# The effectiveness of workplace coaching:

## A meta-analysis of learning and performance outcomes; scale development; theoretical model of individual differences and longitudinal study

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Doctor of Philosophy

ASTON UNIVERSITY

June 2015

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**THESIS SUMMARY**

The extant literature on workplace coaching is characterised by a lack of theoretical and empirical understanding regarding the effectiveness of coaching as a learning and development tool; the types of outcomes one can expect from coaching; the tools that can be used to measure coaching outcomes; the underlying processes that explain why and how coaching works and the factors that may impact on coaching effectiveness. This thesis sought to address these substantial gaps in the literature with three linked studies. Firstly, a meta-analysis of workplace coaching effectiveness ($k = 17$), synthesizing the existing research was presented. A framework of coaching outcomes was developed and utilised to code the studies. Analysis indicated that coaching had positive effects on all outcomes. Next, the framework of outcomes was utilised as the deductive start-point to the development of the scale measuring perceived coaching effectiveness. Utilising a multi-stage approach ($n = 201$), the analysis indicated that perceived coaching effectiveness may be organised into a six factor structure: career clarity; team performance; work well-being; performance; planning and organizing and personal effectiveness and adaptability. The final study was a longitudinal field experiment to test a theoretical model of individual differences and coaching effectiveness developed in this thesis. An organizational sample of 84 employees each participated in a coaching intervention, completed self-report surveys, and had their job performance rated by peers, direct reports and supervisors (a total of 352 employees provided data on participant performance). The results demonstrate that compared to a control group, the coaching intervention generated a number of positive outcomes. The analysis indicated that coachees' enthusiasm, intellect and orderliness influenced the impact of coaching on outcomes. Mediation analysis suggested that mastery goal orientation, performance goal orientation and approach motivation in the form of behavioural activation system (BAS) drive, were significant mediators between personality and outcomes. Overall, the findings of this thesis make an original contribution to the understanding of the types of outcomes that can be expected from coaching, and the magnitude of impact coaching has on outcomes. The thesis also provides a tool for reliably measuring coaching effectiveness and a theoretical model to understand the influence of coachee individual differences on coaching outcomes.

**Key words**: coaching; coaching effectiveness; coaching outcomes; learning & performance

# ACKNOWLEDGEMENTS

As anyone who has completed a PhD will understand, it is a challenging yet rewarding journey that simply would not be possible without the support from others.

Thank you to Aston University for awarding me a studentship, which enabled me to pursue this career path.

Thank you to the research organization, all of the coachees and other participants, who gave up their valuable time to participate in my research. Also the contacts within the organization (you know who you are!) that supported me and facilitated my research. Without these valuable contributions, there would be no PhD.

Thank you to my colleagues who have supported me, given advice, listened to my ideas and generally chivvied me along when the going got tough. In particular to Dr Yves Guillaume for providing invaluable statistical guidance; to Dr Holly Andrews for sharing my teaching and for sharing her valuable PhD experiences to help me to keep the faith, and to the management team at the University of Worcester who have supported me during the final stages of this journey – in particular Dr Lynn Nichol and Professor Jan Francis-Smythe.

Thank you to my second family; my in-laws Margaret and Barry. You have spent much more than the politely expected amount of time listening to me talk about my research in order to understand what it is all about. You have showed your pride and support in my work and that makes me proud in return.

Thank you my boys – Clark and Oscar. Despite never really understanding what a PhD is, you have had to sacrifice time with your mummy over the last four years – Oscar you have never known life before the PhD. I hope that it has been a worthwhile sacrifice for you both, and that I have become a role model to demonstrate that if you work hard and persist, almost anything is possible. If I have achieved this, I will be happy.

Finally, while I have many people to thank, there are two people to whom I can confidently attribute the successful completion of this thesis.

Firstly, my PhD supervisor, Professor Steve Woods. Steve, you took a chance in taking me on as your student. You helped me to develop and improve my PhD application so that I could successfully secure the studentship – without which I could not have pursued this path. You

have given me invaluable advice, guidance and support. You have challenged me to learn and achieve in a way I thought I was not capable of. You are a role model for me, someone I can aspire to be like for my future career. Thank you for all of your support during this process (and hopefully beyond). This support has helped change mine and my family's life for the better.

Secondly, my amazing husband Adam. You supported me from the start when I announced I wanted to leave my job and pursue a PhD to change my career. Despite being heavily pregnant, you never once questioned that this wasn't the 'right thing' for me to do (probably sensible). You have supported our family through financial difficulties while I pursued my dream and placed your ambitions on the back burner – for that I am eternally grateful. You never complained when I announced that, once again I would need to work this evening or the weekend, and you dutifully took over the household and childcare responsibilities to allow me to concentrate on my research. Most importantly of all, you are the first person in my life who has truly believed in me. You have never doubted that I would succeed, and to have that support from someone so special makes me a very lucky person. I would never have had the confidence to achieve this without you.

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# CHAPTER ONE

## Introduction

"voluminous, non-empirical, non-theoretical, poorly written, and dull"
"faddish to the extreme"
*John P. Campbell, Annual Review of Psychology of Personnel Training and Development*

### Background

Campbell's (1971) views on the limitations of training and development research described in the quotation above summarise many of the issues in the field at the time. Fast forward 40 years and Salas and colleagues (Salas, Tannenbaum, Kraiger & Smith-Jentsch, 2012) conclude their review of the training and development research, with the remarks that the field has come a long way since Campbell made these comments. Salas et al. describe current training research to be "empirical in nature and theoretically based" (p. 95). Research in training has successfully made the transition from being viewed as faddish, non-empirical and non-theoretical to a credible, scientific discipline. This transition from 'fad' to 'science' is highly significant to this thesis. Workplace coaching is a more recent addition to the training, learning and development toolbox and the quotation above could have easily been describing the current nascent body of coaching literature. It is for this primary reason that workplace coaching has been selected as the subject for this doctoral research.

The field of workplace coaching research and practice, much like a conflicted coachee, has a series of urgent issues to be addressed. This parallel might be further elaborated by using Whitmore's popular coaching approach: the GROW (Goal; Reality; Options; Will/Way forward, 1992) model to serve the dual purpose of examining the current state of play in coaching and outlining the main research aims of this thesis. By imagining the field of coaching as the coachee, the goals of the field of coaching and research, the reality of the current coaching research and theory, the options available to coaching to achieve its goal and the way forward from this moment can be explored.

The 'Goal' of coaching, as a field of research and an industry of practitioners, is to gain credibility; to develop and test theory to understand the underlying processes of coaching and to gather evidence to confirm that coaching is able to deliver what it promises too. Like many coachees, along the way to achieving its 'Goal' of gaining credibility and building a scientific base, coaching may wander off course. Coaching may lose its focus on its goal and its

motivation to persist. Coaching may waiver and resort to less rigorous, more easily attainable research data such as cross sectional questionnaires. Because of these reasons it is essential to establish the motivation for coaching to achieve its goals. Why should we, as coaching researchers, bother to strive to achieve this goal? The motivation comes from understanding the importance of ensuring that coaching has some evidence to call upon when its utility is brought into question. It comes from a yearning to grow our knowledge and understanding of how coaching works and how it can benefit the coachee, therefore ensuring that these outcomes are always achieved. The motivation comes from the desire to demonstrate that coaching can be informed by a solid evidence-base and deserves the recognition as a credible, people development tool.

