Time 2

					T2						
T1	**OC**	**JS**	**RA**	**WFC**	**RO**	**PE**	**WD**	**POS**	**PC**	**OCBI**	**OCB0**
OC	.13	.48	-.11	-.11	.05	-.15	-.14	.05	.10	.06	.07
JS	-.17	.76	-.07	-.05	.03	.08	-.10	.06	.11	-.11	.06
RA	.08	-.43	.03	-.03	-.08	-.04	-.04	.06	.08	.08	.02
WFC	.05	.15	.05	.10	.07	.01	-.01	.02	.03	-.07	-.09
RO	.08	-.18	.01	.10	.11	-.06	-.05	.02	.06	.10	.03
PE	-.03	-.24	.04	.12	.07	.06	.01	-.11	-.13	.04	.06
WD	-.09	-.36	.09	.10	.09	.08	.01	-.10	-.14	.04	.06
POS	.08	.38	.04	.02	.01	-.04	.06	.04	.06	.10	.10
PC	.09	.32	-.01	-.06	.06	.06	.03	.06	.02	.10	.11
OCBI	-.09	.04	.10	.06	.12	-.03	-.02	-.04	-.02	.10	.11
OCB0	-.11	.05	.11	.06	.09	-.04	-.03	-.07	-.01	.10	.12

Note. N = 427. T1= Time 1 and T2 = Time 2. All correlations above 0.1 are significant at the .05 level. OC = organisational commitment, JS = job satisfaction; RA= role ambiguity; WFC = work-family conflict; RO = role overload; PH = physical exhaustion; WD= work-related depression; POS =perceived organisational support; PC = perceived control; OCBI = organisational citizenship behaviour at individual; OCB-O = organisational citizenship behaviour at organisational level.

6.3.2 Nonresponse Bias Analyses. Nonresponse bias was assessed using three general techniques to determine the extent of influence of nonresponse bias in the data.

The first technique was to examine whether there were statistically significant differences between stayers/responders (those who participated in both waves) and drop-outs/nonresponders (those who participated only in Time 1) of the study on all main study variables measured at Time 1. Nonsignificant differences between responders and nonresponders provide some evidence for the lack of nonresponse bias. In order to conduct this technique, the Time 1 dataset was subsequently coded to distinguish between stayers and drop-out subsamples. MANOVA results revealed a nonsignificant multivariate effect on all study variables between responders and nonresponders, $F (11, 547) = 1.50$, $p = .13$. Based on the corrected alpha for Type 1 error, independent sample t-tests were conducted on all variables. Table 21 shows the results of these t-tests in terms of comparisons between responders and nonresponders. The results revealed no statistically significant differences on the main study variables (all *p*s > .05).

The second technique was to examine the structure of relationships among the main study variables and assess the similarity of these relationships between stayers and the drop-out subsamples. This technique is consistent with prior recommendations (De Lange et al., 2003) where selective response bias is investigated by examining correlations between study variables at the first wave (i.e. Time 1 only) between responders and nonresponders. Pearson product moment correlations were computed among the variables measured at Time 1 for responders and nonresponders. This technique

allows one to ascertain the extent to which attrition after Time 1 would have affected the relationships among the study variables (De Lange et al., 2003). With the exception of a few sets of correlations, the relationships among majority of the variables for responders and nonresponders were very similar. Table 22 reports the correlation results comparing responders and nonresponders.

The final technique for detecting the possible influence of nonresponse bias involved the statistical comparison of the demographic variables of gender, age, employment status (full-time versus part-time), and marital status between responders and nonresponders based on Pearson chi-square tests. The chi-square results revealed that there were no statistically significant differences between these two groups with respect to these demographic variables: gender ($p = .09$), age ($p = .21$), employment status ($p = .26$), and marital status ($p = .72$). Overall, the results generally indicated that attrition was unlikely to result in selective response bias in the current research.

Table 21:

Nonresponse Bias Analysis between Stayers and Drop-outs

Study Variables	***T-statistic of Difference***	***p***
OCB-I	.71	.48
OCB-O	.24	.82
Role Ambiguity	.78	.44
Role Overload	1.89	.06
Work-Family Conflict	1.22	.22
Job Satisfaction	1.87	.06
Organisational Commitment	1.18	.24
Physical Exhaustion	1.40	.18
Work-related Depression	1.71	.08
Organisational Support	1.74	.08
Control	1.37	.17

Table 22:

Correlations among Study Variables between Responders and Nonresponders

	Responders										
	OC	JS	RA	WFC	RO	PE	WD	POS	PC	OCBI	OCBO
OC											
JS	0.66										
RA	-0.44	-0.52									
WFC	-0.09	-0.11	0.14								
RO	-0.23	-0.21	0.26	0.42							
PE	0.27	0.32	-0.28	-0.38	-0.52						
WD	0.43	0.48	-0.35	-0.24	-0.34	0.49					
POS	0.59	0.51	-0.46	-0.13	-0.24	0.27	0.36				
PC	0.40	0.42	-0.46	-0.07	-0.11	0.19	0.28	0.59			
OCBI	0.13	0.14	-0.11	0.01	0.01	-0.04	0.10	0.13	0.14		
OCBO	0.14	0.16	-0.15	0.01	0.03	0.01	0.13	0.16	0.17	0.89	

Note. All correlations above 0.1 are significant at the .05 level. OC = organisational commitment, JS = job satisfaction; RA= role ambiguity; WFC = work-family conflict; RO = role overload; PH = physical exhaustion; WD= work-related depression; POS = perceived organisational support; PC = perceived control; OCBI = organisational citizenship behaviour at individual; OCB-O = organisational citizenship behaviour at organisational level.

Table 22 continued

Correlations among Study Variables between Responders and Nonresponders

	Nonresponders										
	OC	JS	RA	WFC	RO	PE	WD	POS	PC	OCBI	OCBO
OC											
JS	0.73										
RA	-0.62	-0.60									
WFC	-0.15	-0.13	0.17								
RO	-0.16	-0.26	0.18	0.36							
PE	0.33	0.35	-0.31	-0.36	-0.45						
WD	0.58	0.61	-0.45	-0.08	-0.23	0.49					
POS	0.68	0.65	-0.58	-0.14	-0.25	0.35	0.54				
PC	0.50	0.56	-0.51	0.12	-0.07	0.16	0.42	0.59			
OCBI	0.40	0.29	-0.27	0.10	0.07	0.04	0.28	0.31	0.28		
OCBO	0.37	0.33	-0.31	0.06	0.01	0.05	0.31	0.37	0.30	0.89	

Note. All correlations above 0.1 are significant at the .05 level. OC = organisational commitment, JS = job satisfaction; RA= role ambiguity; WFC = work-family conflict; RO = role overload; PH = physical exhaustion; WD= work-related depression; POS = perceived organisational support; PC = perceived control; OCBI = organisational citizenship behaviour at individual; OCB-O = organisational citizenship behaviour at organisational level.

6.3.3 Tests of Longitudinal Measurement Invariance between Time 1 and Time 2. Longitudinal measurement invariance concerns whether the relationships between latent factors and their observed indicators are invariant across time periods. Invariance testing is critical in longitudinal research in order to determine whether the measures used are measuring the same constructs in the same metric at different waves. Violations in invariance tests can have serious implications for the analyses and conclusions that are made with respect to the relationships drawn among offending constructs under investigations. Hence, calls have been made to arrive some consensus regarding rigorous tests of invariance across time. Vandenberg and Lance (2000) reviewed a number of best practices in invariance testing and revealed that most studies relied on multistep, hierarchical approaches to invariance testing in which a number of models with varying constraints are compared and evaluated using a number of fit statistics, especially the chi-square difference statistic and CFI. In their review, SEM was also a common data analysis tool for assessing measurement invariance across time. Bryne (2004) claimed that SEM provides a powerful set of techniques for evaluating different degrees or levels of measurement invariance better than any other method of analysis, in both cross-sectional and longitudinal datasets.

Using SEM, it is possible to conduct a series of hypothesis-based model tests of invariance by estimating a number of nested invariant models, and comparing these models to an overall unconstrained baseline model (Widaman, Ferrer, & Conger, 2010). In each nested model, equality constraints are imposed on various parameters to examine the extent of longitudinal invariance in the overall model structure and individual elements of the model. In particular, several recommendations have been put forward regarding different

levels of invariant testing. One key recommendation (Widaman & Reise, 1997) suggests that four levels of invariance testing should be applied: (1) configural invariance, (2) weak factorial invariance, (3) strong factorial invariance, and (4) strict factorial invariance.

Configural invariance concerns the extent to which the basic model structure comprising the same pattern of fixed and free parameters is invariant across waves. To test for configural invariance, the overall factor structure (i.e. including latent and indicator relations) is assessed by fitting the two waves of data simultaneously in a single (combined) measurement model (Widaman et al., 2010). This invariance test allows for the assessment of the model fit for each wave without the imposition of equality constraints. The configural model provides the unconstrained baseline model against which other nested invariant models (described below) are compared.

Weak factorial invariance is also referred to as metric invariance. This form of invariant test provides a stronger or more rigorous test of invariance above and beyond the configural invariance test. Metric invariance is assessed by constraining the factor loadings between the latent factors and their respective indicators to be equal across waves. Overall, it examines whether participants attribute or interpret the same meaning to the latent factors under investigation across waves (van de Schoot, Lugtig & Hox, 2012).

Strong factorial invariance (or scalar invariance) requires both factor loadings and intercepts of observed indicators across time to be invariant. This form of invariance "implies that subjects with the same value on the latent construct should have equal values on the observed variable" (Hong, Malik & Lee, 2003, p. 641).

Strict factorial invariance (or measurement error invariance) requires factor loadings, intercepts and unique factor

variances. This form of invariance is the most rigorous form and involves imposing equality constraints on unique error variances in the observed indicators across waves to determine whether the level of measurement error is longitudinally invariant.

Invariance testing is generally conducted by comparing the fit statistics of the nested invariant models to the baseline configural invariance model. The likelihood ratio chi-square difference statistic is used as the main criterion but due to sample size sensitivity, other model fit statistics such as the CFI, Tucker Lewis Index (TLI) and the RMSEA statistics are used for better comparative assessments of invariance (Milfont & Fischer, 2010).

Byrne, Shavelson and Muthen (1989) introduced the notion of partial measurement invariance. This concept was presented against the backdrop that full measurement invariance is often considered to be scientifically unrealistic (Horn, McArdle & Mason, 1983). Partial measurement invariance is important when one or more estimates fail to satisfy the various tests of invariance. For example, a latent factor with three indicators may demonstrate invariance on only two of the three indicators across time. Hence, the *partial metric invariance* is established. Normally, once *partial metric invariance* is established, *partial scalar invariance* is tested in which equality constraints are imposed on the intercepts of only those metrically invariant indicators, whereas the intercepts of those indicators that are not metrically invariant are unconstrained. Similarly, *partial measurement error invariance* is tested in which equality constraints are imposed on the error variances of indicators that are metrically invariant. Table 23 shows the stages of invariance testing that are highly recommended in the literature (Bryne, 2004; Widaman & Reise, 1997).

Table 24 shows the various model fit statistics for the baseline (configural invariance) model and subsequent invariant models estimated using CFA in AMOS 19. The baseline model was the configural invariance model in which no equality constraints were imposed across waves but the overall factor structure was estimated for both waves, simultaneously. This model achieved adequate fit (χ^2 = 3616.90, df = 1413, p < .001; CFI = .91, NFI = .90, IFI = .90, TLI = .90, RMSEA = .05 [C.I: .05 to .06, p = .13]).

A full metric invariance model was subsequently estimated and the results revealed a significant increase in chi-square (or significant reduction in model fit) between this model and the configural invariance model ($\Delta\chi^2$ (20) = 72.00, p < .001). However, the alternative fit indices of the CFI (.90), TLI (.89) and RMSEA (.05) did not decrease significantly in the full metric invariant model from the configural invariance model. According to Bryne (2004), partial metric invariance should be estimated once full metric invariance is not satisfied. At least partial metric invariance must be satisfied before conducting other subsequent invariant tests. An inspection of the modification indices in factor loadings revealed that removing equality constraints on six factor loadings will lead to significant improvements in model fit. As a result, a partial metric invariance model, in which the equality constraints were removed on the six factor loadings, was estimated and the overall fit of this model was not significantly worse than the fit of the configural invariance model ($\Delta\chi^2$ (14) = 13.82, p > .05). Hence, partial metric invariance was supported.

The next step was to estimate the scalar invariance (strong factorial invariance) model. However, given that only partial metric invariance was established, partial scalar invariance was tested in which intercepts of the invariant factor loadings were constrained to be identical across waves (Bryne,

2004). The fit of the partial scalar invariance model was also not significantly worse than that of the configural invariance model ($\Delta\chi^2$ (28) = 40.50, $p > .05$). Hence, partial scalar invariance was supported.

The final step was to estimate a partially strict factorial invariance model (or partial measurement error invariance model) in which equality constraints were imposed only on error variances of metrically invariant indicators. The fit of this model was significantly worse than the fit of the configural invariance model ($\Delta\chi^2$ (42) = 71.05, $p < .001$). Hence, this initial partial error invariance model was not supported by the data. Further examination of the modification indices was not helpful in determining which error variances should be relaxed from the equality constraint requirements. As a result, the partial error invariance was not supported. It is worthy of note that Byrne (2004) highlighted that tests of error invariance are excessively stringent and unrewarding. Hence, the evidence of partial scalar invariance in this research was deemed sufficient for subsequent model estimation and testing. Moreover, comparisons of changes in CFI (where changes of .01 or less are acceptable) provided consistent results highlighting supporting evidence for partial scalar invariance (and lack of support for partial error variance as the CFI for this model dropped from .90 to .88).

Table 23:

Main Steps involved in Invariance Testing

Invariance Testing Phases	**Description**
Step 1: Configural Invariance Test	*Specification of unconstrained model with the same pattern of free and fixed parameters in a multiple group model*
Step 2: Weak Factorial Invariance Test	*Specification of a nested constrained model in which factor loadings are constrained to equality across the two waves*
Step 3: Strong Factorial Invariance Test	*Specification of a nested constrained model in which factor loadings and intercepts are constrained to equality across the two waves*
Step 4: Strict factorial invariance Test	*Specification of a nested constrained model in which factor loadings, intercepts, and unique error variances are constrained to equality across the two waves*

Note. Each step requires a specification of a more constrained model. Statistical model comparisons are made across the different levels, and non-significant chi-square differences suggest that invariance is satisfied at a subsequent level. Where significant chi-square differences emerge, partial invariance is explored.

Table 24:

Invariance Model Tests and Results

Invariance Models	**χ^2**	**df**	**CFI**	**TLI**	**RMSEA**	**$\Delta\chi^2$ (df)**
Combined Baseline model	3616.90	1413	.91	.90	.05	-
Full Metric Invariance	3688.90	1433	.90	.89	.05	72.00*** (20)
Partial Metric Invariance	3630.72	1427	.90	.90	.05	13.82 *ns* (14)
Partial Scalar Invariance	3657.40	1441	.90	.90	.05	40.50 *ns* (28)
Partial Error Invariance	3687.95	1455	.88	.87	.07	71.05*** (42)

Note. ***p < .001; n.s = not significant

6.3.4 Tests of Longitudinal Structural Models: Direct and Mediated Models. Given that the model tests of invariance were supportive, the next stage of the analyses was to assess the direct effects and mediation models as was done in Time 1 and Time 2, separately. The main difference in this Study was that these models involved the cross-lagged relations between Time 1 and Time 2 variables. A number of recommendations by Zapf et al. (1996) highlighted that several competing models should be tested using SEM to arrive at the best suited model for assessment. De Lange et al. (2003) also suggested that when researchers utilise complete two-wave panel designs, several competing models should be specified: a stability model, a normal causation model, a reverse causation

model, and a reciprocal causation model. Examining these causation models is said to permit a fuller understanding of the nature of the causal relations among the variables within the hypothesised models. Furthermore, Zapf et al. (1996) suggested that SEM was the most powerful technique, compared to regression and cross-lagged correlation analyses, to estimate, compare and evaluate normal, reverse, and reciprocal causation models.

In order to estimate the direct effects and mediation models using AMOS 19, it was necessary to specify several alternative longitudinal models as highlighted above. The several models are described below and presented in Table 25:

- **Baseline Stability model (Mo**): this model contains no cross-lagged structural paths but only temporal stabilities of all latent variables at Time 1 with their Time 2 counterparts as well as correlations between latent variables at the same time point. This model was the reference model.
- **Normal causation model (M1):** This is the direct effects model. This model resembles Mo, but includes additional cross-lagged paths from the Time 1 OCBs to Time 2 outcome variables of job satisfaction, organisational commitment, role ambiguity, role overload, work-family conflict, physical exhaustion, and work-related depression.
- **Reverse causation model (M2):** This model resembles Mo, but includes additional cross-lagged paths from Time 1 job satisfaction, organisational commitment, role ambiguity, role overload, work-family conflict, physical exhaustion, and work-related depression to Time 2 OCBs. This model is the reverse version of M1.

- **Reciprocal causation model (M3)**: This model resembles Mo, but consists of additional reciprocal cross-lagged paths from the Time 1 OCBs on Time 2 outcome variables and vice versa (i.e. the normal causal paths in M1 as well as the reversed causal paths in M2).
- **Mediation Model I (M4):** This model depicts role stressors such as role overload, role ambiguity and work-family conflict as mediators between OCBs and job satisfaction, organisational commitment, physical exhaustion and work-related depression. This mediation model resembles the same mediation model tested in Time 1 and Time 2 points separately. In AMOS 19, the mediation model was specified based on recommendations from Cole and Maxwell (2003) for testing mediation using only two waves of data-collection. This approach is known as the half-longitudinal design in which paths from Time 1 predictors (OCBs) to Time 2 mediators (role stressors) are estimated (i.e. *a* paths), as well as paths from Time 1 mediators (i.e. *b* paths) to Time 2 outcomes (job satisfaction, organisational commitment, role overload, work-family conflict, physical exhaustion, and work-related depression). The *a* and *b* paths are used for ascertaining the significance of mediation. Cole and Maxwell noted that if both 'a' and 'b' paths are significant, then the product of both paths is significant (*ab* product).
- **Mediation Model II (M5):** This alternative mediation model depicts job satisfaction, organisational commitment, physical exhaustion, and work-related depression as mediators between role stressors (role ambiguity, role overload, and work-family conflict) and OCBs. Based on the same approach in M4, paths (*a* paths) from Time 1 role stressors to Time 2 mediators (job satisfaction, organisational commitment, physical exhaustion, and

work-related depression) as well paths (*b* paths) from the same mediators at Time 1 to OCBs at Time 2 were all estimated.

Consistent with recommendations for estimating longitudinal models in SEM, measurement errors of the same indicators across both time points were allowed to covary in the aforementioned models. The six estimated models were statistically compared using the chi-square difference test with associated fit indices such as the RMSEA, CFI, NFI and AIC statistics to ascertain the most appropriate model for further assessment.