The 'Reality' however is that coaching is all too often seen as an intervention that, even after well over 20 years of practice is still considered by many as a 'fad'. It is unregulated and uncontrolled and, as such, it is at the mercy of potential exploitation. Coaching is characterised by a body of research that is practitioner-led. The disadvantage of this, is that the research tends to lack the methodological rigour needed to move coaching from niche, non-star rated journals and trade publications into the world-leading academic journals of mainstream management and organisational behaviour. The limitations of many of the research designs in these practitioner-led studies mean that a lack of scientific control makes it challenging to identify significant results. Coaching research is one that is almost unrivalled in its ability to draw on a vast range of outcome measures, stalling the accumulation of knowledge. While each of these pieces of research have value in their own right, the disparate nature of outcomes being measured mean that it becomes very difficult to understand the cumulative impact of these results. Because we cannot conclusively understand the types of outcomes coaching can produce, we cannot begin to adequately examine whether mediators or moderators are operating that impact on the effect of the coaching intervention. Consequently, there is still a lack of understanding on whether coaching works for everyone, no-one, few or many. In addition, a frequently cited argument in the coaching research field is that a flexible 'soft-skills' intervention such as coaching is far too difficult to measure empirically and quantitatively. Couple this with the difficulty in gaining the required control in the field and the wide range of factors that are likely to contribute to coaching outcomes, mean that many of the researchers in this field have avoided the task of proposing a theory of explanation.

It is clear that the 'Goal' of the field of coaching is a distant point on the horizon from where the 'Reality' of coaching currently stands. However, as any good coach knows, no barrier is immoveable, no goal too distant. What 'Options' are available to coaching to help the field achieve its 'Goal' and overcome its 'Reality'? Due to the embryonic stage of development that the coaching theory and research is currently positioned, the options available are wide and varied. However, for the purpose of this thesis, the main contributions of this doctoral research are presented as some of the options available for the field of coaching to achieve its goals.

**Research Aims**

The first research aim of this thesis is to conduct a robust, systematic review of the literature in order to establish the effectiveness of coaching at work, which significantly advances past contributions in this area. By using meta-analytic techniques, effect sizes on workplace outcomes can be synthesized and provide substantially greater statistical power than considering the individual studies alone. This contribution will build a clearer picture regarding what the current research into coaching effectiveness is telling us.

Next, a conceptually derived, reliable scale for measuring outcomes of coaching will be developed. The scale will provide a statistically reliable and valid method of evaluating coaching in response to the current lack of rigour in assessing outcomes. Finally, the thesis will present an examination of the effects of individual differences on coaching outcomes, previously neglected in the literature. This may start to answer the question: 'For whom is coaching most suited?'

These contributions will enable organisations to have a clearer understanding of the value of coaching. They will provide researchers and practitioners with a robust means of evaluating coaching and they will help coaches, coachees and organisations to begin to understand when coaching is more or less effective to enable them to tailor learning and development solutions.

Returning to the parallel with the GROW model: what is the 'Way Forward' from this point? This thesis will address the goal of coaching theory and research by presenting a series of three interlinking studies that each contributes to the expansion of knowledge and understanding in relation to coaching effectiveness.

**Thesis Overview**

The thesis is divided into six remaining chapters detailing the context, methodology, findings and analysis of these three studies. An overview of the content of these chapters is provided below.

Chapter two positions coaching as one technique within the training, learning and development toolbox. An exploration of the reasons in the growth of the use of workplace coaching is explored followed by a detailed discussion of how coaching should be defined. A comprehensive review of the extant literature on coaching effectiveness is provided. This review identifies that the coaching literature suffers from a number of limitations including the lack of a conceptually driven framework of outcomes. In response to this limitation, a framework of coaching outcomes is proposed that is derived from the training, learning and development literature that will be explored in greater detail in subsequent chapters. Overall this chapter sets the scene for the remainder of the thesis by outlining the broader field within which this research is embedded and highlighting a number of limitations in the current research which this thesis aims to address.

Chapter three opens with an overview of the existing theory on coaching effectiveness. Based on the limitations of these existing theories, an alternative theoretical model is presented that proposes that factors influencing coaching outcomes can be separated into treatment and learner effects. Treatment effects that are likely to influence coaching outcomes consist of the underlying processes of coaching and the practice factors of coaching. Regarding the processes of coaching, goal setting theory, experiential learning and psychological fidelity are suggested to be of primary importance and the relevant literature is outlined. With respect to practice factors of coaching, the use of multi-source feedback, the format of the coaching and the type of coach (i.e. internal or external to the organization) are discussed. This is followed by a detailed exploration of learner effects on coaching outcomes. In particular the importance of the five factor model of personality is highlighted. The final section of chapter three is the presentation of the theory of individual differences and coaching effectiveness: the theoretical model to be tested in the intervention study included in this thesis.

Chapter four presents the first empirical study in this thesis; a meta-analysis of the effectiveness of workplace coaching. This study fulfils a primary research aim of this thesis by addressing the question 'Does Coaching Work?' In the process of answering this question, the framework of

coaching outcomes proposed in chapter two is examined meta-analytically, with the results suggesting the coaching has a positive effect on affective, skill-based and individual-results outcomes. Furthermore, the exploration of coaching practice variables highlights the presence of some significant moderation. The findings of this study confirm that coaching does have a positive impact on workplace outcomes. The meta-analysis also confirms that the framework of coaching outcomes is valid. This framework guides the outcomes measured in subsequent empirical studies in this thesis. The meta-analysis also provides important information of practice moderators which are considered in the intervention study conducted as part of this doctoral research.

Chapter five presents the second empirical study which conducts a pilot study to begin the process of developing and testing a scale to measure perceived coaching effectiveness from the coachees' perspective. A deductive approach was utilised and the framework of coaching outcomes presented in chapter two provided the starting point in the exploration of the types of outcomes that coachees' perceive to occur as a result of coaching.  A multi-stage scale development procedure was followed, as outlined by Hinkin (1998) and DeVellis (2012). In-depth interviews resulted in 110 potential items being generated. After questionnaire administration ($n$ = 201) and factor analysis, two alternative models were proposed: a nine factor and a six factor model. Confirmatory factor analysis was used to compare the models and the six factor model was deemed to provide the best statistical fit to the data. The six factor model had 21 items and the factors were named career clarity; team performance; work well-being; performance; planning and organizing and personal effectiveness and adaptability. This scale addressed a key research aim of this thesis by presenting a pilot study that has begun the process of developing a conceptually driven, statistically reliable and valid method of evaluating coaching.

Chapter six presents the final intervention study of this thesis in which the impact of coaching was evaluated and the conceptual model presented in chapter three was tested with an organizational sample. 53 participants were provided with four coaching sessions and compared to a control group of 31 participants who received no coaching. Data was collected before coaching commenced, directly after coaching had been completed and after a three month time lag. A further 352 employees provided data on the participant's performance at the same three time points. Analysis suggested that the coaching intervention had a significant impact on self and others-ratings of performance, however only self-ratings of performance remained

significant when compared to the control group. No other outcome variables measured were significantly affected by the coaching intervention. Significant interaction was found for enthusiasm, intellect, and orderliness providing support for the predication that coaching has a greater impact on outcomes for some individuals based on their personality traits. Exploration of the theoretical model showed that a number of mediating relationships were present as predicted. These findings were discussed along with the study limitations and recommendations for future research. The study presented in this chapter addresses two of the research aims for this thesis. Firstly, by conducting a longitudinal field experiment, the effectiveness of coaching in an organizational context is explored. Secondly, by testing the conceptual model presented in chapter three, this study provides an examination of the effects of individual differences on coaching outcomes, addressing the question 'For whom is coaching most suited?'

Finally, chapter seven provides a general discussion of the findings and conclusions of this research. A brief summary of the main aims of this thesis along with the major findings from across the studies is presented first. Next, the theoretical implications that can be drawn from this research are explored, including a discussion of the theoretical implications of the findings in the test of the model of individual differences and coaching effectiveness. Following this, the practical implications of this thesis are explored and some suggestions are made in relation to directions for future research. Finally, the limitations of the studies are summarised. The chapter closed with an overall conclusion for the thesis.

# CHAPTER TWO

## What is workplace coaching, is it effective and how can we measure its effectiveness?

*"The fact that an opinion has been widely held is no evidence whatever that it is not utterly absurd; indeed in view of the silliness of the majority of mankind, a widely spread belief is more likely to be foolish than sensible."*
*Bertrand Russell, Marriage and Morals*

### Chapter Summary

This chapter explores the prevalence of workplace coaching in today's organisations. It begins by outlining some of the potential reasons for the growth in the use of workplace coaching. A review of definitions of coaching is then presented in order to clearly outline how coaching is conceptualised within this thesis. Next, the body of evidence from the literature on coaching effectiveness is reviewed. Following this, the issue of what outcomes can be expected from coaching is addressed. In response to the lack of any clear guidance in this area, a framework of coaching outcomes with proposed evaluation criteria is presented. Overall, this chapter sets the scene for the remainder of this thesis by outlining the broader field in which this research is embedded.

### The Growth of Workplace Coaching

Over the last 30 years, coaching has risen to an industry of over 47,500 coaches worldwide with an annual spend of over $2 billion (ICF, 2012). The CIPD stated that just over eight out of ten respondents in their 2010 Learning and Development survey reported that they use coaching in their organisations (CIPD, 2010). What potential explanation is there for this sharp increase in workplace coaching?

Scholars largely agree that the current business environment is dynamic, volatile, uncertain, complex and ambiguous (Bennett & Lemoine 2014, Johansen 2007). Businesses compete on a global scale and competitive advantage now relies much less on the uniqueness of the product or service. Instead, the role of employee talent has become increasingly important (Boudreau & Ramstad, 2005; Delaney & Huselid, 1996; Park & Jacobs, 2011). Factors of organizational competitiveness are consequently linked to the knowledge, skills and abilities of the organizations' human resources (Kamoche 1996; Mueller 1996). Furthermore, if the business environment is dynamic and volatile, in order to retain any competitive advantage, the employee talent must also adapt in-line with the environmental demands. The role of training, learning and development is to equip employees with the requisite knowledge, skills and abilities to meet

dynamic and adapting organizational objectives. A series of meta-analyses have established that training works (Arthur, Bennett, Edens, & Bell, 2003; Burke & Day, 1986; Collins & Holton, 2004; Salas et al., 2008; Salas, Nichols, & Driskell, 2007; Sitzmann, Kraiger, Stewart, & Wisher, 2006) with studies linking effective training practices to organizational performance (Aguinis & Kraiger, 2009; Delaney & Huselid, 1996; Huselid, 1995). Consequently, organizations have the tools necessary to provide effective training to develop employee talent. However, couple the provision of instructional training with today's web-enabled working environment, the challenge for employees is no longer how to access the information they need to improve and perform their job more effectively, instead the challenge is how to make sense of the wealth of information that is readily available at their fingertips (Kraiger, 2014).

These factors offer a potential explanation for the rise in popularity of workplace coaching. Swart and Harcup (2013) propose that coaching helps managers to expand their insight and develop their sense-making abilities. If the biggest challenge to employees in today's organization is not how to access information but instead how to filter this information into what is relevant, then coaching may provide a solution to this challenge. Kraiger (2014) proposes that the prevailing trend in learning and development, places the learner central to the instructional process. In addition to this, learners are responsible for making sense and constructing their own knowledge, often from disjointed information. Coaching fulfils many of these criteria. Coaching is a learning and development approach that places the learner at the centre of the learning experience. Coaching provides the employee with the time; mental space; support and guidance the employee may need to make sense of the information available to them and explore how to apply it most effectively in their unique situation. Evidence suggests that most people believe that coaching is beneficial for them and good for their business (Law, Ireland & Hussain, 2007). Thach and Heinselman (1999) outline a number of benefits of coaching. These include positive behaviour change, enhanced skills and knowledge, decrease in stress, a high return on investment and increased employee satisfaction due to the awareness of the investment the employer is placing in the executive. Thach and Heinselman (1999) elaborate further by stating that coaching is also viewed favourably by the learners as it provides them with one to one support from a respected individual, it can be done on-site so is convenient, fits in with the leaners timeframe and schedule and often results can be seen relatively quickly. One-to-one coaching provides a tailored approach to help understand and apply work-based learning, ensuring that the employee has the capabilities to move with and adapt to a dynamic working environment. Therefore, in this challenging, volatile business environment, coaching

provides an adaptable learning and development solution to facilitate sense-making from other more instructional forms of training. This context helps to explain why the use of coaching has seen such a meteoric increase in recent years.

**What is Workplace Coaching?**

Despite the rapid growth of workplace coaching over the last 30 years, the question of what coaching is has not yet been clearly answered. Countless articles debate the construct of coaching, with little agreement on the exact definition (for example see Kilburg, 1996, 2001; Kombarakaran, Yang, Baker and Fernandes, 2008; Law, Ireland & Hussain, 2007; Peterson & Hicks, 1996; Stern, 2004; Thach & Heinselman, 1999; Zeus & Skiffington, 2005). The following section will articulate how workplace or executive coaching (hereafter referred to as 'coaching') is conceptualised for the purpose of this thesis. Although there are certainly many other ways in which coaching could be described, the following definition clarifies the type of coaching that is addressed in this thesis.

Coaching is a one-to-one learning and development intervention that uses a collaborative, reflective, goal-focused relationship to achieve professional outcomes that are valued by the coachee (Smither, 2011). Although coaching can be in a group or team format, it is one-to-one coaching that is the particular focus of this thesis. The role of the coach is not to give instruction to the coachee: coaches generally avoid providing instructional or prescriptive solutions to coachees, often because they are not technical experts in the coachee's occupational area of specialty (McAdam, 2005). Neither is the coach a passive participant whose only role is to listen or be a sounding board. Instead the coach and coachee should work collaboratively together on an equal standing to aid the coachee's learning and development. Reflection is an essential component of coaching as it allows the coachee to take a mirror to their work life and examine the successes and dissect the failures. Coaching is inherently goal-bound with goals generally forming the starting point of any coaching session, and the goal setting gives the coaching focus and purpose. The importance of reflection and goal setting in coaching will be returned to in chapter three, where these concepts will be explored in greater detail. Finally, the outcomes of coaching must be of value to the coachee. The emphasis on outcomes of value to the coachee encourages motivation and purpose to persist in a way that is unlikely to be present if outcomes have been dictated by others, such as the coachee's supervisor.

In addition to these defining characteristics of coaching, there is some emerging consensus about what constitute the core features or elements of coaching (e.g. see Bono, Purvanova, Towler and Peterson, 2009 and Smither, 2011). Drawing on this consensus, in this thesis, for a one-to-one developmental relationship to be classified as a coaching relationship, it must involve the formation and maintenance of a helping relationship between the coach and coachee. Coaching must involve a formally defined coaching agreement or contract which sets personal development objectives. The formality of the coaching objectives is an essential element as it enables progress to be tracked throughout the course of the coaching intervention. The fulfilment of this coaching agreement (i.e. achievement of the objectives) should occur through a personal development process that focuses on interpersonal and intrapersonal issues. For example, the coaching may focus on issues or challenges that exist within the individual (such as a lack of confidence or self-belief) or the coaching may focus on challenges the exist between individuals (such as dealing with a challenging member of staff) or perhaps a combination of the two (for example, confidence to behave assertively with challenging members of the team). The coaching achieves the successful personal growth of the coachee by providing the tools, skills and opportunities he or she needs to develop themselves and become more effective through the coaching discussions (Bono et al., 2009; Kilburg, 1996; McCauley & Hezlett, 2002; Peterson & Hicks, 1996; Smither, 2011; Witherspoon & White, 1996).

The coaching relationship is one that the coachee enters into for the specific purpose of fulfilling development objectives. It is important to differentiate coaching from other forms of developmental relationships in the workplace. Conceptually, it may first be distinguished from mentoring relationships (see Brockbank & MacGill, 2012 for a review). A mentoring relationship is conventionally long-term between a highly experienced mentor, and an inexperienced mentee. The mentor is assumed to be highly experienced in the discipline or field in which the mentee is working, and in the workplace, the mentor typically provides guidance on career development and networking (Eby et al., 2013). In a coaching relationship, there is no such expectation that the coach has expertise or experience of the coachee's area of work, and the term of the relationship is rather guided by specific objectives.