Table 26 shows the model fit results for the six models, and Table 27 shows the chi-square difference statistics for the model comparisons. Overall, the results revealed that only the normal causation model or direct effects model (M1; $\Delta\chi^2$ (14) = 24.28, $p < .05$) and reciprocal causation model (M3; $\Delta\chi^2$ (28) = 44.62, $p < .05$) fitted significantly better to the data than the stability model (M0). Moreover, there was no significant difference in fit between the normal causation model (M1) and reciprocal causation model (M2), suggesting that the more parsimonious model (M1) was the preferred model. Further difference tests revealed that the mediation model II (M5) did not significantly improve model fit above and beyond that of mediation model I (M4), suggesting that mediation model I was more parsimonious than mediation model II. However, mediation model I failed to add any significant improvement in model fit above the normal causation model. The normal causation model also had the lowest AIC statistic compared to all other models. Generally, the findings suggest that the normal causation model (M1) was superior in these model comparison tests.

Table 28 reveals the results of the cross-lagged paths in the normal causation model (i.e. the direct effects model). The results indicated that Time 1 OCB-I had significant and positive effects on Time 2 role ambiguity and role overload, such that higher levels of OCB-I at Time 1 were associated with higher levels of role ambiguity and role overload at Time 2. Moreover, Time 1 OCB-O had a significant and negative effect on role ambiguity, such that higher levels of OCB-O at Time 1 were associated with lower levels of ambiguity at Time 2.

Table 25:

Models' Description

Models	Description
Mo: Stability model	*The model consists of paths of latent variables at Time 1 to their counterparts in Time 2. Correlations are estimated with variables in the same time period.*
M1: Normal causation model	*This model is the direct effects model in which paths are drawn from Time 1 OCBs to Time 2 outcome variables.*
M2:Reverse causation model	*This model is the reverse version of M1 in which paths are drawn from Time 1 outcome variables to Time 2 OCBs.*
M3: Reciprocal causation model	This model combines M1 and M2 in which *paths are drawn from Time 1 OCBs to Time 2 outcome variables as well as paths are drawn from Time 1 outcome variables to Time 2 OCBs*
M4: Mediation model I	*The model involves paths from Time 1 OCBs to Time 2 role stressors, and Time 1 role stressors to Time 2 job attitudes and health-related outcomes.*
M5: Mediation model II	*The model involves paths from Time 1 role stressors to Time 2 job attitudes and health-related outcomes, and Time 1 job attitudes and health-related to Time 2 OCBs.*

Table 26:

Stability, Direct Effects, and Mediation Models between Time 1 and Time 2 Waves

Code	**Direct Effects Models**	**χ^2**	**df**	**CFI**	**NFI**	**RMSEA**	**AIC**
M_0	*Baseline model*[+]	3918.91	1505	.91	.90	.05	-
M_1	*Normal causation Model*	3894.63	1491	.91	.90	.05	4334.63
M_2	*Reversed causation model*	3899.30	1491	.91	.90	.05	4339.30
M_3	*Reciprocal causation model*	3874.29	1477	.91	.90	.05	4342.30
	Mediation Models	χ^2	df	CFI	NFI	RMSEA	AIC
M_4	OCBs→ Stressors →JS,OC, PE &WD	3894.69	1487	.91	.90	.05	4342.68
M_5	Stressors →JS,OC, PE & WD→ OCBs	3892.19	1485	.91	.90	.05	4344.19

Note. +The baseline model is the same for both the direct and mediation model specifications.

Table 27:

Comparisons of Direct Effects and Mediated Effects Models

Model Comparisons with Baseline Model (M_0)	**$\Delta\chi^2$**	**Δdf**
M_1 *versus* **M_0**	24.28*	14
M_2 *versus* **M_0**	19.61(n.s)	14
M_3 *versus* **M_0**	44.62*	28
M_4 *versus* **M_0**	24.22(n.s)	18
M_5 *versus* **M_0**	26.72(n.s)	20
Other Relevant Model Comparisons	$\Delta\chi^2$	Δdf
M_1 *versus* **M_3**	20.34(n.s)	14
M_4 *versus* **M_5**	2.5 (n.s)	2
M_4 *versus* **M_1**	.06 (n.s)	4
Preferred Model based on Comparisons:		
<u>Normal Causation (Direct Effects) Model M_1</u>		

Table 28:

Estimates of Normal Causation Model (Direct Effects)

	OCB-I (T1)	**OCB-O (T1)**	
Time 2 Outcomes	Unstand. estimates (S.E)	Unstand. estimates (S.E)	R^2 estimate
Job satisfaction	-.08 (.11)	-.03 (.11)	.54
Organisational commitment	-.04 (.04)	.01 (.04)	.12
Role ambiguity	.17** (.06)	-.14* (.06)	.61
Role overload	.16** (.05)	-.01 (.02)	.68
Work-family conflict	.01 (.12)	.06 (.12)	.32
Physical Exhaustion	.04 (.05)	-.04 (.05)	.76
Work-related Depression	.02 (.08)	-.09 (.08)	.20

Note. Unstand. = Unstandardised; S.E = Standard errors
* p <.05; ** p < .01.

6.3.5 Tests of Hypothesised Moderated Model: Interactive Effects of Control and Organisational Support (Time 1 vs Time 2). As done in Studies 1 and 2, five structural moderation models were estimated. The first moderation model (MM1) consisted of the exogenous latent variables of OCB-I, control, and their latent interaction (at Time 1) as well as their effects on the seven endogenous latent variables: job satisfaction, organisational commitment, role ambiguity, role overload, and work-family conflict, and physical exhaustion and work-related depression at Time 2. The second moderation model (MM2) consisted of the exogenous latent variables of OCB-O, control, and their latent interaction (at Time 1) and their effects on the same endogenous latent variables at Time 2. Hence, these first two moderation models examined the extent that control was a significant moderator between Time 1 OCBs and Time 2 outcome variables. The third moderation model (MM3) consisted of the exogenous latent variables of OCB-I, organisational support, and their interaction at Time 1 and their effects on the seven endogenous latent variables at Time 2, and the fourth moderation model (MM4) consisted of the exogenous latent variables of OCB-O, organisational support, and their interaction at Time 1 and their effects on these same endogenous latent variables at Time 2. Hence, these last two moderation models tested the extent that organisational support was a significant moderator between Time 1 OCBs and Time 2 outcome variables. A final moderation model (MM5) was examined in which the effects of all latent interaction terms above (along with the individual main effect latent variables: OCB-I, OCB-O, control and organisational support) were estimated on the seven endogenous latent variables at Time 2. Overall model fit of these models was evaluated using the same model fit statistics used in the prior sections (e.g. RMSEA, CFI, NFI, etc).

In each of the moderated models estimated, the latent main effect and moderator variables (i.e. OCB-I and OCB-O with organisational support and control) were allowed to correlate, whereas each latent main effect variable (and moderator variable) and the latent interaction were not allowed to correlate. The residual errors of all seven latent endogenous variables were also allowed to correlate at Time 2, controlling for their Time 1 counterparts.

Table 29 shows the results of analyses of the five moderation models. Statistical comparisons using chi-square difference tests revealed that there were statistically significant improvements in model fit when paths from the interaction term(s) to the seven endogenous variables in each of the five models were freely estimated (compared to those models with these same paths omitted). The full model (MM5) confirmed all significant interaction effects found in the other models (MM1 to MM4). Simple slope analyses also reinforced the nature of these significant interactions.

Overall, Tables 30 and 31 reveal the interaction effects of OCB-I x control, OCB-O x control, OCB-I x organisational support, and OCB-O x organisational support on all endogenous variables measured at Time 2.

Overall, the results showed that control moderated the relationships between (1) OCB-I and job satisfaction, (2) OCB-I and work-family conflict, and (3) OCB-I and physical exhaustion. It also moderated the relationships between OCB-O and the same endogenous variables. In particular, under 'low control', higher levels of Time 1 OCBs (both OCB-O and OCB-I) were associated with lower levels of Time 2 job satisfaction, whereas under 'high control', higher levels of Time 1 OCBs were associated with higher levels of Time 2 job satisfaction. In contrast, higher levels of Time 1 OCBs were associated with higher levels of Time 2 work-family conflict and physical

exhaustion under 'low control'; and under 'high control', higher levels of Time 1 OCBs were correlated with lower levels of Time 2 work-family conflict and physical exhaustion.

Organisational support moderated the relationships between (1) OCB-I and organisational commitment, and (2) OCB-I and physical exhaustion. It also moderated the relationships between (1) OCB-O and organisational commitment, and (2) OCB-O and work-related depression. Under 'low organisational support', higher levels of Time 1 OCBs (both OCB-I and OCB-O) were associated with lower levels of Time 2 organisational commitment; and under 'high organisational support', higher levels of Time 1 OCBs were associated with higher levels of Time 2 organisational commitment. Moreover, higher levels of Time 1 OCB-I were associated with higher levels of Time 2 physical exhaustion under 'low organisational support'; and higher levels of Time 1 OCB-I were associated with lower levels of Time 2 physical exhaustion under 'high organisational support'. Finally, higher levels of Time 1 OCB-O were associated with higher levels of Time 2 work-related depression under 'low organisational support'; however, higher levels of Time 1 OCB-O were associated with lower levels of Time 2 work-related depression under 'high organisational support'. Figures B1 to B10 (in Appendix B) show graphical displays of these significant interactions. Low and high levels of the moderators correspond to 1 standard deviation below and above the mean, respectively.

Table 29:

Longitudinal Moderation Models (Time 1 predicting Time 2 variables)

Longitudinal Interaction effects:	Model with paths from latent interaction to outcomes X^2 (*df*)	Model without the paths from latent interaction to outcomes X^2 (*df*)	Model comparison *Chi-square Difference* ΔX^2 (Δdf)
Control			
MM1: OCB-I × Control *Model Fit Statistics*	3192.91 (1040) *RMSEA = .07, CFI = .91, NFI = .90, IFI =.90, AIC=3562.91*	3212.01 (1047) *RMSEA = .07, CFI = .91, NFI = .90, IFI =.90, AIC = 3573.07*	19.1 (7)**
MM2: OCB-O × Control *Model Fit Statistics*	3196.59 (1040) *RMSEA = .07, CFI = .91, NFI = .90, IFI =.90, AIC=3566.59*	3215.09 (1047) *RMSEA = .07, CFI = .91, NFI = .90, IFI =.90, AIC =3671.14*	18.5 (7)**

*Note. **p<.01*

Table 29 continued:

Longitudinal Moderation Models (Time 1 predicting Time 2 variables)

	Model with paths from latent interaction to outcomes	Model without the paths from latent interaction to outcomes	Model comparison *Chi-square Difference*
Longitudinal Interaction effects:	X^2 (*df*)	X^2 (*df*)	ΔX^2 (Δ*df*)
Organisational Support MM3: OCB-I × Organisational support	3234.95 (1040)	3249.90 (1047)	14.95 (7)*
Model Fit Statistics	*RMSEA = .07, CFI = .91, NFI = .90, IFI =.90, AIC = 3604.93*	*RMSEA = .07, CFI = .91, NFI = .90, IFI =.90, AIC =3631.89*	
MM4: OCB-O × Organisational support	3219.41 (1040)	3233.90 (1047)	14.49 (7)*
Model Fit Statistics	*RMSEA = .07, CFI = .91, NFI = .90, IFI =.90, AIC=3611.43*	*RMSEA = .07, CFI = .91, NFI = .90, IFI =.90, AIC =3634.13*	
MM5: ALL INTERACTIONS	5642.20 (1251)	5754.31 (1279)	112.11 (28)***
Model Fit Statistics	*RMSEA = .08, CFI = .90, NFI = .90, IFI =.90, AIC = 3271.35*	*RMSEA = .08, CFI = .90, NFI = .90, IFI =.90, AIC =3326.15*	

*Note. *p<.05; ***p <.001*

Table 30:

Results of Control as a Moderator between OCBs and Outcomes

	MM1: OCB-I x Control Interaction (Time 1)	
Dependents at Time 2	Ustand. Estimates (S.E)	R^2 estimate$^+$
Job satisfaction	.18*** (.05)	.30
Organisational commitment	-.02 (.07)	.03
Role ambiguity	.09 (.06)	.03
Role overload	.01 (.01)	.01
Work-family conflict	-.29*** (.06)	.26
Physical exhaustion	-.19*** (.06)	.22
Work-related Depression	-.01 (.08)	.09
	MM2: OCB-O x Control Interaction (Time 1)	
Dependents at Time 2	Ustand. Estimates (S.E)	R^2 estimate$^+$
Job satisfaction	.17*** (.05)	.35
Organisational commitment	.002 (.06)	.04
Role ambiguity	-.02 (.06)	.08
Role overload	-.02 (.02)	.03
Work-family conflict	-.32*** (.06)	.23
Physical exhaustion	-.22*** (.05)	.27
Work-related Depression	.01 (.07)	.09

Note. Unstand. Estimates = Unstandardised Estimates; S.E = standard errors.
+ The R-squared estimate is based on the proportion of variation in dependent variable explained by the independent, moderator, and their interaction together.
***p< .001

Table 31:

Results of Organisational Support as a Moderator between OCBs and Outcomes

	MM3: OCB-I x Organisational Support Interaction (Time 1)	
Dependents at Time 2	Ustand. Estimates (S.E)	R^2 estimate$^+$
Job satisfaction	.04 (.04)	.03
Organisational commitment	.19** (.06)	.30
Role ambiguity	-.04 (.05)	.26
Role overload	.01 (.01)	.03
Work-family conflict	-.07 (.05)	.11
Physical exhaustion	-.11* (.03)	.26
Work-related Depression	-.04 (.05)	.10
	MM4: OCB-O x Organisational Support Interaction (Time 1)	
Dependents at Time 2	Ustand. Estimates (S.E)	R^2 estimate$^+$
Job satisfaction	-.03 (.05)	.05
Organisational commitment	.22*** (.06)	.24
Role ambiguity	.03 (.04)	.10
Role overload	-.01 (.01)	.03
Work-family conflict	.06 (.06)	.09
Physical exhaustion	.05 (.05)	.07
Work-related Depression	-.22*** (.07)	.29

Note. Unstand. Estimates = Unstandardised Estimates; S.E = standard errors.
+ The R-squared estimate is on based the proportion of variation in dependent variable explained by the independent, moderator, and their interaction together.
*p< .05
**p< .01
***p< .001

6.4 Study 3 Discussion

This chapter presented the key methods, statistical analyses and findings conducted in Study 3 of the present thesis. Similar to the previous two Studies, Study 3 assessed the structural validity of the three models: the proposed moderation, direct effects, and mediation models. Essentially, the dataset from Time 1 were combined (matched) with the dataset from Time 2 to permit longitudinal analyses of these models in this Study. Overall, a set of rigorous diagnostic analyses provided support for lack of nonresponse bias and evidence of measurement invariance across the two waves.

Firstly, longitudinal SEM analyses of the direct effects and mediation models (along with other competing models such as baseline, reverse causality and reciprocal causality models) revealed that the direct effects model which comprised paths from Time 1 OCBs to Time 2 outcome variables (job satisfaction, organisational commitment, role overload, role ambiguity, work-family conflict, physical exhaustion, and work-related depression) was superior to other competing models. In particular, the results of these tests revealed that Time 1 OCB-I was significantly and positively related to Time 2 role ambiguity and role overload, such that higher levels of Time 1 OCB-I were associated with higher levels of role ambiguity and role overload at Time 2. In contrast, higher levels of Time 1 OCB-O were significantly related to lower levels of Time 2 role ambiguity. The positive relationship between OCB-I and role stressors is consistent with that of Bolino and Turnley (2005) who found that higher levels of individual initiative (a form of OCB) were associated with higher levels of role overload, stress and work-family conflict. However, the negative relationship between OCB-O and role ambiguity suggests that employees who engage in higher levels of organisationally-targeted citizenship behaviours enjoy better levels of role clarity and certainty. The

finding is not consistent with claims of others (Bolino et al., 2004; Bolino & Turnley, 2005) who argue that where OCBs are normally practised in organisations, employees are likely to experience a high degree of ambiguity in role requirements as the boundary lines between in-role and extra-role behaviours become ill-defined and blurred. Although not expected, this finding revealed some differential effects of OCBs (OCB-I versus OCB-O) on role stress which has been consistent with prior research evidence of differential correlates of OCBs (Belschak & Hartog, 2010; Halbesleben & Bowler, 2007).

Secondly, the longitudinal analyses of proposed moderation model with organisational support and control as moderators revealed that several statistically significant findings in which both support and control moderated a number of relationships between Time 1 OCBs and Time 2 outcome variables. Job control moderated the relationships between OCBs (OCB-I and OCB-O) and job satisfaction, work-family conflict, and physical exhaustion. Under 'low job control', higher levels of Time 1 OCB-I and OCB-O were associated with higher negative outcomes on these variables at Time 2 (i.e. lower levels of job satisfaction, higher levels of work-family conflict, and higher levels of physical exhaustion), whereas under 'high job control', higher levels of Time 1 OCBs predicted higher positive outcomes on these variables at Time 2 (i.e. higher levels of job satisfaction, lower levels of work-family conflict, and lower levels of physical exhaustion). Moreover, organisational support moderated the relationships between OCB-I and organisational commitment and physical exhaustion, and it moderated the relationships between OCB-O and organisational commitment and work-related depression. Similar to job control, under 'low organisational support', higher levels of Time 1 OCBs were associated with higher negative outcomes on these variables at Time 2 (e.g. lower levels of

organisational commitment, higher levels of physical exhaustion, and higher levels of work-related depression), whereas under 'high organisational support', higher levels of Time 1 OCBs predicted more positive outcomes of these variables at Time 2 (i.e. higher levels of organisational commitment, lower levels of physical exhaustion, and lower levels of work-related depression). These results of longitudinal moderation, albeit significant for only a few OCBs-outcomes relationships, provide some modest but promising support for the proposed moderation model in this thesis. Overall, the findings highlight the importance of organisational support and job control as key moderating variables in the psychosocial environment that substantially explain the nature of the OCBs-outcomes relationships. These findings are consistent with the main theoretical frameworks underlying this thesis (i.e. the ERI, JDCS, JDR models) as well as prior empirical findings that provide parallel support (De Lange et al., 2003; Karasek, 1979; Siegrist, 1996; Somech & Drach-Zahavy, 2013; Van der Doef & Maes, 1999). Hence, earlier OCBs led to more positive outcomes at a later phase for employees under high levels of organisational support and job control but these consequences emerged negative for employees under low organisational support and job control.

Overall, this final Study generates more conclusive evidence for the proposed moderation model as well as only partial support for the direct effects model. A more detailed and comprehensive discussion of this Study's findings and implications as well as a final summative discussion of the key findings and associated implications of the three Studies is presented in the next chapter of this thesis.

Chapter 7: Discussion and Conclusions

7.1 Introduction

This chapter presents an integrative summary and discussion of the three Studies that were conducted and presented in the previous three chapters of this thesis. It does not seek to repeat the individual discussion sections of each Study already conducted in previous sections but aims to: (1) briefly reiterate or reinforce the key findings from each study; (2) provide a comparative assessment of the key findings across the three Studies; (3) compare and contrast particular key findings with prior theoretical and empirical literature against the background of the positive versus negative OCB debate; (4) outline key implications for theory, future research, and practice; and (5) present the main limitations and conclusion of the research.