Similarly, there are relative status pre-requisites in 'peer coaching' (Parker, Hall & Kram, 2008; Parker, Kram & Hall, 2013), in which development is a two-way reciprocal process between people of equal status in an organization. Peer coaching aims to provide mutually supportive

personal and professional development of both people in the peer-coaching dyad. The developmental focus in coaching, by contrast, is solely the coachee, and the relationship is free from the influence or boundaries of organizational status structures.

The coaching relationship is also typically considered to be distinct from formalised organizational performance management relationships (e.g. supervisor-subordinate). Although line managers may engage in coaching behaviours as part of the management process, there is debate about whether such development intervention fits with the relational definition of coaching (Feldman & Lankau, 2005). For example, there exists a power relationship between line managers and their subordinates, which is absent in the helping relationship a coachee would have with an independent coach. Managers and supervisors might propose coaching as a developmental intervention for their staff (and in this sense, coaching might be considered a part of performance management processes), but to fit with the relational definition of coaching, the developmental relationship that facilitates learning and development would be with a coach, rather than the manager or supervisor. In this thesis, coaching is conceptualised as distinct from these other forms of developmental relationships.

In terms of practical utility, keeping coaching distinct from other organizational performance management and development relationships offers potential advantages. Sherman and Freas (2004) report that the relational nature of coaching provides an individual, customized feel to coaching, with coaches providing candour, and honest feedback to the coachee in relation to their performance and behaviour. This is frequently supplemented with feedback from the coachee's organization (e.g. through multi-source feedback). However, the privacy, non-judgmental perspective, and confidentiality of the coaching session provide a safe environment for the coachee to reflect on that feedback and work on improving areas of weakness. The coach may discuss suggested tools and techniques to help the coachee develop and improve, the content of which is dependent on the background and approach of the coach (McAdam, 2005).

**Is Workplace Coaching Effective?**
In the literature to-date, the case has been building, based primarily on anecdotal evidence and uncontrolled studies, that coaching is effective at improving work-based outcomes including goal accomplishment (Fischer & Beimers, 2009); professional growth (McGuffin & Obonyo, 2010); improved professional relationships (Kombarakaran, Yang, Baker & Fernandes, 2008);

greater managerial flexibility (Jones, Rafferty & Griffin, 2006); increased productivity (Olivero, Bane & Kopelman, 1997) and improved resilience and workplace well-being (Grant, Curtayne & Burton, 2009). Coaching is also aligned with recent emergent interest in active rather than passive learning, in which employees take responsibility for shaping their own learning processes (Bell & Kozlowski, 2008). Coaching is led by the coachee, giving them control over their learning and development, and the increasing popularity of coaching in organizations may therefore reflect a more general trend away from 'one size fits all' approaches to training (Salas & Kozlowski, 2010). Despite the apparent potential advantages of coaching, research has not kept pace with its growth in practice, and the lack of conclusive evidence regarding the effectiveness of coaching is one of the most frequently cited problems in the field (Grant, Passmore, Cavanagh & Parker, 2010). Shortcomings in the research evidence base for coaching include problems of empirical research design and criterion measurement in evaluation studies (Grant et al., 2010).

Recognizing the need for systematic evidence in this field, Theeboom, Beersma and Van Vianen, (2014) reported a meta-analysis of the effects of coaching on several outcome criteria. Using Hedges $g$, which corrects for potential bias due to overestimate of population effect size when small samples are included in the analysis (Hedges, 1981), they reported positive overall effects of coaching with aggregated outcomes ($g = 0.66$), and with specific kinds of criteria: performance and skills ($g = 0.60$); well-being ($g = 0.46$); coping ($g = 0.43$); work attitudes ($g = 0.54$); and goal-directed self-regulation ($g = 0.74$). Positive effects were moderated by research design (within-subjects research design studies $g = 1.15$, compared to mixed design studies $g = 0.39$). Moderator testing also showed no moderation by number of coaching sessions leading Theeboom et al. (2014) to conclude that the number of coaching sessions is not related to the effectiveness of the intervention.

Whilst the meta-analysis of Theeboom et al. (2014) represents an important advance in the evidence base for coaching generally, the implications for coaching in organizations specifically are less clear. This is because in their analyses, Theeboom et al. (2014) compute effect sizes which are derived from studies of coaching in a variety of contexts. For example, results from studies of workplace coaching are combined with studies of coaching conducted for different purposes (e.g. of the 18 studies included in the analyses, 6 report the results of general life coaching, and 1 reports results of health coaching). Moreover, Theeboom et al. (2014) mix studies using organizational samples with studies based on educational and general non-

organizational samples (e.g. 7 out of the 18 primary studies included were conducted in non-organizational samples such as student or general population convenience samples). As a consequence, the implications of the meta-analysis for organizations applying coaching as part of human resource management for the purpose of performance improvement at work, are confounded and therefore inconclusive.

The problem of applying the findings of Theeboom et al. (2014) to the literature on learning, training and development in organizations is further compounded by issues of criterion specification. Although five categories of criteria were analysed (performance/skills; well-being; coping; work attitudes; goal directed self-regulation), they appear to have been defined bottom-up (i.e. based on those criteria measured in the included studies) instead of top-down (i.e. by applying systematic criterion framework to classify outcomes). Uncertainty about the specific nature of the work outcomes from coaching that might be expected (e.g. Bennett, 2006; Brotman, Liberi & Wasylyshyn, 1998; Lowman, 2005) therefore remains unaddressed in the literature.

An exploration of some of the primary studies investigating coaching effectiveness shows an inconsistency in findings across studies. On some occasions, research seems to find that coaching has a positive impact, such as the research by McGuffin and Obonyo (2010) and Moen and Allgood (2009). In a survey of 32 employees who participated in a coaching programme, McGuffin and Obonyo (2010) found that coachees rated the coaching programme as enhancing their personal and professional growth and development, their motivation and loyalty to their employer. In Moen and Allgood's (2009) research, they surveyed 127 executives and middle managers on self-efficacy before and after coaching. They found that the scores on self-efficacy had a statistically significant increase over time for the coaching group but not the control group. Moen and Allgood (2009) argue that self-efficacy is a key determinant of an individual's actual performance at work. MacKie (2014) sought to evaluate his strengths-based coaching approach at improving transformational leadership skills. A quasi-experimental study was conducted ($n = 37$) where the coaching group received six 90-minute coaching sessions from an external coach that followed the authors strengths-based coaching methodology. MacKie found that multi-source ratings of transformational leadership skills improved significantly more for the coaching group at time two compared to the control group.

At other times, however, coaching appears to lack any notable significant effects such as in the research by Bozer and Sarros (2012) who utilised an experimental/control research design with an adequate (if not equally matched) sample of 68 participants in the experimental group compared to 28 in the control group. Bozer and Sarros (2012) used established outcome measures and also measured outcomes that are practically useful to organisations. They found that the only outcome to significantly improve to a greater extent for the experimental group than the control group was career satisfaction. Coaching did not have a significant impact on workplace performance, as measured by self-reported job performance and job performance as rated by the supervisor. An absence of significant effects was also found by Gyllensten and Palmer (2005) who sought to investigate the impact of coaching on stress and depression levels. Once again an experimental/control design was used with the 31 participants being measured on depression, anxiety, stress and perceived coaching effectiveness. No significant interactions were found between the experimental and control groups and time for depression, anxiety or stress, although the authors do highlight that high levels of perceived coaching effectiveness were reported by participants.