The general purpose of the research was to examine the individual-level consequences of OCBs (OCB-I and OCB-O) for individual OCB performers. Several categories of outcomes or consequences were examined including job attitudes (job satisfaction and organisational commitment), role stressors (role ambiguity, role overload, and work-family conflict), and health-related outcomes (physical exhaustion and work-related depression). Given strong insights from three theoretical frameworks (COR, JD-R/JDC-S, and ERI theories) and supplementary empirical evidence (Bolino et al., 2004; Bolino & Turnley, 2005; Bolino et al., 2010; De Lange et al., 2003; Siegrist, 1996; Van der Doef & Maes, 1998, 1999) the thesis proposed a model depicting the effects of OCB-I and OCB-O on the aforementioned outcomes, moderated by perceived organisational support and job control. This model was referred to as the moderation model and represented the main study

model guiding this thesis. The direct effects and mediation models provided alternative frameworks based on the same theoretical frameworks and empirical evidence. The direct effects model comprised direct effect paths from OCBs to the above-mentioned outcomes (without moderators present). The mediation model depicted the role stressors of role overload, role ambiguity, and work-family conflict as mediators of the effects of OCBs on job satisfaction, organisational commitment, physical exhaustion, and work-related depression. The research adopted a two-wave panel design to examine these models longitudinally using latent SEM procedures. However, two cross-sectional assessments of these models were conducted for each wave (Study 1 and Study 2), and the final Study examined the longitudinal relations manifested in each of the three models.

7.2 Comparative Assessment of the Three Studies

Table 32 provides a summary comparative assessment of the key findings across the three Studies. With the exception of Study 1 which provided no support to the hypotheses, the two main hypotheses underlying the proposed moderation of organisational support and job control on the effects of OCBs on the outcome variables (presented in Chapter 2) received at least some support.

In summary, Study 1, conducted at Time 1 of the research, revealed that the direct effects model was superior to the mediation model. Given the proposed moderation model received no cross-sectional supporting evidence (as neither organisational support nor job control moderated the relationships between OCBs and the outcome variables), the direct effects model was also preferred over the moderation model assessed in Study 1. The direct effects model revealed that OCB-I had a significant and positive relationship with organisational commitment, and OCB-O had a significant and

negative relationship with role ambiguity. In terms of Study 2 conducted at Time 2 of the research, the key model findings deviated from Study 1 on two aspects. Firstly, Study 2 revealed that the mediation model was superior to the direct effects model, whereas the direct effects model was superior in Study 1. This conflicting finding may be explained by the fact that the model fit statistics (e.g. AICs) between the direct effects and mediation models in both Studies were very close, with only marginal differences in fit. In particular, the path results of the mediation model in Study 2 revealed that work-family conflict and role ambiguity were mediators in the relationships between OCBs and several outcomes including physical exhaustion, work-related depression, and organisational commitment. OCBs were negatively related to several role stressors (e.g. role ambiguity and work-family conflict), and higher levels of these role stressors were associated with higher negative outcomes (e.g. higher physical exhaustion and work-related depression). Secondly, unlike that of Study 1, the proposed moderation model tested in Study 2 revealed that organisational support and job control moderated the relationships between OCBs and several outcomes in the expected (hypothesised) direction. In particular, under low levels of organisational support and job control, higher levels of OCBs were associated with higher negative outcomes of several outcome variables (e.g. higher levels of work-family conflict, work-related depression, and physical exhaustion).

As a longitudinal study, Study 3 (similar to Study 1) revealed that the direct effects model, in the form of a normal causality model, was superior to the mediation model as well as its reverse and reciprocal causality versions. In the direct effects model, higher levels of Time 1 OCB-I were associated with higher levels of role overload and role ambiguity, whereas higher levels of Time 2 OCB-O were associated with lower levels

of role ambiguity. Similar to Study 2, Study 3 revealed that organisational support and job control moderated relationships between OCBs and several outcome variables including job satisfaction, work-family conflict, physical exhaustion, and work-related depression. Generally, the results showed that under low levels of organisational support and job control, higher OCBs were associated with higher negative outcomes on these outcome variables, whereas under high levels of organisational support and job control, higher OCBs were associated with higher positive outcomes. Hence, the longitudinal moderation results of Study 3 were generally consistent with the cross-sectional moderation results of Study 2.

The longitudinal study results were also consistent with a very recent panel study (Somech & Drach-Zahavy, 2013) which examined leader support (akin to social or organisational support) and participative decision-making (akin to job control) as moderators in the relationships between OCB and job strain. Similar to Study three's longitudinal direct effects model, the prior study revealed significant and positive direct correlations between OCB and role stressors (role overload, role ambiguity, etc). Moreover, the hypothesised moderation model of Study 3 was consistent with the prior study's findings where they revealed that under high leader support and participative decision-making, OCB had a weaker, positive relationship with job strain, and but this positive relationship was stronger under low leader support and participative decision-making (Somech & Drach-Zahavy, 2013). The authors claimed that these results provided "support for COR theory as a plausible mechanism for understanding employees' strain in terms of its development. The tendency to contribute beyond the call of duty seems to cause a net loss in employees' resources" (p. 145). The results also demonstrated that the investment in OCBs may not be seriously detrimental if there is the provision of adequate job

resources such as high levels of control and support available to different categories of employees. However, several differences between the prior study (Somech & Drach-Zahavy, 2013) and this present thesis must be mentioned. Firstly, the prior study examined a single combined measure of manager-rated OCB and job strain, whereas the present thesis assessed the individual effects of peer-reported OCB-I and OCB-O and separate aspects of job strain (e.g. physical exhaustion and work-related depression). Secondly, the prior study examined somewhat different moderators (leader support and participative decision-making) compared to those used in the present thesis (organisational support and job autonomy), albeit closely related. Thirdly, the prior study relied on an incomplete panel design in which OCBs and moderators were measured in Time 1, and job strain was measured in Time 2, resulting in an inability to test for reverse and reciprocal causation to assess alternative models. Fourthly, the prior study relied on hierarchical regression statistics to examine the effects of OCBs on job strain, resulting in an inability to estimate and test relationships between multiple independent and dependent variables simultaneously and control for measurement errors.

These methodological and analytical differences suggested much stronger rigour in the present thesis and a rationale for the slightly different outcomes that emerged in the findings. For example, the present thesis showed, in certain cases, that when job control and organisational support were high, OCB had positive (opposite) effects on employee well-being and attitudes. This finding differs from that of the prior study where leader support and participative decision-making emerged as buffers such that the negative effects were minimised considerably. In the present thesis, these resources, when high in most cases, operated as 'enhancers' such that the effects of OCBs were

changed from negative to positive (i.e. not buffering moderators).

Table 32:

Comparisons of Findings from Three Studies

-Studies	Support for Moderation Model	Key Findings
Study 1	*No Support*	*The key results revealed that the direct effects model emerged as the superior model where OCB-I positively predicted organisational commitment, and OCB-O negatively predicted role ambiguity.*
Study 2	*Some Support*	*The key results revealed that the mediation model was superior to the direct effects model. The moderation model revealed that both organisational support and control moderated the effects of OCBs on some outcomes.*
Study 3	*Some Support*	*The key results revealed that the direct effects model was superior to all models. The moderation model revealed that both organisational support and control moderated the effects of T1 OCBs on some T2 outcome variables.*

7.3 The Present Thesis and Its Relationship with the Positive versus Negative OCB Debate

Overall, the present research findings, especially those of Study 3, are largely supportive of the proposed moderation model positing that organisational support and job control play key roles as moderators of the effects of OCBs on job attitudes, role stressors, and health-related outcomes. Essentially, the results demonstrate that when vital job-related factors/resources/rewards such as job control and support are perceived low, the personal costs of OCBs increased; however, when these same factors are perceived high, the personal costs of OCBs were reduced or higher personal benefits were realised.

One of the main purposes of the thesis was to assess the key study findings within the context of the ongoing debate on the positive and negative sides of OCB. The 'positive side' of the debate suggests that OCBs produce naturally beneficial consequences for individual OCB performers in terms of positive health and well-being and job attitudes (Brown et al., 2003; Glomb et al., 2011; Spitzmuller & Van Dyne, 2012), whereas the negative or dark side perspective of OCB suggests that OCBs can be potentially negative and detrimental to individual OCB performers in terms of increased role stress, poor health, and negative job attitudes. However, the present thesis demonstrated that OCBs can be either positive or negative depending on the level of job control and organisational support that is afforded by the organisation to an individual OCB performer. Hence, the manner in which the psychosocial work environment is perceived directly affects the nature of the consequences of OCBs. This present position balances both sides of the debate by acknowledging that the best way of ascertaining the consequences of OCBs rests on a deeper understanding of the key psychosocial characteristics that are central to an employee's job environment rather than

concentrating on the separate effects of an employee's job behaviours alone. Several authors (e.g. Bolino et al., 2004; Fox & Freeman, 2011; Spector & Fox, 2010) have highlighted the relevance in determining the specific conditions or circumstances under which OCBs may be beneficial or harmful to those performing these behaviours. Such knowledge helps one to maximise those conditions that generate the most positive individual benefits and consequences, simultaneously minimising or alleviating less desirable conditions. Indeed, Bolino et al. (2013) had challenged others to address the opposing sides of the OCB debate by seeking to conduct more balanced research that tests the divergent assumptions of each side. The present thesis successfully met this objective by providing some insight into the specific conditions under which OCBs generate either positive or negative consequences for individual employees.

The thesis findings are also generally consistent with the theoretical frameworks used in this study including the COR theory, and JDCS/JD-R and ERI models. With respect to COR theory, the present findings support the claims (e.g. Bolino et al., 2010; Somech & Drach-Zahavy, 2013) that higher levels of role stress and strain are likely to emanate in high OCB performers who lack necessary job resources (e.g. those with low control and support). The notion of multiple role involvement also suggests that the peformance of extra-role behaviour, in the long run, depletes other resources and ultimately results in higher personal costs. With respect to the latter two models, the present findings are also supportive of the claims that both job control and support represent critical job resources (under the JDCS/JD-R model) and intrinsic reward factors (under the ERI model) that impact positively on the relationship between the psychosocial work stressors and job strain. This thesis revealed that, in most cases, job control and

organisational support significantly buffered or reversed the negative effects of OCBs on individual performers, reinforcing the existence and importance of moderating influences in the OCB-job strain relationships. Although OCB is not classified as a formal job stressor, it has the potential to contribute to higher levels of job stress, strain and negative job attitudes in a highly constrained and unsupportive work context.

Although the thesis has a number of methodological strengths in terms of its reliance on a strong longitudinal study design, highly reliable and valid measures, and advanced data analysis techniques, a number of conceptual and methodological limitations are discussed in a later section. Moreover, recommendations for future research and implications for the theoretical body of knowledge on OCBs, stress and well-being as well as practical implications for organisations, managers, and employees are also discussed below.

7.4 Implications for Theory and Practice

7.4.1 Theoretical Implications. From a theoretical standpoint, the thesis makes a substantial contribution to the existing literature through the development and testing of a new conceptual model of the consequences of OCBs for individuals in organisations. There has been very limited knowledge or theoretical development on the study of consequences of OCBs for individual performers (as opposed to the study of the antecedents of OCBs). The results of the present thesis set an early foundation for the development of other theoretical perspectives seeking to explain the individual-level consequences of OCBs, especially in the midst of existing and conventional OCB theories. All theories and conceptual claims require evidence across varied contexts. The findings provide convincing evidence supporting the proposed moderation model which can inspire others to test it across a range of different

cultures, occupations, industries, organisations, and employment categories.

Secondly, the findings support the theoretical usefulness of moderators such as job control and organisational support in explaining how OCBs may produce differential outcomes (positive and negative) for individual OCB performers. This support provides more weight to underlying theoretical frameworks such as the JDC-S/JD-R and ERI models which underpin the relevance of important contextual and psychosocial work factors that can either buffer or exacerbate the potentially negative effects of a variety of job stressors on the individual-level outcomes of job attitudes, stress and health. Clearly, there is a call to modify aspects of COR, JDC-S/JD-R, and ERI theories to accommodate OCBs as behaviourally-oriented job factors or demands in the psychosocial work environment that have the potential to consume resources, invite other stressors, and contribute to various types of job strain in employees.

Thirdly, further theoretical insights surrounding the discourse on the actual nature of OCB should benefit from the current results in a number of ways: (1) different categories of OCBs may have differential impacts on employee well-being and attitudes such that depending on the dimension of OCB, the impacts are likely to be varied, and (2) the nature of OCBs should not be theorised independent of their underlying motives, antecedents and consequences collectively; hence, future theoretical models of OCBs must include a wider and more diverse range of antecedents and consequences to permit a deeper and more comprehensive understanding of this rapidly maturing construct.

7.4.2. Practical Implications. Practitioners can also benefit from the findings in a number of ways. Firstly, the findings highlight the importance of organisational support and job control as mechanisms for enhancing physical and mental

well-being of employees at work. High level of organisational support provides sound encouragement and useful guidance to allow employees find better ways of coping with and managing burdens emanating from high levels of citizenship behaviours. Moreover, an adequate degree of job autonomy allows employees a sense of control and freedom to choose, organise, and manage their behaviours and other related workloads and burdens in the workplace. As a consequence, managers must ensure that workers are provided the opportunity to conduct various work activities and tasks with high levels of autonomy and access to a variety of support systems at work. The provision of these resources for employees who are OCB performers are likely to generate positive attitudinal and health-related effects for them, as well as buffer any potentially negative consequences associated with the performance of these extra-role behaviours.

Secondly, managers should able to monitor high OCB performers in their organisation and determine any potential psychosocial hazards or risks to employee well-being, and the extent to which they require any form of organisational assistance or intervention. A mixture of primary, secondary and tertiary interventions should be considered. Primary interventions involve preventative controls or proactive organisational efforts to protect employees at risk. These interventions include organisational systems to control or alleviate potential hazards at work such as altering the design of jobs to allow employees performing OCB to better manage their time, energy and efforts as well as their in-role task responsibilities. They may also involve the establishment of health and safety committees to monitor and manage these behaviours and other related workplace stressors. Secondary interventions occur after serious risk factors or hazards have been detected and involve changing the individual's perceptions

or response to the stressful situation. These interventions may include stress management training and workshops to help high OCB performers adjust their perceptions of these behaviours as well as their attributions of the situations that may elicit them. According to Spector and Fox (2010), the subsequent reactions of OCB performers to their intended targets may be either positive or negative depending on their attributions of the situation. Finally, tertiary interventions are reactive in nature. These interventions aim to reduce the adverse effects of stress-related problems once employees develop them. For example, OCB performers who develop problems of work-related depression or physical exhaustion become possible targets of these interventions. These interventions comprise significant attempts to help these 'strained' employees cope with and manage their health problems and include different forms of counselling, rehabilitative health programmes, and employee assistance initiatives. Overall, encouraging and supporting OCBs at work is vital, and the thesis provides a great depth of knowledge surrounding the role that control and support can play in maintaining the well-being of the OCB performer and, by extension, the entire organisation. Healthy workers equate to healthy organisations.

Thirdly, managers and other superiors in charge of employees should be mindful of undue burden that is created by pressuring employees to go beyond the call of duty. Work environments that employees perceived as burdensome and filled with pressure from the top are less attractive and are more likely to suffer higher levels of absenteeism, withdrawal behaviours, and even turnover. These situations can prove very costly to organisations who seek to directly or indirectly create such environments. Managers should be able to create work environments that are attractive to employees - ones that foster

high levels of respect, discretion, and mutual understanding between employees and superiors.

Finally, human resource managers should formulate and implement policies to train, develop, reward and retain OCB-performing employees as well as ensure that all HR practices and systems are aligned in ways to support and protect these employees as they engage in both in-role and extra-role job behaviours. In the area of recruitment and selection, HR managers should conduct comprehensive job analyses to ascertain the specific types of OCBs most critical to job success as well as those behaviours that least likely to be stressful. Based on job analysis data, HR practitioners can target their recruiting efforts adequately and sensibly to attract and extract the desired kinds of job recruits. With respect to training and development, the results of the study demonstrate that OCB, under certain circumstances (e.g. poorly skilled or untrained performers), can be harmful. Training employees to manage OCBs as well as developing effective skills to perform high quality OCBs (rather than quantity; working smart but not hard) is also an important consideration for HR practitioners seeking to deal with these behaviours at work. In terms of pay systems, individual merit-based systems or pay-for-performance schemes can be developed and implemented to compensate employees who demonstrate high quality OCBs. Indeed, such systems must be used alongside effective and fair performance assessment or appraisal systems that rely on multiple rater sources including co-workers, superiors, and customers. The use of multiple sources of ratings provides a more balanced and fairer assessment of OCBs as these behaviours are not naturally part of in-role task behaviours. However, as OCBs become more recognised by formal governance and HR systems of the organisation, the more likely these behaviours may emerge as 'prescribed' or formalised ways of behaviours. Care must still be

taken to clarify for employees the need to balance among these extra-role behaviours, in-role or task behaviours, and their health and well-being. In terms of actual rewards, HR practitioners must be able to determine those rewards that are most attractive to OCB performers. Using inappropriate reward systems are most likely ineffective and the reliance on externally-oriented rewards alone is heavily cautioned. As revealed in the existing literature, OCB performers are more likely to be driven by internal factors than by external ones (Organ et al., 2006).

7.5 Limitations of the Research and Future Research Recommendations

7.5.1 Study Limitations. There are a number of limitations that are likely to affect the results of the thesis. Firstly, although the thesis relied on peer report measures of OCBs, other measures of variables were self-reported. Self-reports normally present response bias and common method variance is likely when multiple variables are measured using single-method sources (i.e. a survey). Common method variance is a methodological and statistical artifact which is normally evidenced by inflated/deflated (or false) correlations among variables. However, Spector (2006) cautions that the problems surrounding common method variance have largely been exaggerated, and empirical evidence on its adverse impact on self-report studies has been inconclusive.

Secondly, the thesis examined only two waves, but others (Taris & Kompier, 2003) have argued that at least three waves as well as varying time lag lengths (e.g. 6 months, 1 year, 2 year, etc) should provide more valid assessments of causality to better ascertain and uncover 'hidden' causal processes and mechanisms.

Thirdly, the thesis examined only two psychosocial factors as moderators: organisational support and job control (measured by an autonomy scale). Theoretically, these two factors would provide only limited assessment of the large body of relevant moderating factors that are likely to account for the relationships between OCBs and the outcome variables, and hence, other moderators omitted in the present thesis (e.g. task characteristics such as feedback and task variety and person characteristics such as emotional intelligence and personality traits) could have provided better assessments of moderation than support and control alone.

Finally, the thesis was conducted within a small island territory in Caribbean (Barbados). As a consequence, the generalisability and applicability of the findings to other populations in developing countries outside of the Caribbean as well as developed countries (e.g. USA and Europe) is questionable. As stated in an earlier chapter, national culture emerges as a key factor that is likely to affect the way OCBs are perceived, defined, and measured. Consistent with this view, Kwantes, Karam, Kuo, and Towson (2008) argued that studies on OCBs measured at the level of the individual alone are "unable to rule out the influence of relevant variables existing at other levels of analysis" (p. 231). These researchers underscored the need to measure and assess OCB at multiple levels of analysis, and take into account the influence of culture on a study's findings. Moreover, they contended that culture-related variables are likely to shape how individuals perceive or conceptualise OCB as well as the likelihood of their performing this behaviour; hence, the present thesis does not guarantee that the findings are replicable across cultures outside of the Caribbean whose culture is markedly different from those in other developed parts of the world. For example, Punnett, Dick-Forde, and Robinson (2006) examined the national cultural

profile in the Caribbean and its relationship with organisational behaviour and practices among three Caribbean countries including Barbados. They argued that "the specific geographic and historic circumstances of the Caribbean in general, and the English-speaking Caribbean in particular, are likely to have resulted in a somewhat unique cultural value system..." (p. 50). They also highlighted that it is very likely that studies conducted in other parts of the globe are likely to generate uniquely different findings, if national culture is not controlled for.

7.5.2 Recommendations for Future Research. Several recommendations for future research are noteworthy. Firstly, it is recommended that future research seek to test the current conceptual model across different cultures and organisational/occupational contexts as well as seek to examine a wider range of moderating variables including other contextual and personality variables, and a wider variety of subjectively- and objectively-measured outcome variables including physical/mental health, attitudinal, behavioural, and stress-related variables. Somech and Drach-Zahavy (2013) suggested that "future research should extend the inquiry to other moderators to advance our understanding of OCB on employees' well-being" (p. 146). In particular, moderator variables may include Big five personality factors, ability-based measures, emotional intelligence, leadership effectiveness, work-related self-esteem, formalisation, routinisation, and centralisation. Outcome variables may include a variety of job performance such as task performance and counterproductive work behaviours, burnout/emotional exhaustion, absenteeism, withdrawal behaviours, turnover, employee engagement, task productivity, intrinsic motivation, and efficiency.

Secondly, researchers should continue these model assessments within longitudinal contexts (e.g. panel designs of three waves or more with varying lag lengths) to permit a better

determination of the causal relations among variables. Continual tests of normal, reverse, and reciprocal causation should be a natural practice for longitudinal researchers testing the relationships between OCBs and other variables. The use of advanced modelling statistics such as SEM should incorporate more rigorous statistical assessments including moderated mediation and mediated moderation involving OCBs, moderators, mediators and outcome variables.

Thirdly, future research is also advised to examine other operational measures of OCBs (outside of OCB-I and OCB-O) to better ascertain further differential impacts of different categories of extra-role job behaviours. Organ et al. (2006) highlighted that various forms and operationalisations of OCBs are likely to generate different outcomes at the individual and organisational levels. Hence, tests of model validity utilising different measurements of OCBs may prove fruitful for future researchers. Moreover, the analysis of supervisor-rated, self-reported and peer-reported OCBs is necessary for comparative assessments to improve the validity of conclusions drawn on different source ratings of OCBs.

Fourthly, the study was limited in examining the individual-level consequences of OCBs, and further research is needed to examine the organisational-level consequences of OCBs including objective indicators of organisational performance, effectiveness, and efficiency. The use of organisational-level moderators is required here including factors such as size, industry, type of strategy, and organisational culture, among others. Hence, models for the consequences of OCB can be conducted at the individual, task group, and organisational level of analysis, simultaneously.

As the present research was conducted among participants from a Caribbean island context, it is expected that further tests of the proposed moderation model be done within both

developed and developing countries to permit better evaluations of the model's cross-cultural stability and validity as well as permit the possibility of inter-country comparisons. In keeping with the views of Punnett et al. (2006) and Kwantes et al. (2008), incorporating national culture as another key moderator in model testing attempts is a chief consideration for future researchers which may allow one to determine the significance of this factor in related conceptual models.

7.6 Conclusion

Overall, the thesis provided some support for the newly proposed moderation model in which organisational support and job control moderated a number of relationships between OCBs and job attitudes, role stressors, and health-related outcomes. The cross-sectional findings of Study 2 and longitudinal findings of Study 3 were generally consistent regarding the moderating hypotheses in the proposed moderation model. The findings are favourable to existing theoretical frameworks that suggest that high levels of organisational support and job control lead to healthier and more positive employee-level outcomes, whereas low levels of these critical resources lead to more negative employee-level outcomes for high OCB performers.

The study of the consequences of OCBs is still in its infancy, but this thesis provides one of the first scientific attempts to theorise about and empirically examine the complex nature of OCBs with respect to its effects on a number of individual-level variables. Organisational support and job control are indeed invaluable resources, rewards and factors for improving employee attitudes and well-being, reinforcing the powerful role that the psychosocial work environment plays in context of organisational behaviour and employee relations. Future theorising and empirical investigation of OCB as a

construct is thus required if the body of knowledge surrounding these behaviours is to mature.

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APPENDIX A: MODERATION MODELS (STUDY 1) AND INTERACTION GRAPHS (STUDY 2)

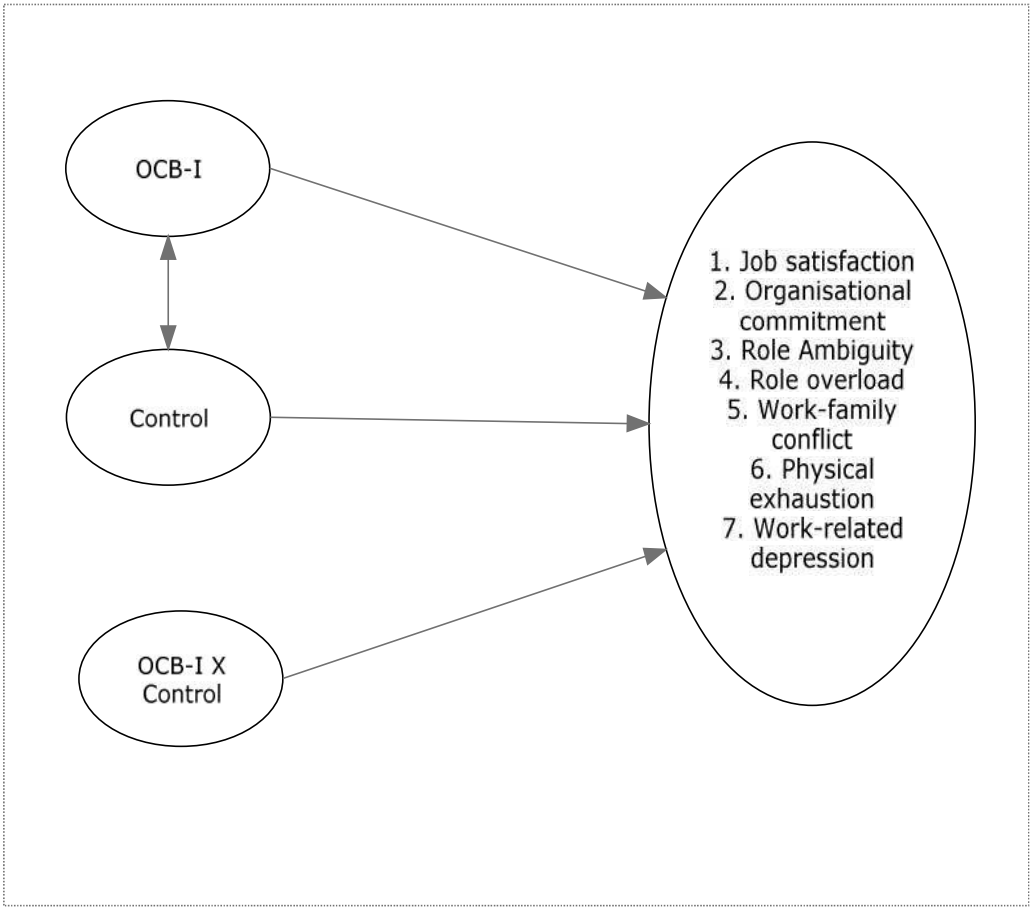

Figure A1. Moderation model 1 (MM1)

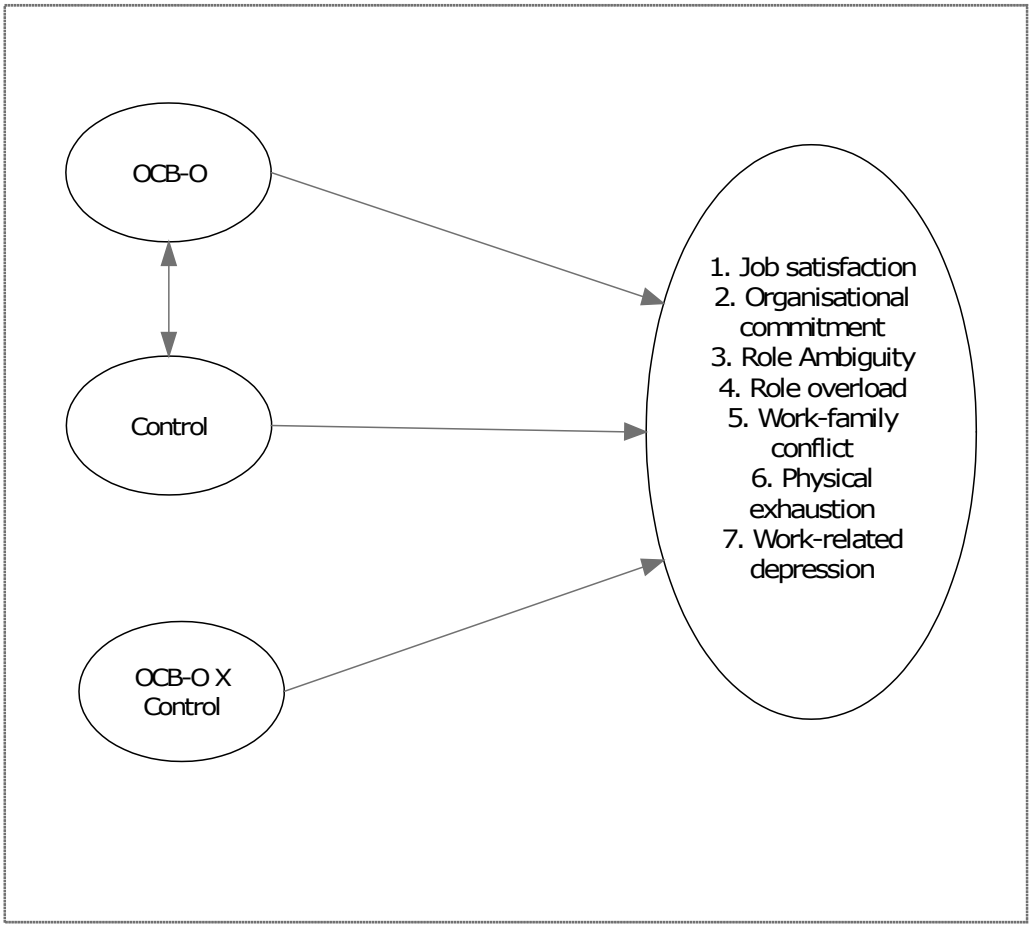

Figure A2. Moderation model 2 (MM2)

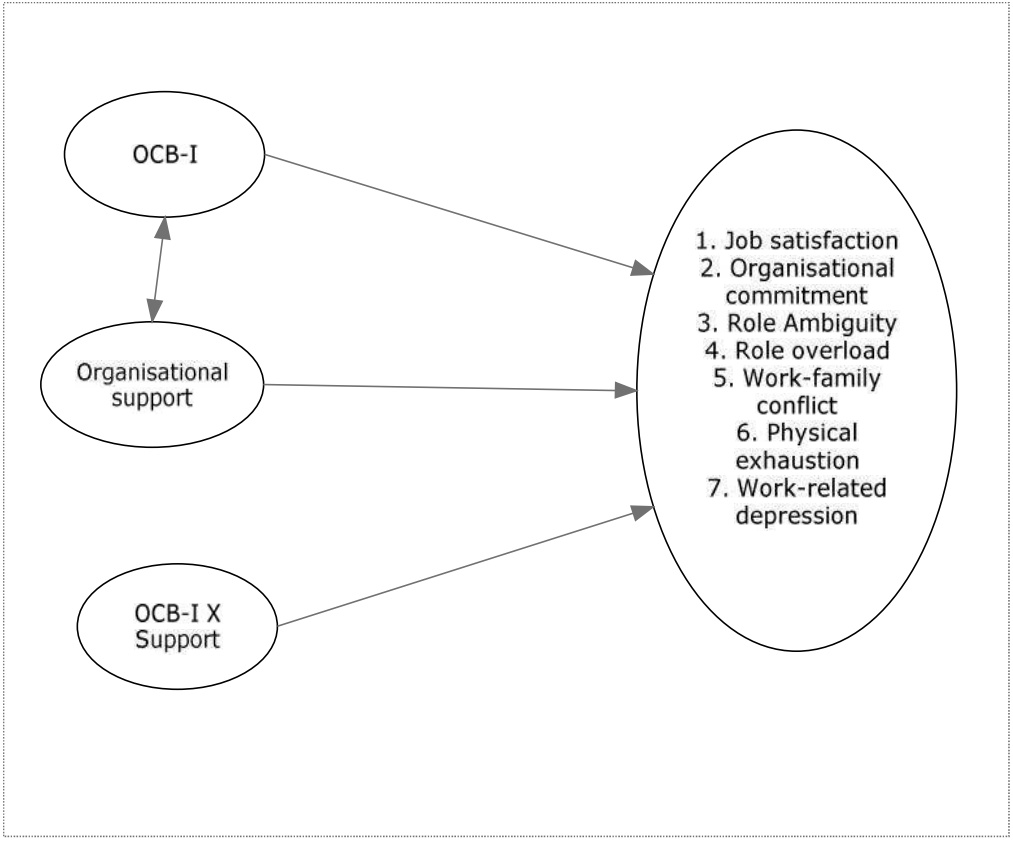

Figure A3. Moderation model 3 (MM3)

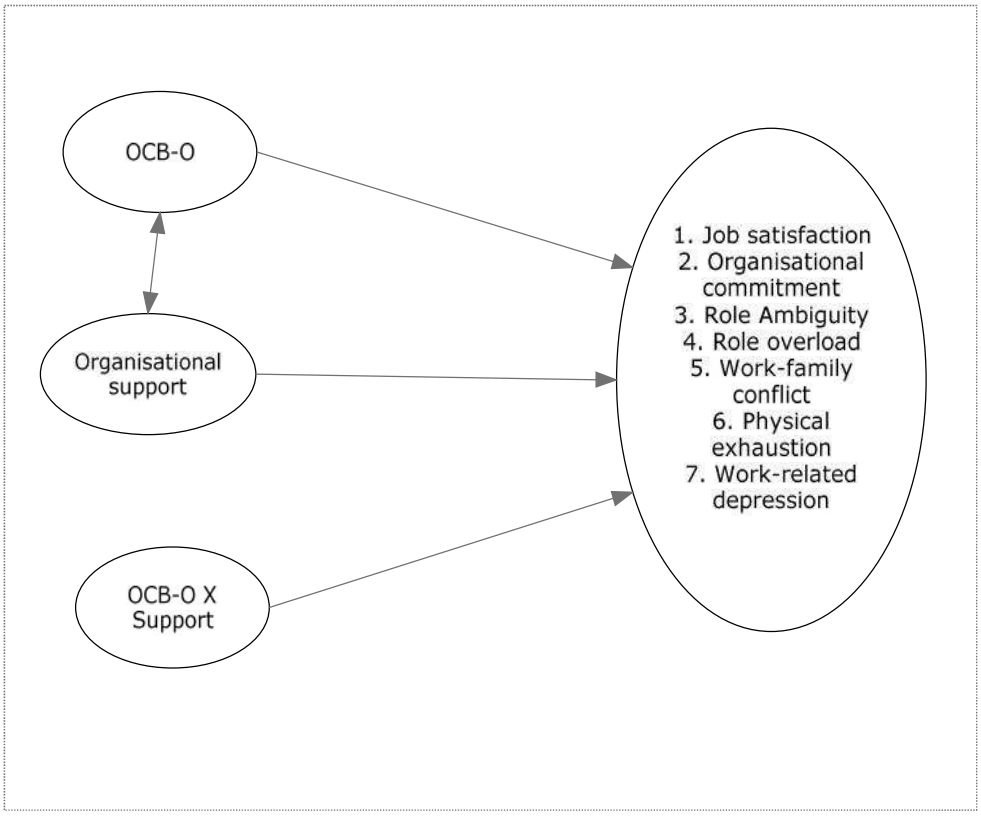

Figure A4. Moderation model 4 (MM4)

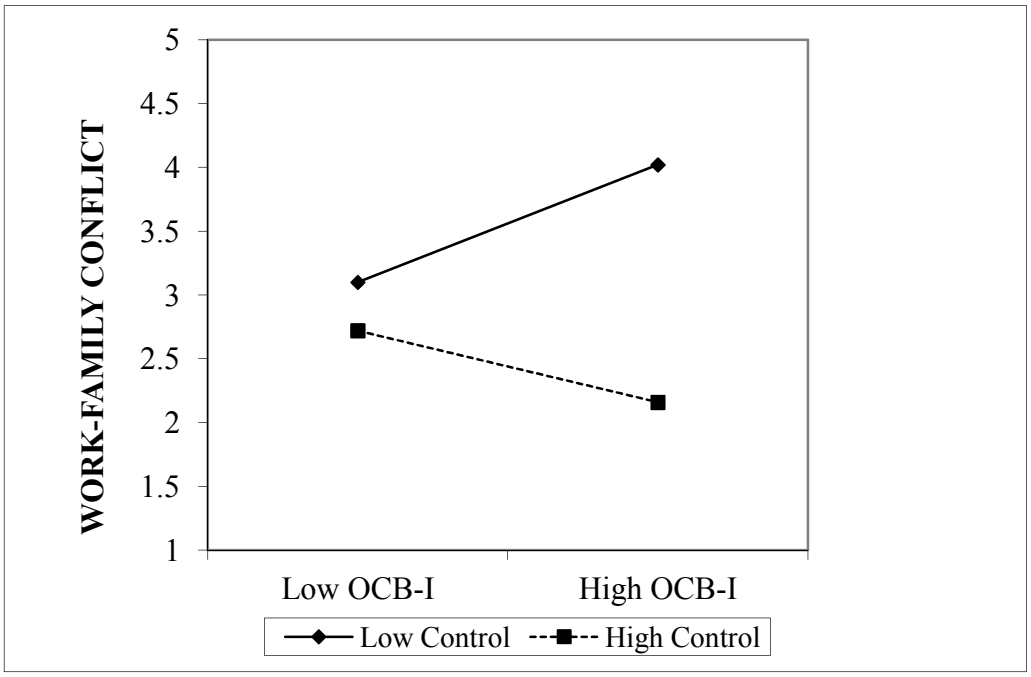

Figure A5. Control as a Moderator in OCB-I and Work-Family Conflict (Time 2 only)