Nieminen, Smerek, Kotrba and Denison (2013) sought to examine the incremental effects of an executive coaching intervention at facilitating the interpretation of multi-source feedback over and above a feedback workshop. A total of 469 managers received feedback at two time points. All participants attended a feedback workshop after receiving their initial multi-source feedback. These workshops were designed to be educational and assist managers in creating appropriate steps for development. They included explaining the content of the report and clarifying the meaning of the dimensions in the multi-source feedback instrument. Participants in the experimental group received between four and five coaching sessions in addition to the feedback workshop. The aim of the coaching was to aid a deeper understand of the feedback and further support the subsequent development and action plans. Nieminen et al. found that there was a significant difference over time for both groups in multi-source feedback ratings. However, when comparing the differences between the experimental and control group over time, no significant difference was found. Therefore the addition of coaching to support the feedback workshop did not significantly improve multi-source feedback ratings at time two.

This inconsistency in findings could potentially be explained by research design issues. To have confidence in research results, we need to be confident in the methods used to gather these results. Research is about control: about isolating and examining variables, about making

incremental changes and examining the impact. It is about comparison with a control group and monitoring changes over time. Without these controls and scientific rigour, how can one be sure that our treatment, our coaching, has been the variable that produced the change in the outcomes measured? Publication of coaching research does not automatically mean that the researchers have used these methods and demonstrated this level of control. For example, take the work by Fischer and Beimers (2009) who surveyed nine directors on their experience of working with a coach. Fischer and Beimers (2009) found that the majority of coachees rated working with a coach as 'very helpful', with moderate to large improvements in goal accomplishment identified by the coachees. However, no control group was used in the study so there was no-one to compare the changes in the coaching group's results with. This research study is not alone with many others failing to use a control group to provide a comparison of results (For example, McGuffin & Obonyo, 2010; Oliver et al., 1997).

Even in instances where a control group has been used, further methodological issues can be identified. For example, in Evers, Brouwers and Tomic (2006) study of the impact of coaching on self-efficacy beliefs, the authors used a control group of 30 participants compared to the coaching group of the same number of participants. The control group was matched with the experimental group based on salary scale which Evers et al. (2006) argue was indicative of position. However, the two samples were from separate organisations and apart from salary/position, the authors do not describe how any other potential confounding variables were controlled for (for example: organisation culture; supervisor support).

Reviewing the literature on coaching effectiveness is made more confusing because some authors either implicitly or explicitly presume that the evidence *does* conclude that coaching works. For example, in a recent paper by Bozer, Sarros and Santora (2014), they state that they have accepted the general assumption of coaching effectiveness and therefore they aim to investigate the impact of elements of the coach's background, in particular academic background which they have linked to coach credibility, on coaching outcomes. Bozer et al. cite the meta-analysis by Theeboom et al. (2014) and work by Boyce, Jackson and Neal (2010) as evidence for the acceptance that coaching is effective. As previously presented, the Theeboom meta-analysis is severely flawed, therefore basing any assumptions on the utility of coaching on this research data is unwise. The Boyce et al. reference is also a questionable citation as this study is a conceptual model of the coaching relationship and an empirical examination of this model. Boyce et al. do not investigate the overall effectiveness of coaching although they also

frame their study on the assumption that coaching works. The acceptance of the assumption that coaching works is particularly curious for Bozer et al. as in the study published previously by Bozer and Sarros (2012; described above) they found that coaching had no significant impact on job performance. The aim of investigating key components on coaching effectiveness is a valid and important research aim. However, the underlying reason for investigating these components should not be based on the acceptance of the assumption that coaching works. The lack of clarity in the evidence suggests that this assumption is yet to be supported. Moreover, the reason for investigating components of coaching should not be because it can now be concluded that coaching works and should therefore move on to the next, more fine grained analysis of when coaching works. Instead, as it is still unknown when coaching works, it is reasonable to investigate potential moderators and mediators of coaching effectiveness as these may be components of coaching that are shielding the true results in the general coaching effectiveness research. One such issue is the unresolved subject of which coaching outcomes should be measured.

**How Can Coaching Effectiveness Be Measured?**

As with definitions of coaching; there is little consensus in the literature regarding the most appropriate outcome criteria for evaluating coaching (Grant et al., 2010; MacKie, 2007; Smither, 2011). Whilst the overall objective of workplace coaching has been conceptualised as professional personal development, the impact of coaching on workplace outcomes remains unclear. Research conveys a mixed message as to the types and magnitude of outcomes one can expect from coaching as discussed above. This discrepancy in results across coaching outcome studies makes it difficult to come to any firm conclusions regarding the impact of workplace coaching.

One further potential reason for the discrepancy in findings on coaching effectiveness is due to the inconsistency across research with the types of outcome measures utilised. For example, several researchers have used measures that are recognised outcomes in the field of organizational behaviour. This group of outcomes includes measures such as workplace well-being and resilience (Grant, Curtayne & Burton, 2009); employee satisfaction (Luthans & Peterson, 2003) and depression and anxiety (Grant, Green & Rynsaardt, 2010). A small number of researchers have attempted to tackle the challenging task of measuring the impact of coaching on actual results and performance such as the work by Kombarakaran, Yang, Baker and Fernandes (2008) who measured self-reported engagement and productivity and Olivero,

Bane and Kopelman (1997) who examined objective measures of productivity. Also popular is the use of multi-source or 360 degree feedback ratings as an outcome measure in assessing coaching effectiveness (e.g. Smither, London, Flautt, Vargas & Kucine, 2003). However, some of the outcomes utilised by coaching researchers are not so well recognised. Particularly problematic is when very narrowly defined outcomes are used that may have a strong conceptual or theoretical basis in relation to overall performance, but are not direct measures of performance. These outcomes are often familiar concepts to academics however may mean very little or nothing at all to the practitioner or organization. This group of outcomes can often be described as abstract: having little value on their own without the requisite background knowledge to explain what that outcome really means. Outcomes that could be classified in this group include the measure the 'Performance Strategy Inventory (PSI)' used by Bright and Crockett (2012). Bright and Crockett describe the PSI as a measure "designed to collect subjective data on participant's effectiveness at handling typical work-related stressful situations" (Bright & Crocket, 2012, p. 8), an explanation that could be described as unnecessarily complex and difficult to interpret. A further example is provided by Evers, Brouwers and Tomic (2006) who measured very specific self-efficacy related outcomes such as acting in a balanced way and self-efficacy beliefs of setting one's own goals. These outcomes have limited applicability to the real-life organization.

There are a number of reasons why this inconsistency and abstract nature of outcomes is problematic. Firstly, knowledge builds through an accumulation of an understanding of a topic over time. An essential element of the scientific process is the replication of results in the same as well as different contexts and conditions. If results cannot be replicated then we can question whether the results of the original study were due to chance or perhaps some particular characteristic of that unique study. If the empirical research in coaching utilise different outcomes every time, then research is not being replicated. Furthermore, if studies use different outcomes, then outcomes cannot be grouped to establish a theme upon which coaching may impact. The issue of the abstract nature of the coaching outcomes is also very important when we consider the purpose of research. The aim of organizational behaviour research is to improve reliability and accuracy in order to develop and hone the discipline so that it is more effective: the ultimate aim of organizational behaviour research is to improve the evidence-base of the discipline in order to inform the practice of the discipline. If outcomes are abstract then the only purpose the research will serve is to alienate the very people who need to use the research to inform their practice: the practitioners. If outcomes are so obscured by academic jargon and

theoretical concepts then they lose their relevance to the real-world they purport to investigate. Therefore it is vitally important that outcomes that are measured are useful to organizations and practitioners. The practical usefulness of this research is a central priority for this doctoral thesis.

In order to address some of these issues and to provide a practically useful and theoretically valid framework in which to position the coaching outcomes to be examined in this thesis, established criterion models from the literatures on learning, training and development have been drawn upon in order to propose a criterion framework for evaluating coaching. The ultimate aim of learning, training and development is to maximise the effectiveness of an organization's human capital (Ford, Kraiger & Merritt, 2010) by improving performance at the individual level, on the assumption that this will subsequently result in organizational level improvements (Swart & Harcup, 2013). Learning, training and development interventions are therefore positioned as a central function of human resource management, integrated with performance management processes more widely (e.g. Murphy and DeNisi, 2008). Coaching is compatible with this conceptualisation because the aim of coaching is to aid the achievement of individual goals for improvement, in order to positively contribute to organizational-level goals and objectives. Given this compatibility, outcome criteria for training effectiveness may represent a sensible foundation for modelling the potential outcomes of coaching.

In the training literature, Kirkpatrick's (1967) model of evaluation criteria proposes that the evaluation of training should be performed at four levels: reactions, learning, behaviour, and results. Kirkpatrick (1996) states that the reaction level of evaluation can be viewed as a form of customer satisfaction: how satisfied were the trainees with the training that was delivered? Kirkpatrick specifies that this level of evaluation does not measure any actual learning that takes place however, it is still important to evaluate training at this level as trainees are unlikely to learn from a programme they do not enjoy. Additionally, reactions level information can be used to guide amendments or modifications to future training programmes. Reactions to training are the most frequently collected form of evaluation in training because they are extremely straightforward to measure.

Learning is described as the degree to which knowledge was acquired, skills were developed or attitudes were changed as a result of the training (Kirkpatrick, 1996). Kirkpatrick suggests that learning should be assessed in an experimental format by measuring the targeted outcome (i.e.

the knowledge, skill or attitude) before and after the training in order to compare any changes. Kirkpatrick recommends that the same data should also be collected from a control group to provide extra credibility to findings.

Kirkpatrick's (1996) third level of evaluation is behaviour. This is described as the extent to which the trainee's behaviour on-the-job changes as a result of the training: also known as transfer of training. Kirkpatrick specifies that evaluation at this level is challenging. As with the evaluation of learning, it requires a scientific approach, however it is also important to consider the potential influence of a range of other factors. Kirkpatrick suggests evaluating behaviour before and after training with data also collected from a control group, preferably by collecting appraisals of the trainee's behaviour from a range of sources such as the line manager, peers and subordinates. This approach should provide an accurate picture of the individual trainee's behaviour before and after the training in the workplace.

Finally, in order to effectively evaluate the success of a training programme, evaluation should also be conducted at the results level. Kirkpatrick (1996) states that most training programmes have desired results outlined as the main purpose or objective of the training. Examples of the types of results that a training programme may aim to produce include reduced costs, higher quality or increased production. Therefore, it is appropriate to measure the effectiveness of training in terms of the desired results that have been produced as a consequence of the training. However, as with measuring behaviour, the assessment of the impact of training on results becomes complicated due to the range of other potential variables that may also contribute to these results. Kirkpatrick suggests that there are no easy answers to the question of how to measure results, however in order to effectively evaluate training it is essential to evaluate at all four levels.

Kirkpatrick's model is widely applied in research and practice (e.g. Alliger, Tannenbaum, Bennett, Traver & Shotland, 1997; Arthur, Bennett, Edens & Bell, 2003; Powell & Yalcin, 2010; Tharenou, Saks & Moore, 2007) and represents a logical organization and progression of outcomes from basic individual reactions to training through to training transfer and organizational results. The key feature of Kirkpatrick's model which potentially explains the enduring success is the simplicity and practical applicability. Kirkpatrick originally created the model with the aim of providing guidance to practitioners on how to effectively evaluate training, therefore an overly scholarly, complex approach would not have fulfilled this aim.

Despite the continued popularity of Kirkpatrick's model of evaluation, Kraiger, Ford and Salas (1993) argue that when evaluating training, it is necessary to examine learning based outcomes in a more sophisticated way, rather than combining learning and transfer outcomes as in the Kirkpatrick levels. They highlight the argument presented by Campbell (1988) that the most fundamental issues when evaluating training is whether the trainees have learnt the material covered in the training. In response to the lack of a conceptual model which can guide researchers on how to evaluate learning, Kraiger et al. (1993) proposed a model of three classes of learning outcomes that they propose can occur following training: cognitive; skill-based and affective outcomes.

Firstly, cognitive outcomes describe the quantity and type of knowledge learnt and the relationships among these knowledge elements. Kraiger et al. (1993) propose that cognitive outcomes can be separated into verbal knowledge, the creation of suitable mental models for knowledge organization, and the ability to retrieve and apply knowledge via established cognitive strategies. Kraiger et al. recommend that suitable evaluation methods of cognitive outcomes might include recognition and recall tests, free sort tasks (where trainees make judgements of the similarity or closeness among core elements of the course material) and probed protocol analysis (where trainees provide a step by step analysis of the necessary stages in successfully completing a task).

Next, Kraiger et al. (1993) suggest that learning should result in skill-based outcomes such as the development of technical or motor skills. Skill-based outcomes can be measured by the level of compilation the individual can demonstrate (i.e. a smooth, fast performance should be expected with advanced skills) and also automaticity of performance (where the skill is demonstrated fluidly by automatic rather than controlled processing). Kraiger et al. suggest the some potential methods of assessing skill-based outcomes are behavioural observation and secondary task performance (where trainees perform the trained task while simultaneously performing a secondary task).

Finally, Kraiger et al. (1993) describe how learning should also result in affective outcomes. This outcome is based on Gagne's (1984) theorising that attitudes as a learning outcome are important as they are determinants of behaviour or performance. Gagne (1984) defines an attitude as an internal state that influences the individual's choice of personal action. Kraiger et

al. (1993) expand this definition by including motivation and affect as training outcomes and suggest that affective outcomes can be evaluated by self-report measures. Research has established strong links between affective variables and work-based performance (Conway & Briner, 2012; Judge & Kammeyer-Mueller, 2012; Judge, Thoreson, Bono & Patton, 2001; Meyer, Stanley, Herscovitch & Topolynytsky, 2002).

Based on these existing criterion frameworks, it is proposed that the outcomes of coaching be modelled in the following ways. With respect to the Kraiger et al.'s (1993) three-component classification, it is proposed that the potential outcomes of coaching are similarly separated into cognitive, skill-based and affective outcome criteria, although it is expected that the nature of these outcomes in the context of coaching is probably different from training, which will be explored in more detail in the following sections.

Referring to Kraiger et al.'s (1993) types of cognitive outcomes, it is proposed that new verbal knowledge is the outcome least likely to be developed through coaching. Earlier in this chapter, it was asserted that coaching does not involve providing instruction to the coachee (McAdam, 2005) and instead is concerned with assisting the coachee in the process of making sense of existing knowledge (Swart & Harcup, 2013). Therefore, although the coaching process may involve the development of some new knowledge through discussion with the coach, the scope of new knowledge gained will be very different when compared to instructional training. Kraiger et al.'s second type of cognitive outcome is the creation of suitable mental models for knowledge organization, this type of cognitive outcome is potentially more likely than gaining new verbal knowledge in coaching, as the coach works with the coachee to help make sense of the information available to them. This process may involve the coachee making new associations between existing knowledge in order to address barriers or blockers to behaviour change therefore applying existing knowledge in new ways.

Finally, Kraiger et al. (1993) suggest that cognitive outcomes also include the ability to retrieve and apply knowledge via established cognitive strategies. This type of outcome may be particularly relevant when considered cognitive-behavioural coaching. The focus of cognitive-behavioural coaching is to change behaviour by understanding the impact an individual's view on events has on the way they feel and act (Neenan & Dryden, 2010). During the course of cognitive-behavioural coaching, the coach may work with the coachee to identify his or her view of the event or issue in question, where necessary, challenge these views and realign them to a

viewpoint that is more likely to bring about the results that the individual is looking for.  The coachee would take away from the coaching session a new cognitive strategy to use in the situation being addressed.