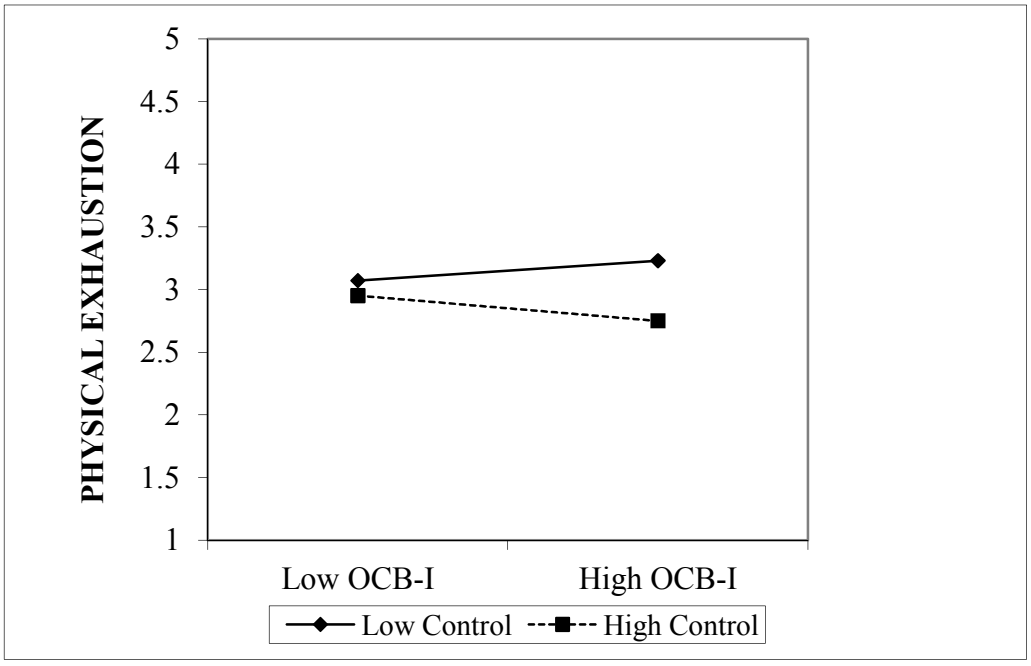

Figure A6. Control as a Moderator in OCB-I and Physical Exhaustion (Time 2 only)

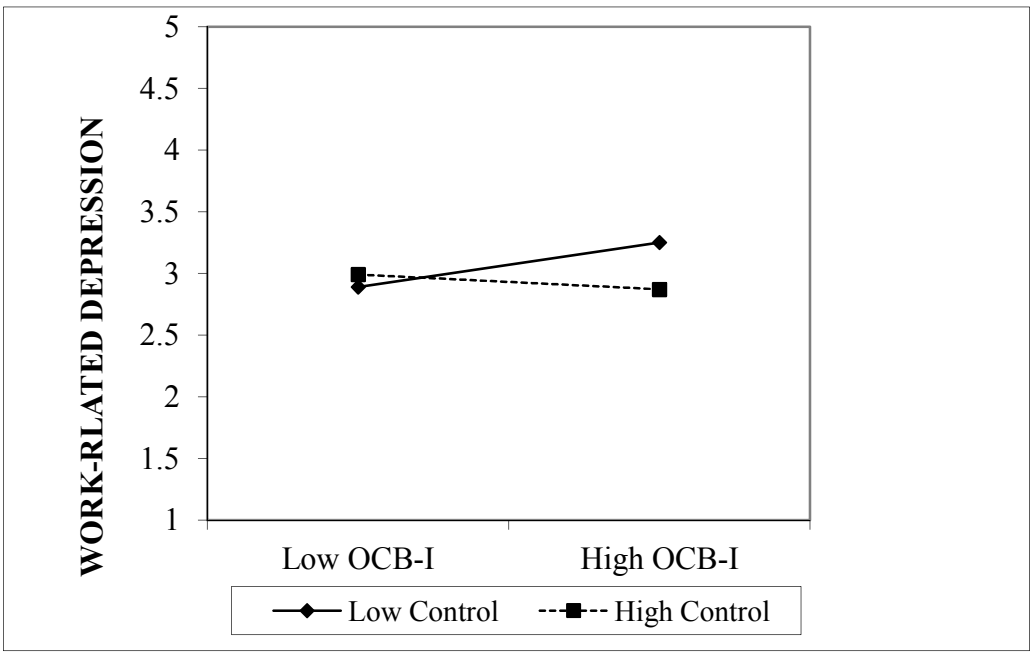

Figure A7. Control as a Moderator in OCB-I and Work-Related Depression (Time 2 only)

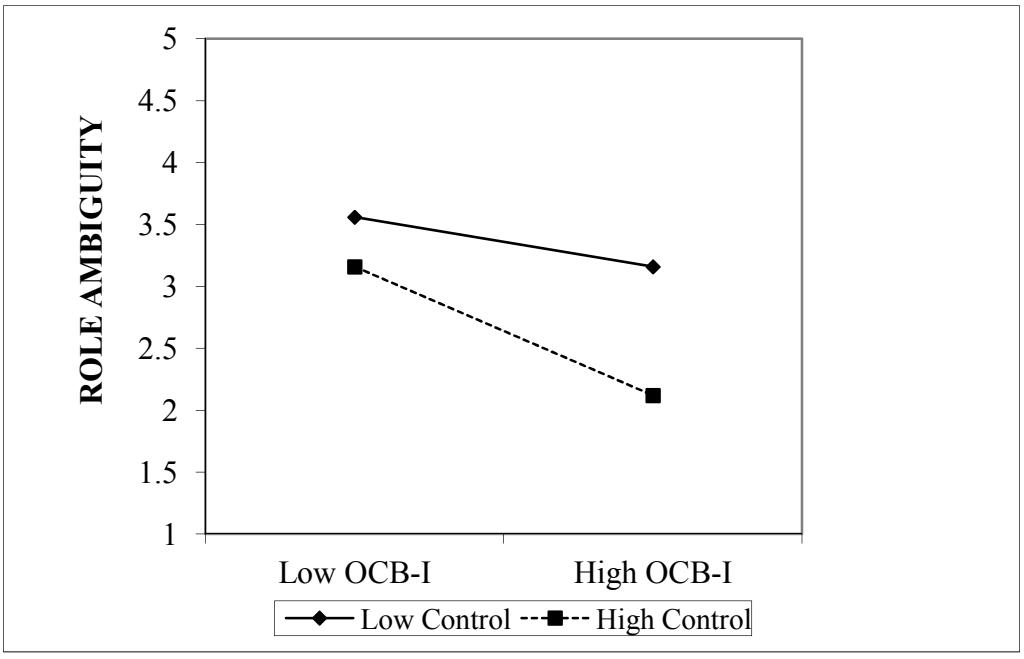

Figure A8. Control as a Moderator in OCB-I and Role Ambiguity (Time 2 only)

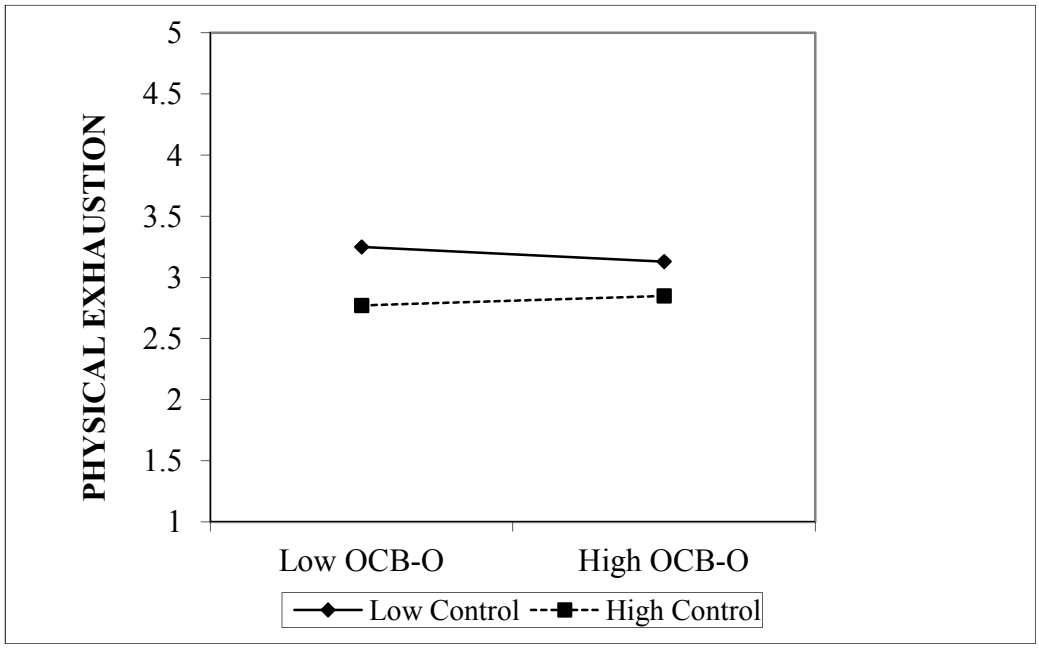

Figure A9. Control as a Moderator in OCB-O and Physical Exhaustion (Time 2 only)

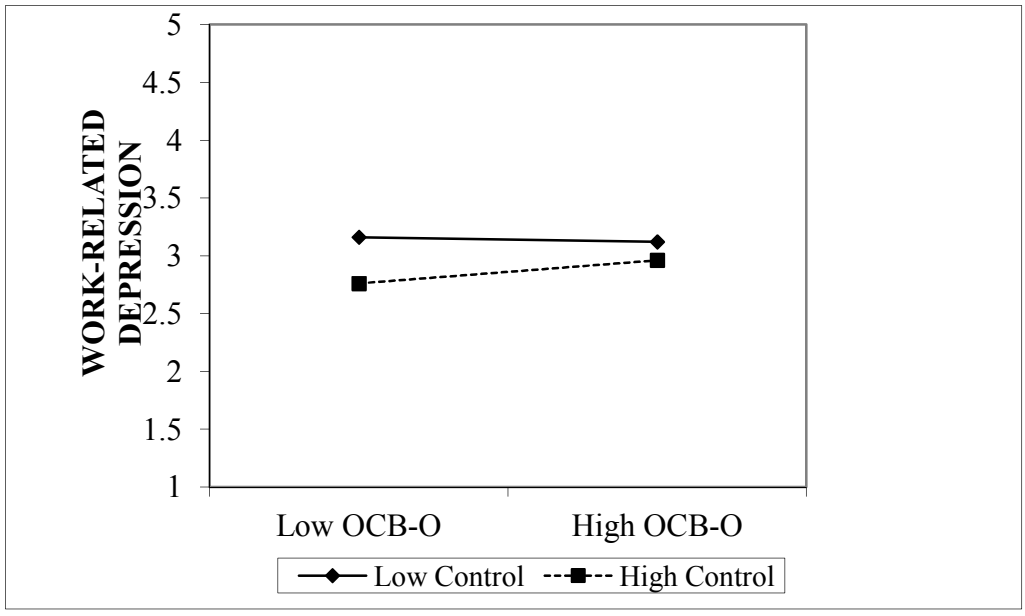

Figure A10. Control as a Moderator in OCB-O and Work-Related Depression (Time 2 only)

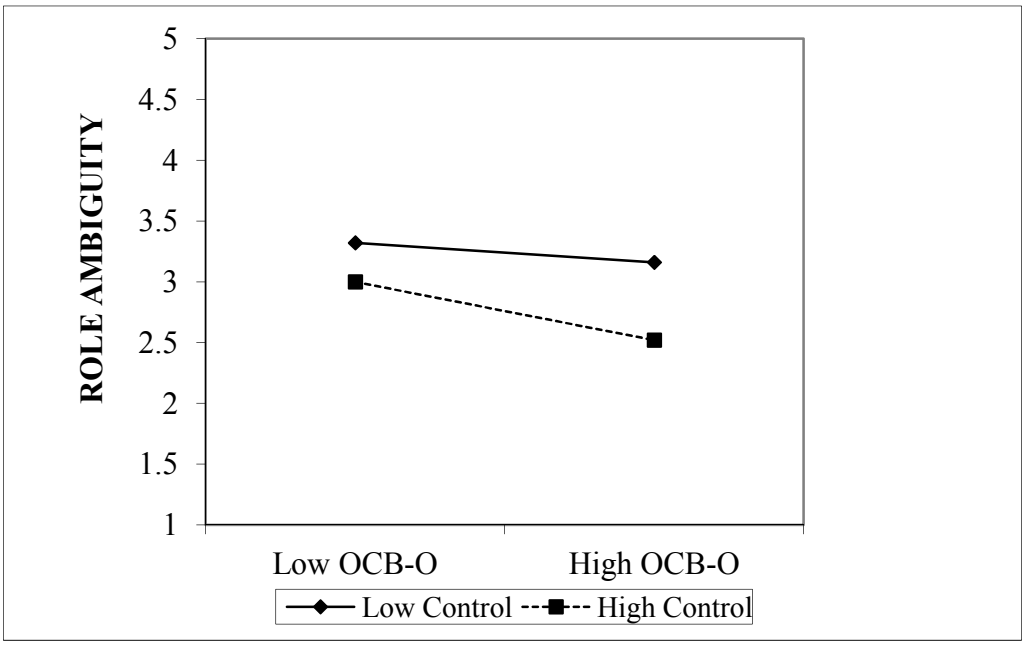

Figure A11. Control as a Moderator in OCB-O and Role Ambiguity (Time 2 only)

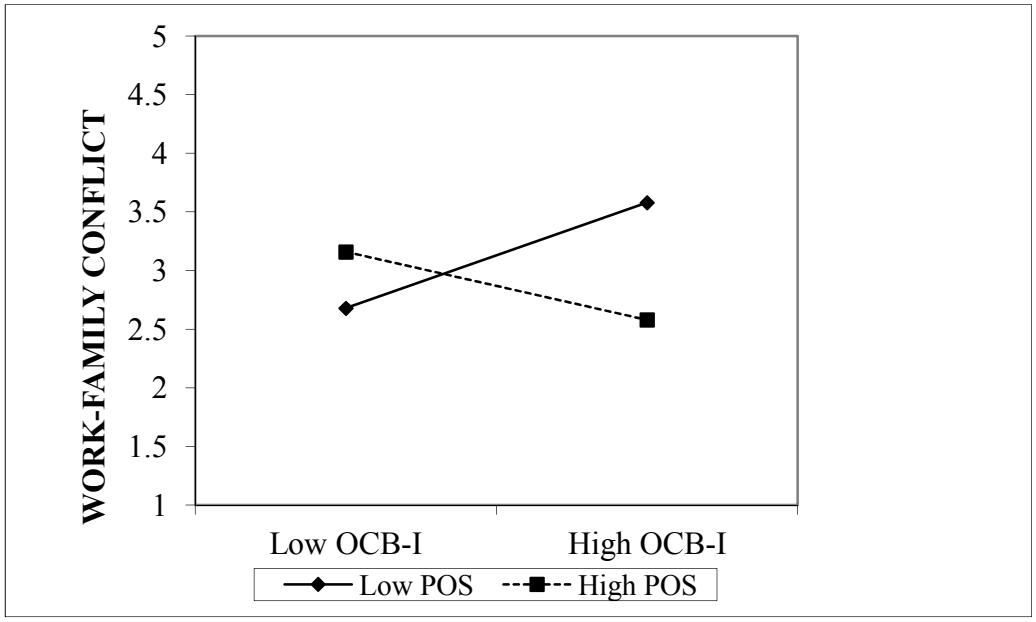

Figure A12. Perceived Organisational Support as a Moderator in OCB-I and Work-Family Conflict (Time 2 only)

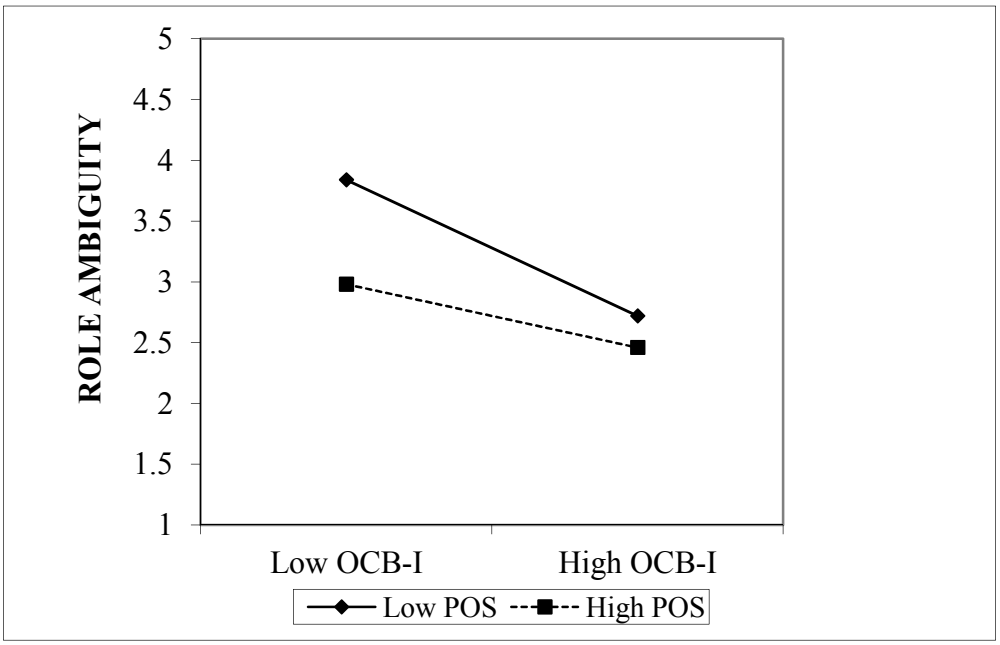

Figure A13. Perceived Organisational Support as a Moderator in OCB-I and Role Ambiguity (Time 2 only)

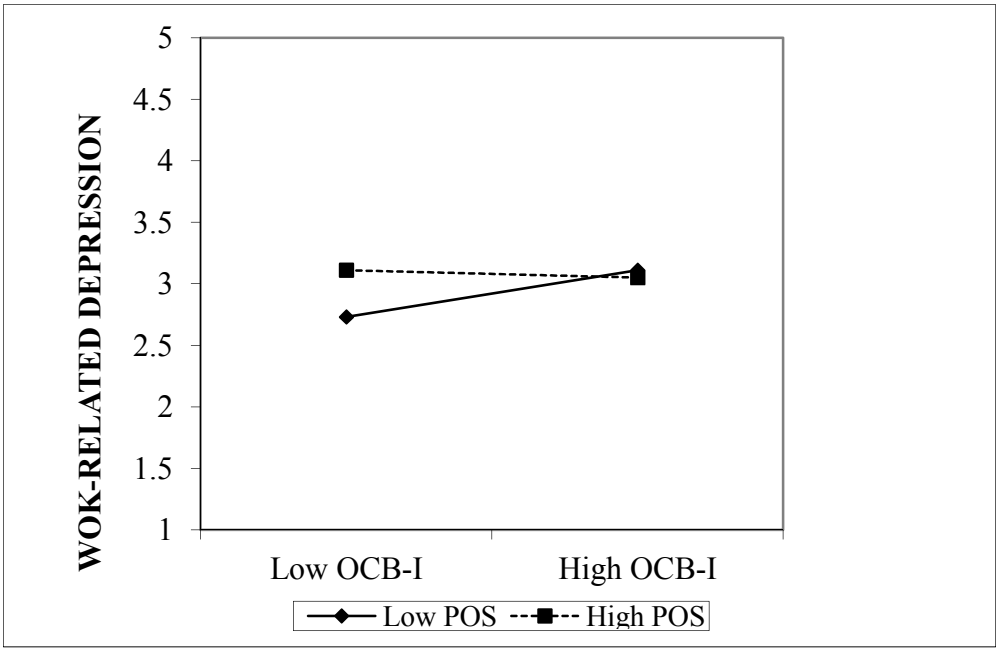

Figure A14. Perceived Organisational Support as a Moderator in OCB-I and Work-Related Depression (Time 2 only)