A potential explanation for this proposition that coaching can produce cognitive outcomes is provided by Latham and Locke's (1990a; 1990b; Latham, Locke & Fassina, 2002) high performance cycle (a development of goal setting theory). Latham et al. describe strategies as cognitive in nature and involve the development of skills and problem-solving. Latham et al. proposed that goals activate the application of or search for strategies as part of an individual's goal-striving efforts. Therefore, goals motivate and guide the use of existing knowledge and strategies and, where necessary, goals promote the acquisition of new skills through problem-solving and learning, leading to new strategies (Wood, Whelan, Sojo & Wong, 2013). In this thesis, it is proposed that a core underlying mechanism that explains why coaching produces behaviour change is the use of goal setting, an area that is expanded in chapter three. Therefore, by integrating these ideas on the role of goal setting in forming cognitive strategies, despite the lack of instructional, knowledge based learning in coaching, it still seems likely that coaching can produce cognitive learning outcomes.

In Kraiger et al.'s (1993) framework, they specify a range of measurement techniques for cognitive outcomes, the first of which is recognition and recall tests. In practice, when evaluating learning from training, of the range of cognitive outcome evaluation methods Kraiger et al. discuss, recognition and recall tests are the technique that is most easily applied and therefore the most popular in practice. In the context of cognitive coaching outcomes, as outlined above, recognition and recall tests are the least suitable method, as new verbal knowledge is the least likely cognitive outcome from coaching. However, Kraiger et al.'s other suggested cognitive outcome evaluation methods such as free sorts to assess mental models and probed protocol analysis to assess cognitive strategies could still be utilised when evaluating coaching. In practice, the highly individualised nature of each coaching intervention, mean that these evaluation methods would need to be created on a case-by-case basis. It is unlikely that one template technique could be applied across different coachees, making evaluation of coaching at this level practically challenging. This potentially explains the lack of reported cognitive outcomes in the coaching literature.

Skill-based outcomes arguably have a similar level of importance in coaching compared to training. At the start of this chapter, it was described how the purpose of coaching is to achieve professional outcomes that are of value to the coachee. Examples of the types of skills that coaching may aim to develop include leadership, assertiveness, communication, decision-making and delegation. Coaching is able to effectively promote skill acquisition and enhancement through the work-based application of improvement and development activities. This process is explained by features of experiential learning and the high psychological fidelity associated with coaching. For example, during the coaching process, the coach may discuss with the coachee, potential opportunities in which they are able to practice the skills developed during coaching. These processes promote focus on developing goal-related and job-specific skills (e.g. Grant, Curtayne & Burton, 2009). The role of experiential learning and psychological fidelity in coaching will be returned to in chapter three.

Skill-based outcomes are demonstrated by the individual's behaviour in the workplace and as such, Kraiger et al. (1993) specify that skill-based outcomes can be measured by behavioural observation. An example of this approach to evaluating coaching is illustrated in the work by Kines, Andersen, Spangenberg, Mikkelsen, Dyrborg and Zohar (2010). Kines et al. utilised direct behavioural observations to assess safety behaviour on construction sites in order to evaluate the effectiveness of coaching aimed at improving site safety. Kraiger et al. (1993) also suggest that skill-based outcomes can be measured using hands-on testing. This form of skill-based evaluation is less frequently seen in the coaching literature however one example is provided in the research by Taie (2011). Taie utilised a competency skill test to assess nurses ability to perform basic life support skills after receiving coaching specifically focused on improving the coachee's life support skills.

A more frequently utilised method of gathering information on an individuals' behaviour that is described in the coaching literature is the use of 360 degree or multi-source feedback. For example, Luthans and Peterson (2003) utilised the Management Feedback Profile as a 360 degree feedback tool to measure three factors of manager's self-regulatory behaviour: behavioural competence (i.e. determines appropriate solutions/resolutions for identified problems); interpersonal competence (i.e. provides timely information and feedback) and personal responsibility (i.e. takes initiative in trying new ideas). Also, Smither et al. (2003) assessed management skills developed as a result of coaching via multi-source feedback, with scale items such as 'respectfully confronts problematic behaviour' and 'responds to others

needs to balance personal and work demands'. Multi-source feedback is a popular tool in many organizations and can generally be easily administered. These factors explain why the extant coaching research tends to already collect evaluation data at the skill-based level using the technique of multi-source feedback.

It is proposed that affective outcomes are relatively more important in coaching than training. Many of the valued outcomes that are the focus of coaching represent affective outcomes (e.g. development of self-efficacy and confidence, reducing stress, increasing satisfaction and improving motivation). Therefore, the coaching intervention may focus on ways in which to directly develop and improve affective outcomes. However, there may also be an indirect impact from coaching on affective outcomes. In particular, goal setting (Latham, Locke & Fassina, 2002) and the process of action planning for problem solving in experiential learning (Kolb & Kolb, 2008), are likely to exert influence on motivation and affective orientation to performance improvement. Furthermore, according to Locke and Latham's high performance cycle (1990a), the process of working towards a challenging goal with a valued outcome (as occurs in coaching) creates a greater impact on affective reactions such as job satisfaction.

According to Kraiger et al.'s (1993) recommendations, affective outcomes should be evaluated by using self-report measures. The field of industrial-organizational psychology benefits from a range of established affective outcome measures, many of which have already been utilised in the coaching literature. For example, Luthans and Peterson (2003) measured organizational commitment as an outcome of coaching using the Organizational Commitment Questionnaire (OCQ; Mowday, Steers & Porter, 1979); Grant, Curtayne and Burton (2009) measured resilience and workplace well-being as coaching outcomes using the Cognitive Hardiness Scale (Nowack, 1990) and Bozer and Sarros (2012) measured coachee career satisfaction using Greenhaus, Parasuraman and Wormley's (1990) Career Satisfaction Scale. The abundance of suitable self-report scales available in the literature and the ease in which they can be administered mean that evaluating coaching at the affective level is easily implemented in practice.

Finally, in the description of coaching provided earlier in this chapter, it was also noted that the aim of coaching is to contribute to achievement of organizational-level goals and objectives (e.g. Sonnentag & Frese, 2002). By aligning individual goal setting to these organizational-level goals and objectives, coaching may impact performance, making it sensible to include some measure

of results, as per Kirkpatrick's model (Kirkpatrick, 1996). It is proposed that results might be measured in terms of impact on individual-, team-, and organizational-level performance.

As with training, most coaching has a results-based outcome as the desired objective of the coaching. In order to achieve this individual-level results objective, outcomes may also be produced at the cognitive, skill-based and affective levels. For example, a coachee who wishes to develop leadership skills may have a results-based objective for wanting to develop this skill set. The coachee may anticipate that by improving his or her leadership skills, they may be able to take a more strategic lead in their role, consequently increasing the long-term profitability of their unit. The targeted change at the skill-based level is in order to generate a change at the individual results level.

Continuing this theme, an equally valid objective of coaching may be to produce results at the team-level. Again, using the leadership skills example, the coachee may want to improve his or her leadership and communication skills in order to effectively bring their team together to work more collaboratively. An increased collaborative approach within the team may then lead to the team fulfilling more of the team-level objectives: a team-level results outcome.

Finally, it seems logical that if individual-level and team-level results objectives are aligned with organizational-level results objectives then changes at either the individual- or team-levels should generate changes at the organizational-level. For example, if the coachee was to improve the profitability of his or her unit and increase the number of team-level goals being fulfilled as a result of learning and development achieved through coaching, then it is likely that these improvements at the individual- and team-levels will filter through into improvements of results at the organizational-level.

While in theory, it is logical that coaching could generate changes at the individual-, team- and organizational-levels of results, in practice, it is very challenging to evaluate outcomes at these levels. In relation to evaluating training, Kirkpatrick (1996) explains that there is no easy solution to the problem of evaluating training results. The range of internal and external variables that impact on results, in addition to any changes created as a result of training, mean that it is very difficult to isolate the impact of the training intervention on the results outcome being assessed. These challenges apply equally to evaluating coaching outcomes at the results-level. To further confound the issue, the impact of managers and leaders (who are frequently those receiving

coaching) on results outcomes is generally not obvious or linear. Managers and leaders often do not have a direct impact on any results outcomes (even those at the individual-level) making these outcomes extremely distal from the individual. This may explain why few coaching researchers have attempted to measure individual-level results (Grant et al., 2009; Grant et al., 2010; Olivero et al., 1997) and no researchers have attempted to measure either team- or organizational-level results.