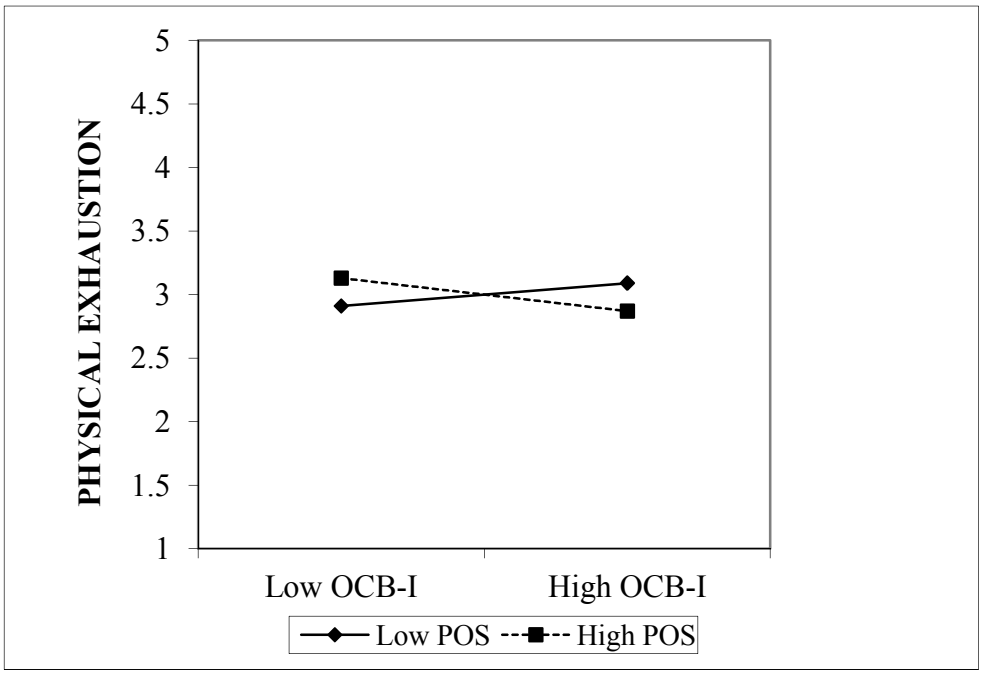

Figure A15. Perceived Organisational Support as a Moderator in OCB-I and Physical Exhaustion (Time 2 only)

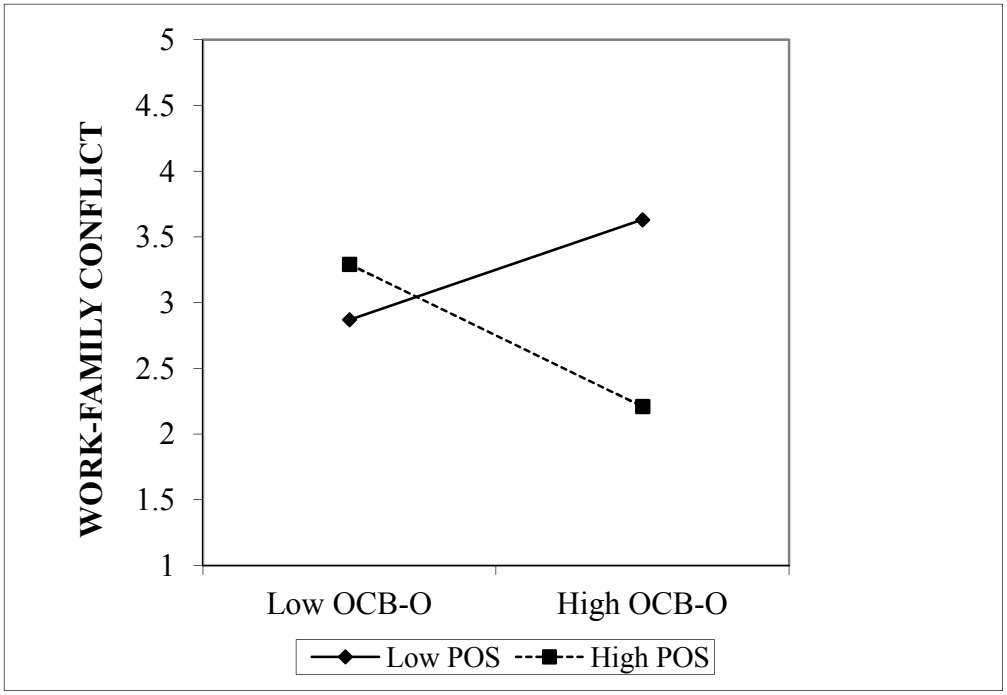

Figure A16. Perceived Organisational Support as a Moderator in OCB-O and Work-Family Conflict (Time 2 only)

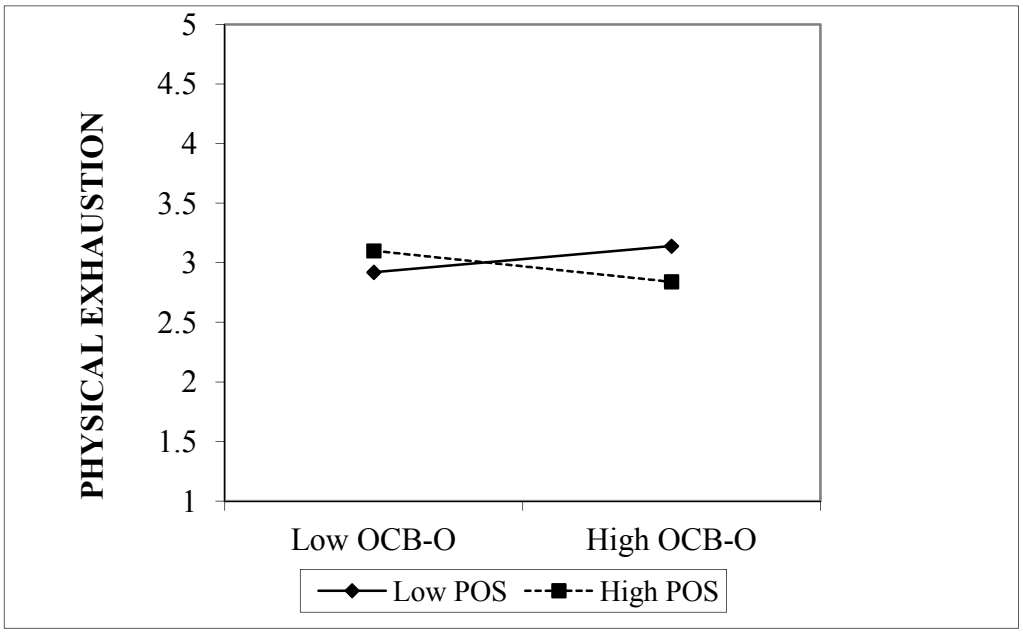

Figure A17. Perceived Organisational Support as a Moderator in OCB-O and Physical Exhaustion (Time 2 only)

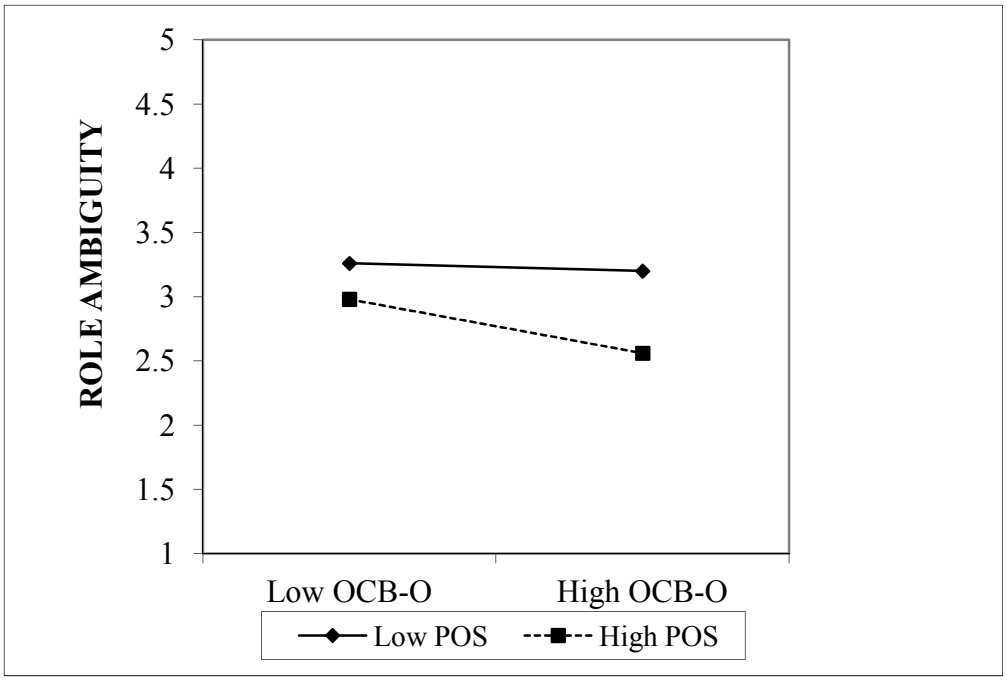

Figure A18. Perceived Organisational Support as a Moderator in OCB-O and Role Ambiguity (Time 2 only)

APPENDIX B: INTERACTION GRAPHS (STUDY 3)

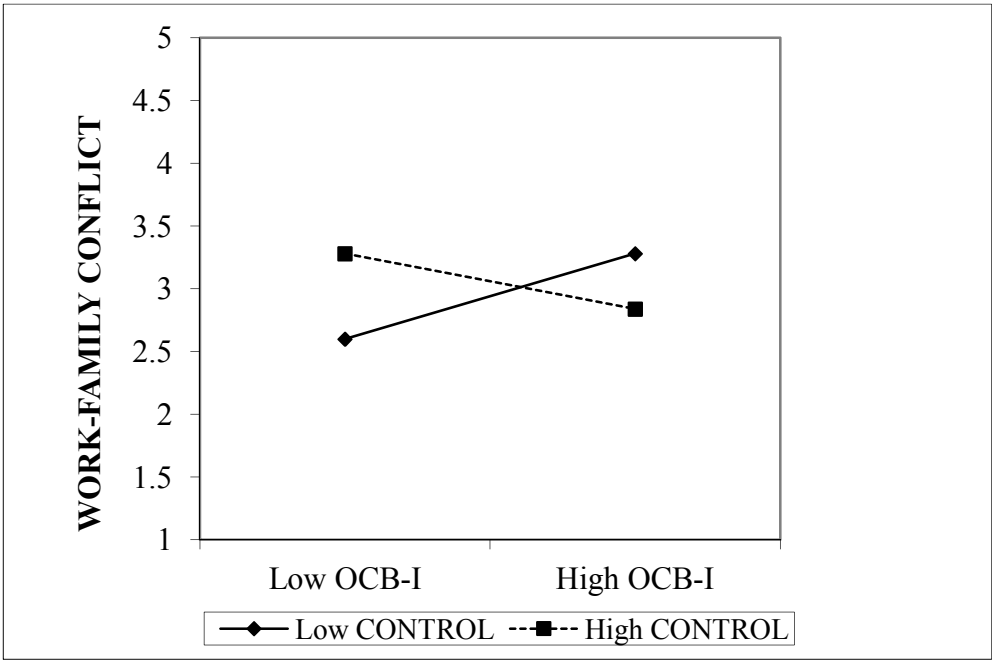

Figure B1. Control as a Moderator in OCB-I and Work-Family Conflict (Time 1 to Time 2)

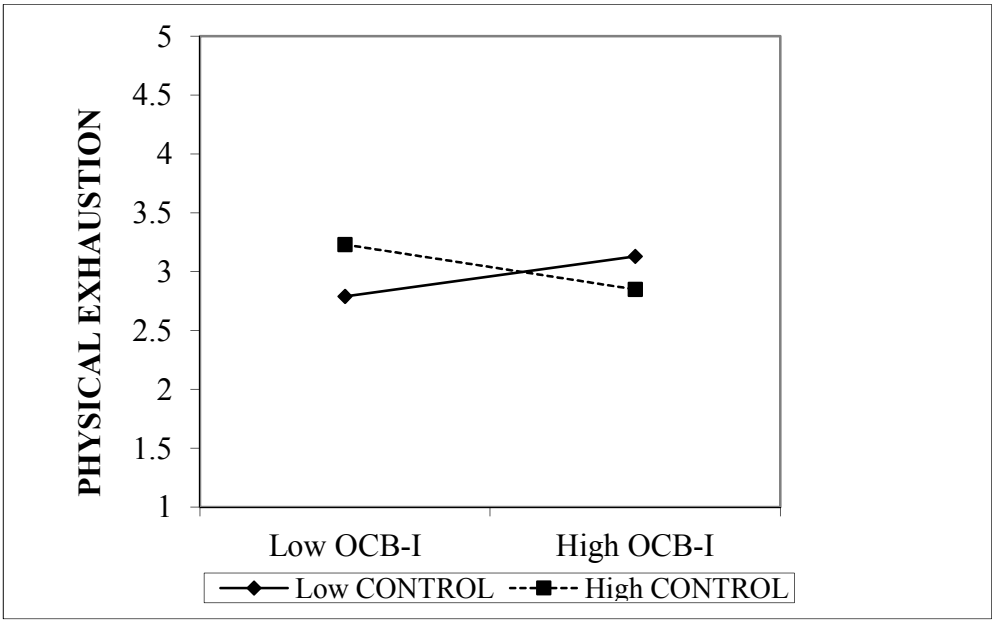

Figure B2. Control as a Moderator in OCB-I and Physical Exhaustion (Time 1 to Time 2)

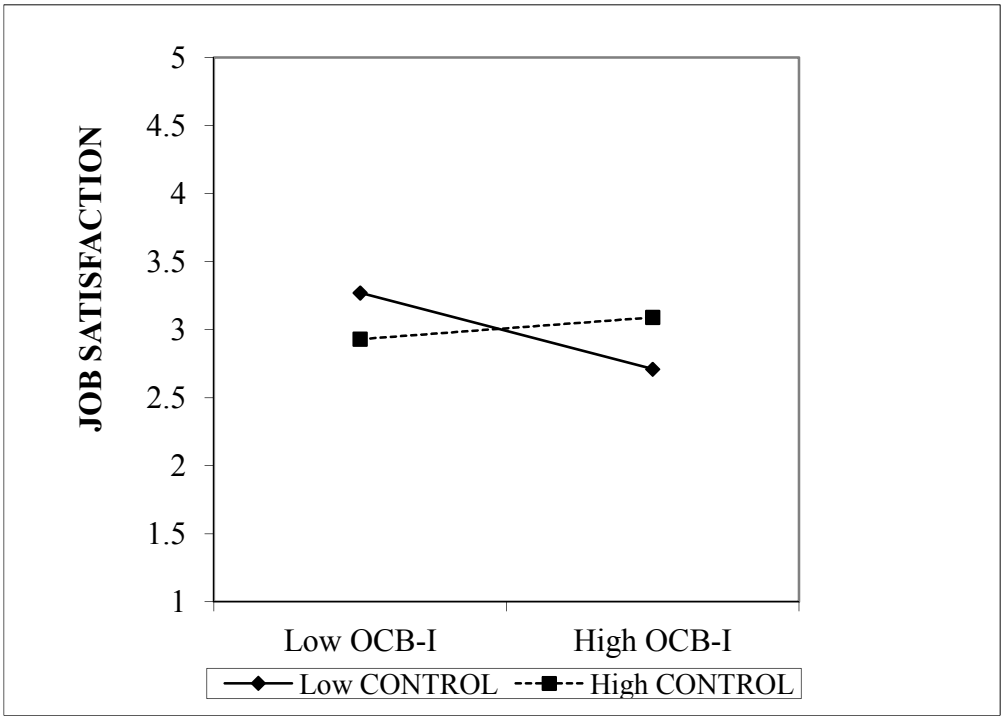

Figure B3. Control as a Moderator in OCB-I and Job Satisfaction (Time 1 to Time 2)

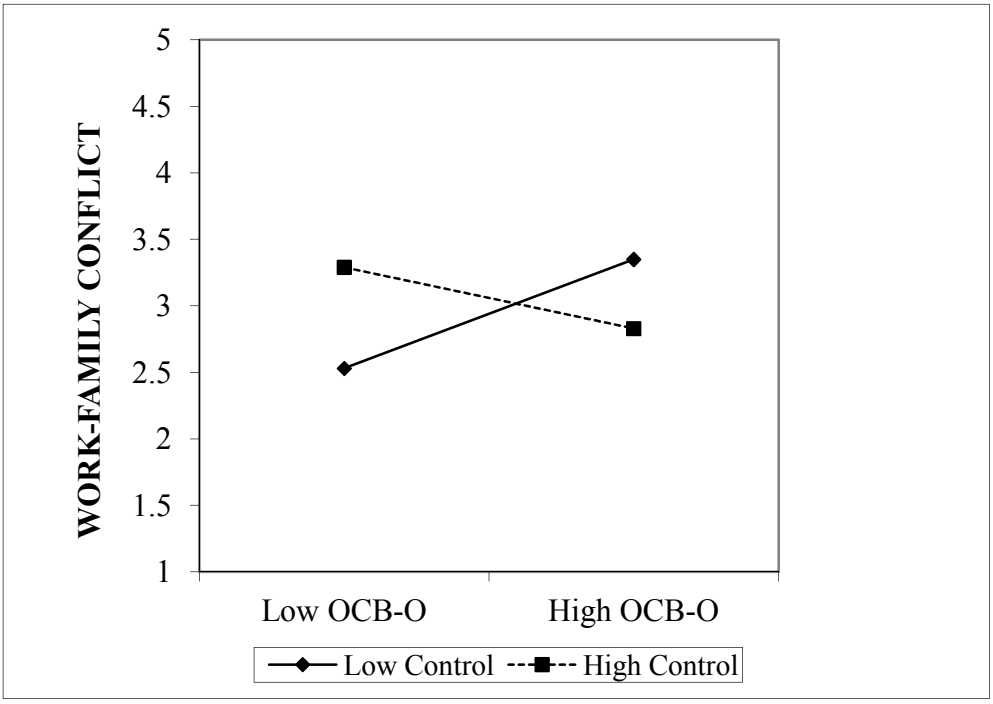

Figure B4. Control as a Moderator in OCB-O and Work-Family Conflict (Time 1 to Time 2)

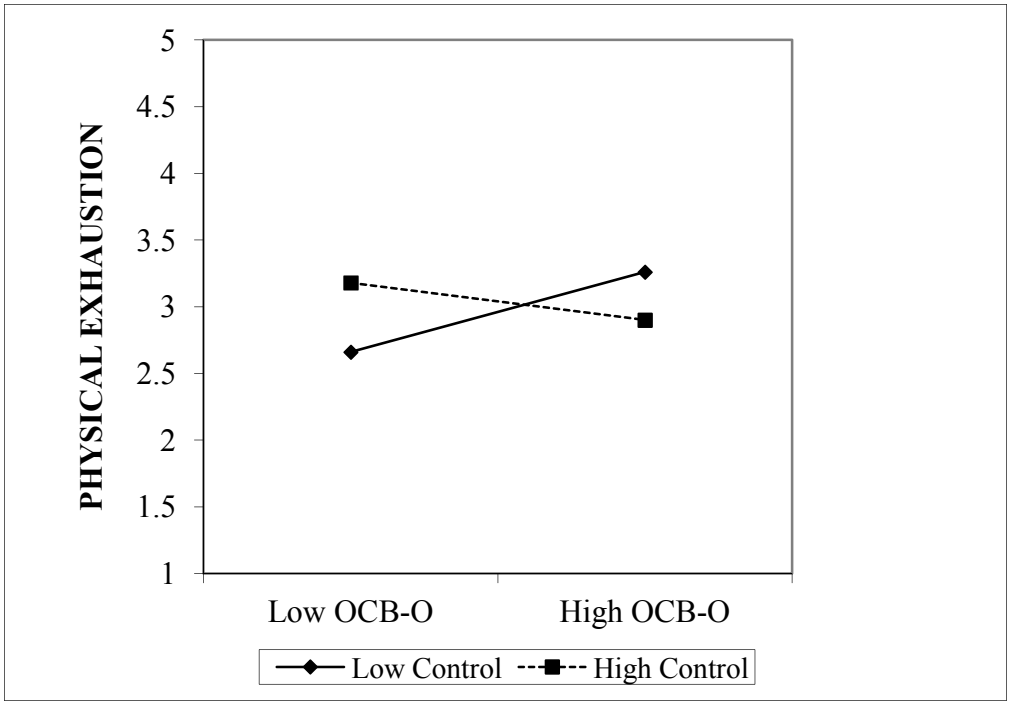

Figure B5. Control as a Moderator in OCB-O and Physical Exhaustion (Time 1 to Time 2)

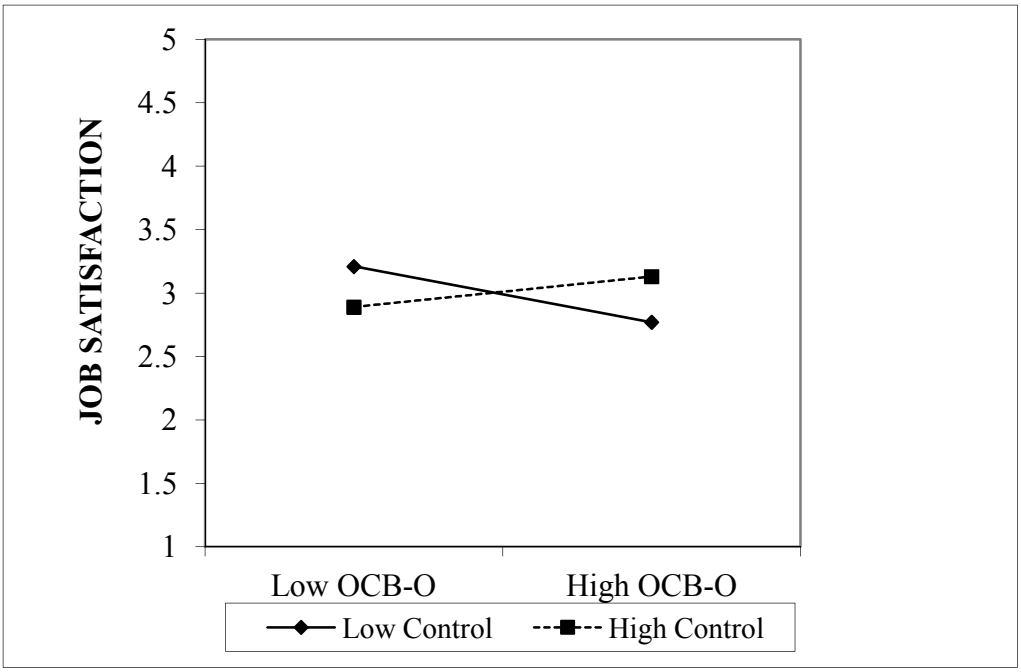

Figure B6. Control as a Moderator in OCB-O and Job Satisfaction (Time 1 to Time 2)

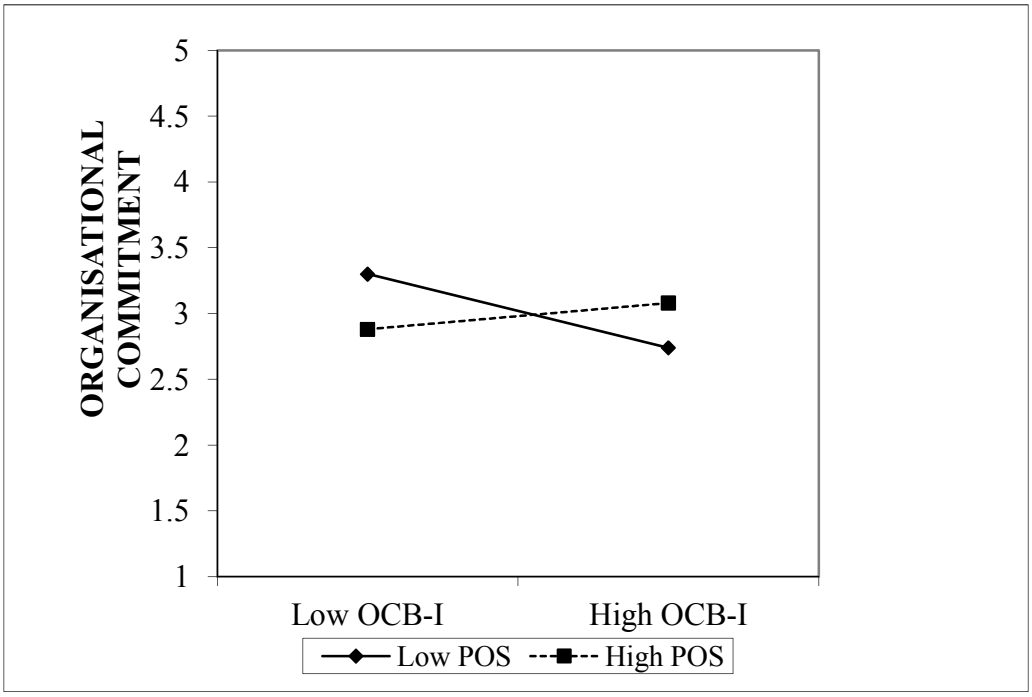

Figure B7. Perceived Organisational Support as a Moderator in OCB-I and Organisational Commitment (Time 1 to Time 2)

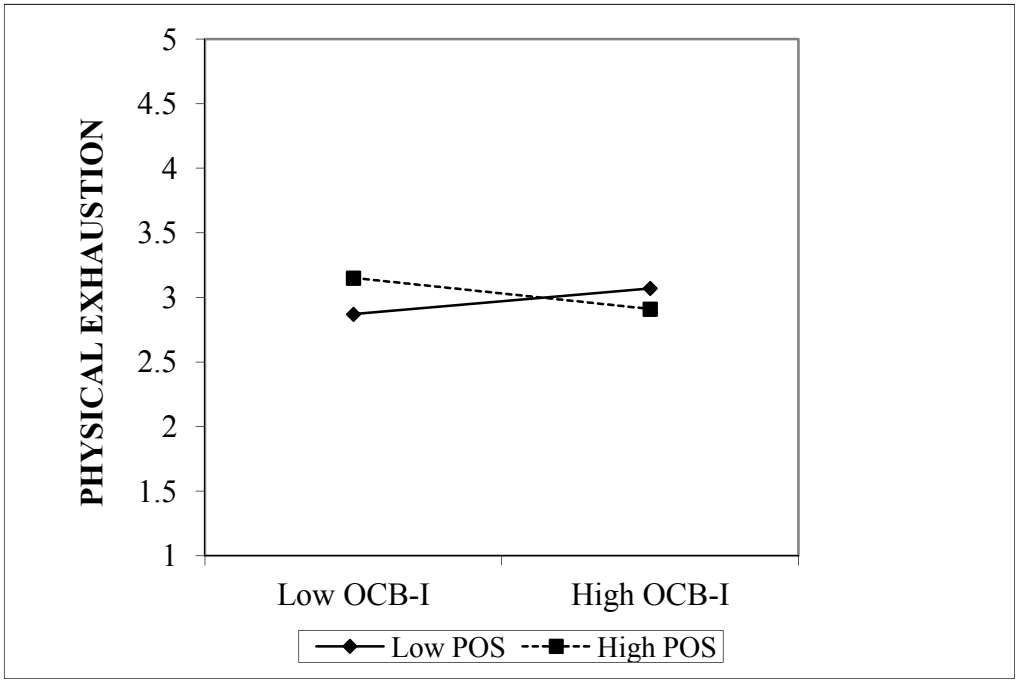

Figure B8. Perceived Organisational Support as a Moderator in OCB-I and Physical Exhaustion (Time 1 to Time 2)

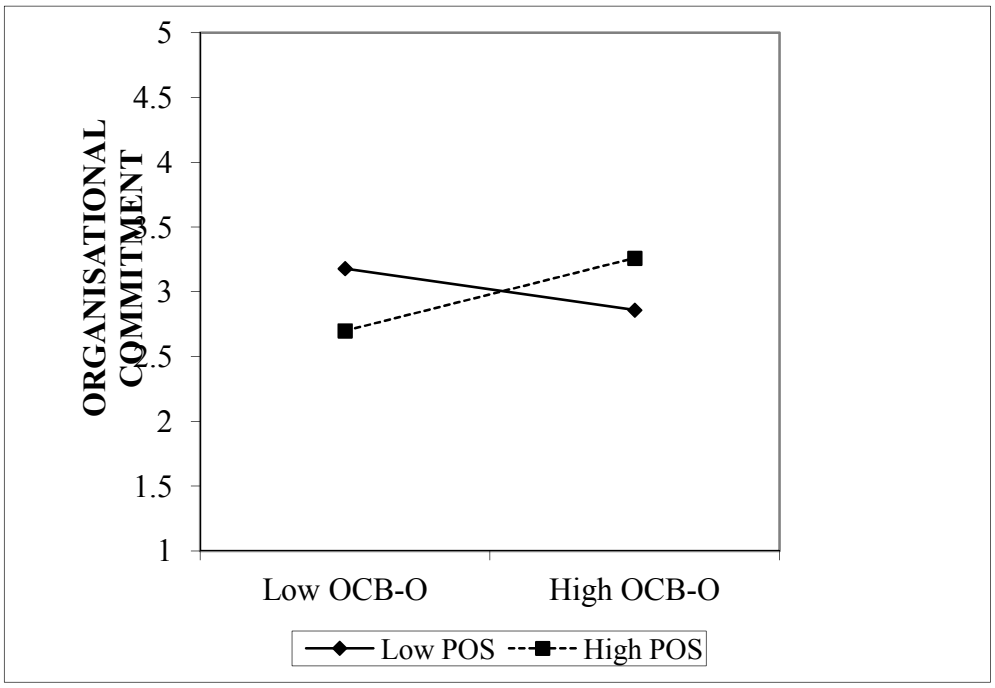

Figure B9. Perceived Organisational Support as a Moderator in OCB-O and Organisational Commitment (Time 1 to Time 2)

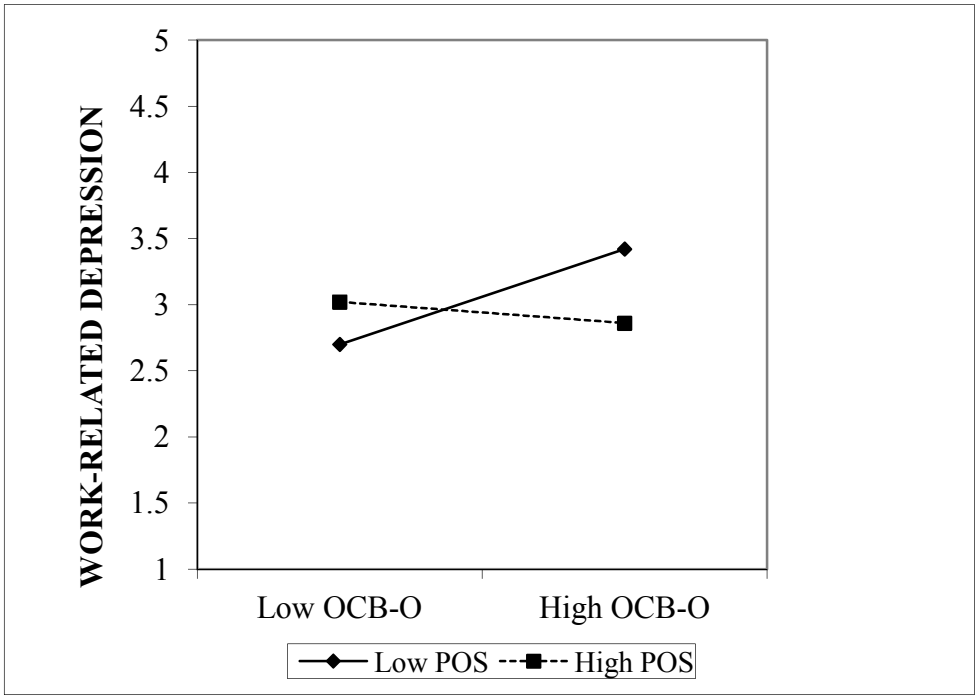

Figure B10. Perceived Organisational Support as a Moderator in OCB-O and Work-Related Depression (Time 1 to Time 2)

APPENDIX C: EMPLOYEE QUESTIONNAIRE AT TIME 1

QUESTIONNAIRE

Dear Respondent,

I am a postgraduate research student at the University of Nottingham pursuing a Ph.D in Applied Psychology. I am currently conducting a survey of employees across various organisations and sectors in Barbados in an effort to complete my Ph.D research. The overall purpose of this project is to investigate job behaviours that employees engage in which go beyond their normal contractual obligations – these behaviours are referred to as organisational citizenship behaviours. In particular, I will examining whether these behaviours have an impact on employees' job attitudes and overall well-being at work.

In order to conduct this research, I am planning to survey employees in this organisation on two occasions to measure how these behaviours at a particular time period may affect their attitudes and well-being in a later period (this type of research is referred to as a longitudinal research). The first round of data-collection will coincide with this month, and the second round of data-collection will start exactly one year from this period. Hence, we are requesting your consent to complete the questionnaire at this period. Given that you would have to be re-contacted a year from now to complete the questionnaire in the second wave of data-collection, I am requesting your contact details (telephone/mobile numbers and email addresses) to assist in reaching you during that period.

In completing the questionnaire, please be honest and frank; there are no right or wrong answers. Identifiable personal details have deliberately been omitted to ensure anonymity of responses (if applicable). No one from the employing organisation will see any of the completed questionnaires. This questionnaire asks about your own experiences. Completion and return of the survey are entirely voluntary. I hope that you will find the questionnaire interesting and will assist me by returning it as soon as possible.

Thank you for your time and assistance. If you require more information about the study, please contact me at the following details below:

Dwayne Devonish
Email addresses:devonishman13@hotmail.com
dwayne.devonish@cavehill.uwi.edu
Mobile/Telephone nos.: 424-7744 / 830-9349

Sincerely,

Dwayne Devonish

PLEASE PROVIDE INFORMATION IN THIS SECTION. ALL INFORMATION PROVIDED HERE WILL BE SECURED BY THE RESEARCHER

NAME: (If you wish you can put your first name initial, and full last name such as 'D. Devonish'; but your full name is preferred)

NAME OF ORGANISATION:

EMAIL ADDRESS:

CONTACT NUMBER(s): (This can be your home, mobile or work phone that will be used to contact you - a year from now - to answer the questionnaire again to allow us to make comparisons for the year.

Section A: Organisational Citizenship Behaviours

Instructions: Please answer each statement (1 to 14) by **CIRCLING** the number that best reflects your level of agreement, ranging from "**Strongly Disagree" (1)** to **"Strongly Agree" (5).**

	Indicate the extent to which <u>YOU</u>, as an employee of your organisation, engage in the following:	**Strongly Disagree**	**Disagree**	**Neither Agree or Disagree**	**Agree**	**Strongly Agree**
1.	Help others who have been absent from work	1	2	3	4	5
2.	Help others who have heavy workloads	1	2	3	4	5
3.	Assist supervisor/co-worker with his or her work (when not asked)	1	2	3	4	5
4.	Take time to listen to co-workers' problems and worries	1	2	3	4	5
5.	Go out of the way to help new employees	1	2	3	4	5
6.	Take a personal interest in other employees	1	2	3	4	5
7.	Pass along information to co-workers	1	2	3	4	5
8.	Have attendance at work which is above the norm	1	2	3	4	5
9.	Give advance notice when unable to come to work	1	2	3	4	5
10.	Take undeserved work breaks	1	2	3	4	5
11.	Spend a great deal of time with personal phone conversations at work	1	2	3	4	5
12.	Complain about insignificant things at work	1	2	3	4	5
13.	Conserve and protect organisational property	1	2	3	4	5
14.	Adhere to informal rules created to maintain order in the organisation	1	2	3	4	5

Section B: Work Attitudes and Characteristics

Instructions: Please circle the number, on each item, that best indicates how you feel about various aspects of your work in your organisation, ranging from Strongly Disagree (1) to Strongly Agree (7).

		Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly
1.	I am quite proud to be able to tell people who it is that I work for	1	2	3	4	5	6	7
2.	I sometimes feel like leaving this employment for good	1	2	3	4	5	6	7
3.	I am not willing to put myself out just to help the organisation	1	2	3	4	5	6	7
4.	Even if the firm were not doing too well financially, I would be reluctant to change to another employer	1	2	3	4	5	6	7
5.	I feel myself to be part of the organisation	1	2	3	4	5	6	7
6.	In my work I like to feel I am making some effort, not just for myself, but for the organisation as well	1	2	3	4	5	6	7
7.	The offer of a bit more money with another employer would not seriously make me think of changing my job	1	2	3	4	5	6	7
8.	I would not recommend a close friend to join our staff	1	2	3	4	5	6	7
9.	To know that my own work had made a contribution to the good of the organisation would please me	1	2	3	4	5	6	7
10.	All in all, I am satisfied with my job	1	2	3	4	5	6	7
11.	In general, I don't like my job	1	2	3	4	5	6	7
12.	In general, I like working here	1	2	3	4	5	6	7
13.	At work, I know exactly what is expected of me	1	2	3	4	5	6	7
14.	I know that I have divided my work time properly	1	2	3	4	5	6	7
15.	Explanation is clear of what has to be done at work	1	2	3	4	5	6	7
16.	I feel certain about how much authority I have at work	1	2	3	4	5	6	7
17.	I know what my work responsibilities are	1	2	3	4	5	6	7
18.	Clear, planned goals and objectives exist for my job	1	2	3	4	5	6	7
19.	The demands of work interfere with family life	1	2	3	4	5	6	7
20.	The amount of time my job takes up makes it difficult to fulfill family responsibilities	1	2	3	4	5	6	7
21.	Things I want to do at home do not get done because of the demands my job puts on me	1	2	3	4	5	6	7
22.	My job produces strain that makes it difficult to make changes to my plans for family activities	1	2	3	4	5	6	7
23.	Due to work, I have to make changes to my plans for family activities	1	2	3	4	5	6	7

Section C: Organisational Support and Work Control

Instructions: Please circle the number, on each item, that best indicates how you feel about various aspects of your organisation, ranging from Strongly Disagree (1) to Strongly Agree (7).

		Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
1.	My organisation strongly considers my goals and values	1	2	3	4	5	6	7
2.	Help is available from my organisation when I have a problem	1	2	3	4	5	6	7
3.	My organisation really cares about my well-being	1	2	3	4	5	6	7
4.	My organisation is willing to extend itself in order to help me perform my job to the best of my ability	1	2	3	4	5	6	7
5.	Even if I did the best job possible, the organisation would fail to notice	1	2	3	4	5	6	7
6.	My organisation cares about my general satisfaction at work	1	2	3	4	5	6	7
7.	My organisation shows very little concern for me	1	2	3	4	5	6	7
8.	My organisation cares about my opinions	1	2	3	4	5	6	7
9.	The organisation takes pride in my accomplishments at work	1	2	3	4	5	6	7
10.	I have a lot of say over what happens on my job	1	2	3	4	5	6	7
11.	I have enough authority to do my best when carrying out my job	1	2	3	4	5	6	7
12.	My job allows me to make a lot of decisions on my own	1	2	3	4	5	6	7
13.	I have enough freedom as to how I should do my job	1	2	3	4	5	6	7
14.	I have a lot of say over what happens on my job	1	2	3	4	5	6	7

Section C Continued: Organisational Support and Work Control

		Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
15.	The amount of work I am expected to do is too great	1	2	3	4	5
16.	I never seem to have enough time to get everything done at work	1	2	3	4	5
17.	It often seems like I have too much work for one person to do	1	2	3	4	5

Section D: Employee Well-being

	In the last month, how often did you have any of the following experiences during the last month?	Never	Rarely	Sometimes	Often	Always
1.	Being tired.	1	2	3	4	5
2.	Being physically exhausted.	1	2	3	4	5
3.	Being 'wiped out'.	1	2	3	4	5
4	Feeling rundown.	1	2	3	4	5
5.	Being weary.	1	2	3	4	5
6.	Feeling weak.	1	2	3	4	5
7.	Feeling energetic	1	2	3	4	5

	In the last month, how often did you experience the following?	Never	Sometimes	Most of the time	Always
8.	I feel sad	1	2	3	4
9.	I feel unhappy	1	2	3	4
10.	I feel good	1	2	3	4
11.	I feel depressed	1	2	3	4
12.	I feel blue	1	2	3	4
13.	I feel cheerful	1	2	3	4

Section E: Demographics

Sex: Male Female

Age: 19 to 34 years 35 to 50 years 51 to 65 years

Marital Status: Single Married/Co-habiting Divorced

Occupation:_____

Employment Status: Full-time Part-time

Length of time employed in the organisation: _____ years _____ months

Education level _____

Thank You for Participating

APPENDIX D: EMPLOYEE QUESTIONNAIRE AT TIME 2

Dear Respondent,

I am a postgraduate research student at the University of Nottingham pursuing a Ph.D in Applied Psychology. You had participated in this survey last year and provided valuable data for my analysis. As stated on that earlier questionnaire, I am currently conducting the second and final round of data-collection with you and your co-worker you had selected in an effort to complete my Ph.D research. To remind you of this research and its purpose: The overall purpose of this project is to investigate job behaviours that employees engage in which go beyond their normal contractual obligations – these behaviours are referred to as organisational citizenship behaviours. In particular, I will be examining whether these behaviours have an impact on employees' job attitudes and overall well-being at work. In order to conduct this research, I am planning to survey employees in this organisation on two occasions to measure how these behaviours at a particular time period may affect their attitudes and well-being in a later period (this type of research is referred to as a longitudinal research). The first round of data-collection was conducted last year, and the second round of data-collection has now started this year to make vital comparisons with the past period. Hence, we are requesting your consent to complete the questionnaire in this period. Your participation in this survey is really, truly important and I hope you can participate this final round. Last year, you were given a shorter questionnaire to give to a co-worker of your choice to assess your work behaviours in the organisation. You will be given another shorter questionnaire form now to give to that co-worker (or someone else if that co-worker is not available) to do the same.

In completing the questionnaire, please be honest and frank; there are no right or wrong answers. Identifiable personal details have deliberately been omitted to ensure anonymity of responses (if applicable). No one from the employing organisation will see any of the completed questionnaires. This questionnaire asks about your own experiences. Completion and return of the survey are entirely voluntary. I hope that you will find the questionnaire interesting and will assist me by returning it as soon as possible. Thank you for your time and assistance. If you require more information about the study, please contact me at the following details below:

Dwayne Devonish
Email addresses:
devonishman13@hotmail.com/dwayne.devonish@cavehill.uwi.edu
Mobile/Telephone nos.: 424-7744 / 830-9349

Section A: Organisational Citizenship Behaviours

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	Indicate the extent to which <u>YOU</u>, as an employee of your organisation, engage in the following:	**Strongly Disagree**	**Disagree**	**Neither Agree or Disagree**	**Agree**	**Strongly Agree**
1.	Help others who have been absent from work	1	2	3	4	5
2.	Help others who have heavy workloads	1	2	3	4	5
3.	Assist supervisor/co-worker with his or her work (when not asked)	1	2	3	4	5
4.	Take time to listen to co-workers' problems and worries	1	2	3	4	5
5.	Go out of the way to help new employees	1	2	3	4	5
6.	Take a personal interest in other employees	1	2	3	4	5
7.	Pass along information to co-workers	1	2	3	4	5
8.	Have attendance at work which is above the norm	1	2	3	4	5
9.	Give advance notice when unable to come to work	1	2	3	4	5
10.	Take undeserved work breaks	1	2	3	4	5
11.	Spend a great deal of time with personal phone conversations at work	1	2	3	4	5
12.	Complain about insignificant things at work	1	2	3	4	5
13.	Conserve and protect organisational property	1	2	3	4	5
14.	Adhere to informal rules created to maintain order in the organisation	1	2	3	4	5

Section B: Work Attitudes and Characteristics

Instructions: Please circle the number, on each item, that best indicates how you feel about various aspects of your work in your organisation, ranging from Strongly Disagree (1) to Strongly Agree (7).

		Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
1.	I am quite proud to be able to tell people who it is that I work for	1	2	3	4	5	6	7
2.	I sometimes feel like leaving this employment for good	1	2	3	4	5	6	7
3.	I am not willing to put myself out just to help the organisation	1	2	3	4	5	6	7
4.	Even if the firm were not doing too well financially, I would be reluctant to change to another employer	1	2	3	4	5	6	7
5.	I feel myself to be part of the organisation	1	2	3	4	5	6	7
6.	In my work I like to feel I am making some effort, not just for myself, but for the organisation as well	1	2	3	4	5	6	7
7.	The offer of a bit more money with another employer would not seriously make me think of changing my job	1	2	3	4	5	6	7
8.	I would not recommend a close friend to join our staff	1	2	3	4	5	6	7
9.	To know that my own work had made a contribution to the good of the organisation would please me	1	2	3	4	5	6	7
10.	All in all, I am satisfied with my job	1	2	3	4	5	6	7
11.	In general, I don't like my job	1	2	3	4	5	6	7
12.	In general, I like working here	1	2	3	4	5	6	7
13.	At work, I know exactly what is expected of me	1	2	3	4	5	6	7
14.	I know that I have divided my work time properly	1	2	3	4	5	6	7
15.	Explanation is clear of what has to be done at work	1	2	3	4	5	6	7
16.	I feel certain about how much authority I have at work	1	2	3	4	5	6	7
17.	I know what my work responsibilities are	1	2	3	4	5	6	7
18.	Clear, planned goals and objectives exist for my job	1	2	3	4	5	6	7
19.	The demands of work interfere with family life	1	2	3	4	5	6	7

Section B Continued: Work Attitudes and Characteristics

		Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
20.	The amount of time my job takes up makes it difficult to fulfill family responsibilities	1	2	3	4	5	6	7
21.	Things I want to do at home do not get done because of the demands my job puts on me	1	2	3	4	5	6	7
22.	My job produces strain that makes it difficult to make changes to my plans for family activities	1	2	3	4	5	6	7
23.	Due to work, I have to make changes to my plans for family activities	1	2	3	4	5	6	7

Section C: Organisational Support and Work Control

Instructions: Please circle the number, on each item, that best indicates how you feel about various aspects of your organisation, ranging from Strongly Disagree (1) to Strongly Agree (7).

		Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
1.	My organisation strongly considers my goals and values	1	2	3	4	5	6	7
2.	Help is available from my organisation when I have a problem	1	2	3	4	5	6	7
3.	My organisation really cares about my well-being	1	2	3	4	5	6	7
4.	My organisation is willing to extend itself in order to help me perform my job to the best of my ability	1	2	3	4	5	6	7
5.	Even if I did the best job possible, the organisation would fail to notice	1	2	3	4	5	6	7
6.	My organisation cares about my general satisfaction at work	1	2	3	4	5	6	7
7.	My organisation shows very little concern for me	1	2	3	4	5	6	7
8.	My organisation cares about my opinions	1	2	3	4	5	6	7
9.	The organisation takes pride in my accomplishments at work	1	2	3	4	5	6	7
10.	I have a lot of say over what happens on my job	1	2	3	4	5	6	7
11.	I have enough authority to do my best when carrying out my job	1	2	3	4	5	6	7
12.	My job allows me to make a lot of decisions on my own	1	2	3	4	5	6	7
13.	I have enough freedom as to how I should do my job	1	2	3	4	5	6	7
14.	I have a lot of say over what happens on my job	1	2	3	4	5	6	7

Section D: Employee Well-being

		Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
15.	The amount of work I am expected to do is too great	1	2	3	4	5
16.	I never seem to have enough time to get everything done at work	1	2	3	4	5
17.	It often seems like I have too much work for one person to do	1	2	3	4	5

	In the last month, how often did you have any of the following experiences?	Never	Rarely	Sometimes	Often	Always
1.	Being tired.	1	2	3	4	5
2.	Being physically exhausted.	1	2	3	4	5
3.	Being 'wiped out'.	1	2	3	4	5
4	Feeling rundown.	1	2	3	4	5
5.	Being weary.	1	2	3	4	5
6.	Feeling weak.	1	2	3	4	5
7.	Feeling energetic	1	2	3	4	5

	In the last month, how often did you experience the following?	Never	Sometimes	Most of the time	Always
8.	I feel sad	1	2	3	4
9.	I feel unhappy	1	2	3	4
10.	I feel good	1	2	3	4
11.	I feel depressed	1	2	3	4
12.	I feel blue	1	2	3	4
13.	I feel cheerful	1	2	3	4

Section E: Demographics

Sex: Male Female

Age: 19 to 34 years 35 to 50 years 51 to 65 years

Marital Status: Single Married/Co-habiting Divorced

Occupation:

_____

Employment Status: Full-time Part-time

Length of time employed in the organisation: _____ years _____ months

Education level _____

Thank You for Participating

APPENDIX E: PEER REPORT OF OCBs

PEER REPORT QUESTIONNAIRE

Dear Respondent,

I am a postgraduate research student at the University of Nottingham pursuing a Ph.D in Applied Psychology. I am currently conducting a survey of employees across various organisations and sectors in Barbados in an effort to complete my Ph.D research. The overall purpose of this project is to investigate job behaviours that employees engage in which go beyond their normal contractual obligations – these behaviours are referred to as organisational citizenship behaviours. In particular, I will examining whether these behaviours have an impact on employees' job attitudes and overall well-being at work.

In order to conduct this research, I am planning to survey employees in this organisation on two occasions to measure how these behaviours at a particular time period may affect their attitudes and well-being in a later period (this type of research is referred to as a longitudinal research). In particular, I am requesting that you provide an assessment of your work colleague(s) behaviour at work. Your work colleague has been asked to give you this questionnaire so you can do the assessment on him/her. You may be given other questionnaires to complete by other work colleagues, as your colleagues make the choice. The first round of data-collection will coincide with this month, and the second round of data-collection will start exactly one year from this period. In completing the questionnaire, please be honest and frank; there are no right or wrong answers. Identifiable personal details have deliberately been omitted to ensure anonymity of responses (if applicable). No one from the employing organisation will see any of the completed questionnaires. This questionnaire asks about your own experiences. Completion and return of the survey are entirely voluntary. I hope that you will find the questionnaire interesting and will assist me by returning it as soon as possible.

Thank you for your time and assistance. If you require more information about the study, please contact me at the following details below:

Dwayne Devonish

Email addresses: devonishman13@hotmail.com
dwayne.devonish@cavehill.uwi.edu
Mobile/Telephone nos.: 424-7744 / 830-9349

Sincerely,
Dwayne Devonish

Instructions to co-worker providing the peer-assessment:
Your colleague/co-worker has given you this very brief questionnaire to obtain an assessment of their performance of various behaviours at work from your perspective. Please provide accurate responses by circling the response that best describes your colleague's performance. When you are finished, place the completed questionnaire in the envelope provided and sealed.

	Indicate the extent to which <u>YOUR WORK COLLEAGUE</u> engages in the following:	**Strongly Disagree**	**Disagree**	**Neither Agree or Disagree**	**Agree**	**Strongly Agree**
1.	Helps others who have been absent from work	1	2	3	4	5
2.	Helps others who have heavy workloads	1	2	3	4	5
3.	Assists supervisor/co-worker with his or her work (when not asked)	1	2	3	4	5
4.	Takes time to listen to co-workers' problems and worries	1	2	3	4	5
5.	Goes out of the way to help new employees	1	2	3	4	5
6.	Takes a personal interest in other employees	1	2	3	4	5
7.	Passes along information to co-workers	1	2	3	4	5
8.	Has attendance at work which is above the norm	1	2	3	4	5
9.	Gives advance notice when unable to come to work	1	2	3	4	5
10.	Takes undeserved work breaks	1	2	3	4	5
11.	Spends a great deal of time with personal phone conversations at work	1	2	3	4	5
12.	Complain about insignificant things at work	1	2	3	4	5
13.	Conserve and protect organisational property	1	2	3	4	5
14.	Adhere to informal rules created to maintain order in the organisation	1	2	3	4	5

<u>END OF QUESTIONNAIRE</u>

APPENDIX F: LETTER TO ORGANISATIONS FOR ACCESS TO EMPLOYEES

Date: 27th September 2010

To whom it may concern,

I am writing to request your permission to conduct a longitudinal research study on the effects of employee job behaviours on health, attitudes and role stress in your organisation. The research is part of a larger study underlying my Phd thesis in Applied Psychology which is being completed at the University of Nottingham.

I am requesting access to your employee/staff list to allow for random selection of employees, and I would also like access to those selected employees to administer two questionnaires. One questionnaire will be given to a selected questionnaire, and the other questionnaire will be administered to a co-worker to rate the same employee on a number of job behaviours observed at work. I guarantee that all information obtained will be kept confidentially, and your company name or other identifiers (e.g. employee names and departmental titles) will remain anonymous. Given the longitudinal nature of the research, I will be conducting the same procedures on year from now (in September 2011) to allow for inter-wave comparisons and analyses.

If you need to set up a meeting to further discuss this research, please let me know at the contact details listed below this letter. I am hoping that you provide me this opportunity to conduct this research in your organisation. I assure that I will keep any disruption at your workplace to the minimum.

Thank you in advance,

Dwayne Devonish

Dwayne Devonish
Email addresses:
devonishman13@hotmail.com
dwayne.devonish@cavehill.uwi.edu
Mobile/Telephone nos.: 424-7744 / 830-9349

APPENDIX G: INFORMATION AND MAPS OF BARBADOS

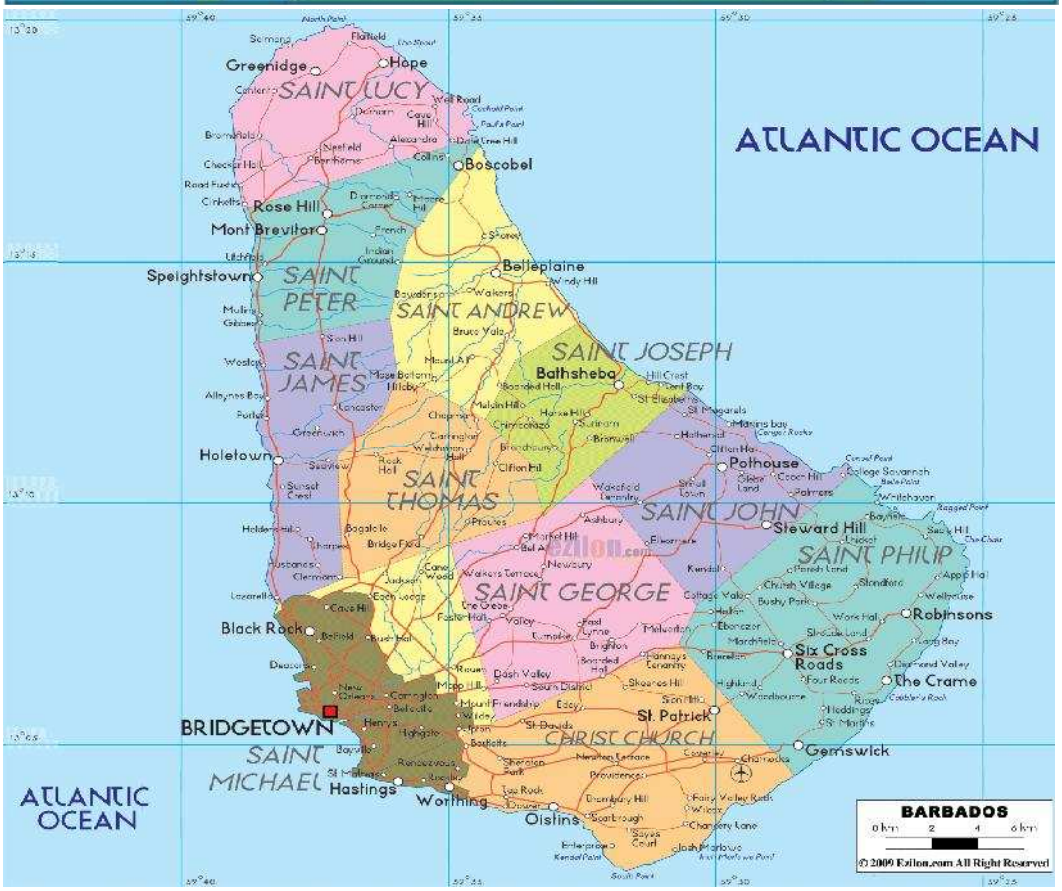
Brief History, Geography and Development Profile of Barbados

Barbados was inhabited by Amerindians prior to the settlement of Europeans. Its original name was Los Barbudos as early as 1511. The British inhabited the island in 1625. The major economic drivers at the time were cotton and tobacco and these agricultural categories were replaced by sugar in the 1640s. The sugar production was run via the use of African slaves brought over from Africa in the slave trade movement. Barbados was a former British colony in the West Indies but attained national independence on November 30th 1966.

Barbados can be found in most easterly point on the Caribbean island chain. The island 430 sq km in size, measuring 34 km long by 23 km wide with a coastline of 97 km. Barbados is relatively flat and made up largely of coral and limestone. The island enjoys a tropical climate and has two seasons: dry season for the first half of the year and wet season for the latter part of the year.

Barbados is made of 11 parishes with the major capital city known as Bridgetown within the Parish of St. Michael. This capital city is densely populated and over 110,000 citizens reside in this area. The island is within the Atlantic Time Zone at GMT-4 and does not make adjustments for daylight savings.

Barbados is ranked very high on the Human Development Index, achieving a third place position in the Americas after only United States of America and Canada on the UN Human Development Index. There is a nationwide policy on free education for the full population up to tertiary education, resulting in a well-educated and highly skilled workforce. Ninety-five percent of all citizens are classified as Christians. The spoken language in the country is British English, with a local dialect known as Bajan.



Source: www.worldatlas.com