At the start of this section, an overview of Kirkpatrick's four levels of training evaluation (1967, 1996) and Kraiger et al.'s (1993) framework for evaluating learning outcomes were provided. Using both frameworks as a guide, it has been described how the various types of training outcomes outlined by both Kirkpatrick and Kraiger et al. relate to outcomes of coaching. However, the framework of coaching outcomes does not include any reactions-level outcomes as outlined in Kirkpatrick's model. This is because in this thesis, the modelling of evaluating coaching concerns outcome criteria that serve as some form of benefit to organizations; therefore individual reactions to coaching are not included. Although, Kirkpatrick (1996) posits that reactions to training are an indicator of training success as he proposes that employees will not learn from a training programme they do not enjoy, this assertion has not been supported in the literature (i.e. Alliger & Janak, 1989; Alliger et al., 1997; Arthur et al., 2003; Colquitt, LePine & Noe, 2000; Tan, Hall & Boyce, 2003). Consequently, evaluation of coaching at the reactions-level has not been included in this framework of coaching outcomes.

This proposed set of evaluation criteria for coaching is summarized in Table 2.1. Drawing on Kraiger et al. (1993) and Kirkpatrick (1996) acceptable measurement methodology for assessing these outcome criteria have also been specified. This framework of outcomes is explored further in the meta-analysis presented in chapter four and also provides the guiding framework for the subsequent studies presented in this thesis.

| Outcome Criteria | Description | Measurement Methodology |
|---|---|---|
| Affective outcomes | Attitudes and motivational outcomes (e.g. self-efficacy; well-being; satisfaction). | Self-report questionnaires |
| Cognitive outcomes | Declarative knowledge; procedural knowledge; cognitive strategies (e.g. problem-solving). | Recognition and recall tests Free sorts Probed protocol analysis |
| Skill-based outcomes | Compilation and automaticity of new skills (e.g. leadership skills; technical skills; competencies). | Behavioural observation in the workplace (e.g. multi-source feedback questionnaire) Skill assessment |
| Results | Individual, team and organizational performance | Financial results; objective or goal achievement; productivity |

**Table 2.1:** Framework of coaching outcomes and summary of proposed coaching evaluation criteria.

In the development of the framework of coaching outcomes, recommended measurement methodology for each type of outcomes is highlighted. A further issue in measuring coaching outcomes is the challenge of creating a statistically reliable and valid method of measuring unobservable outcomes. As asserted earlier, the aim of coaching is to enable the coachee to progress through a professional personal development process that focuses on interpersonal and intrapersonal issues. Many of the issues dealt with during coaching are interpersonal and therefore a successful outcome of coaching such as a change in the impact of this interpersonal issue may only be detectable by the coachee. Fortunately, organizational behaviour researchers and psychologists have dedicated many years of research to the art of scale development. A clear process therefore exists outlining how to create reliable and valid scales by working through a series of specific scale development stages. Despite this, scale development in studies on coaching is often weak (e.g. Bright & Crockett, 2012; Smither et al., 2003), a point which is expanded further in chapter five.

Absence of reliable and valid scales for measuring coaching outcomes is a significant barrier to developing an evidence base for coaching effectiveness. To address this need, in chapter five the framework of coaching outcomes shown in Table 2.1 will be built upon in order to develop and empirically test a conceptually derived, reliable scale for measuring perceived outcomes of workplace coaching.

**Conclusion**

In this chapter, coaching has been positioned as one of a number of training, learning and development tools. The nature and growth in the use of coaching has been explored and how workplace coaching is conceptualised in the context of this thesis has been articulated.

This literature review has highlighted that despite the continued growth in the practice of coaching, the evidence for coaching effectiveness is limited. A summary of the extant research on coaching effectiveness has been presented here and in particular the limitations of this body of research have been explored. Most concerning are the mixed findings in coaching research and the lack of scientific rigour in research methodology. A potential explanation for the inconsistency in findings on coaching effectiveness may be the lack of a conceptually driven framework of outcomes. In response to this, a framework of outcomes has been presented here that will be empirically tested in subsequent chapters. However, before further exploring the framework of outcomes it is first important to understand what variables and mechanisms are likely to influence coaching effectiveness: how do the theorists propose that coaching generates outcomes? The next chapter will address this question.

# CHAPTER THREE

## What are the Variables and Mechanisms that Influence Coaching Effectiveness?

"Do you think things always have an explanation?"
"Yes. I believe that they do. But I think that with our human limitations we're not always able to understand the explanations. But you see, Meg, just because we don't understand doesn't mean that the explanation doesn't exist."
*Madeleine L'Engle, A Wrinkle in Time*

## Chapter Summary

This chapter provides the theoretical context for this thesis. It begins by outlining the existing theories of coaching effectiveness. These theories are reviewed and, in response to the limitations identified with these theories, an alternative, general model of coaching effectiveness is proposed. This model draws on the established theories of goal setting; experiential learning and psychological fidelity to explain the processes of coaching and reviews the relevant literature to propose practice factors of coaching that may influence coaching effectiveness. Next, in order to further explore the potential underlying reasons why coaching may be more or less effective, relevant individual differences theories are explored. The extant literature regarding the impact of individual differences on a variety of workplace and training outcomes is presented. Finally, these concepts are integrated into a theoretical model of individual differences and coaching effectiveness. This model is discussed in detail, including the relevant literature and takes a step in the right direction for exploring a previously neglected area in coaching research. Overall, this chapter presents the relevant literature to provide the background to the development of the theoretical model that is tested in the intervention study presented in chapter six, addressing one of the primary research aims of this thesis: 'For whom is coaching most suited?'

## Theories of Coaching Effectiveness

It is essential for literatures on learning and development methodologies to strive for theory that explains why and how different methods improve individual effectiveness at work (Ford, Kraiger & Merritt, 2010). Such theoretical understanding is required to propose and clarify the impact of learning and development interventions on criteria. A primary aim of this doctoral research is to help coaches, coachees and organisations to begin to understand when coaching is more or less effective to enable them to tailor learning and development solutions. In order to achieve this aim, it is necessary to examine the underlying processes that operate during a coaching intervention. Let us temporarily assume that coaching does effectively improve outcomes: how

is it suggested that this is achieved? Unfortunately, a review of the literature in this area does not provide any clear answers to this question as there is a marked underdevelopment of such theory in the literature on coaching. Two of the first theories to be proposed are in the work of Kilburg (2001) and Joo (2005). Kilburg's (2001) model (shown in Figure 3.1) includes a variety of elements which he proposes influence coaching effectiveness which have been derived from his own coaching experience and his review of the literature. Similarly, Joo (2005) provides a conceptual framework of successful coaching shown in Figure 3.2, again formulated on previous coaching research and also theory and research from neighbouring fields such as training and feedback. Examination of these theories illustrates that both are incomplete; they are too broad and the variables included are undefined. Due to this undefined, broad nature of the variables, both theories are not testable and have weak explanatory power. In sum, the theories say a lot but actually mean very little.



**Figure 3.1:** Kilburg's (2001) model of coaching effectiveness

The fundamental problem with both of these models is their complexity. In his work on theory building, Dubin (1969) outlines that theories should be testable; therefore it is important that they do not contain any summative units. Summative units are global, complex units which draw together a number of different properties. For example, Kilburg's (2001) model refers to the 'client-coach relationship' and Joo (2005) refers to 'coach characteristics', among other categories. These units often mean a great deal, although much of this is ill defined or unspecified. For these reasons, Dubin (1969) concludes that summative units have no place in theories as they cannot be directly tested. Furthermore, both models lack grounding in existing theory and therefore do not hold strong explanatory power to increase understanding of the underlying processes in coaching. Therefore, despite the contributions from Kilburg and Joo, there is still a need for a precise and powerful theory of coaching effectiveness that is empirically testable.
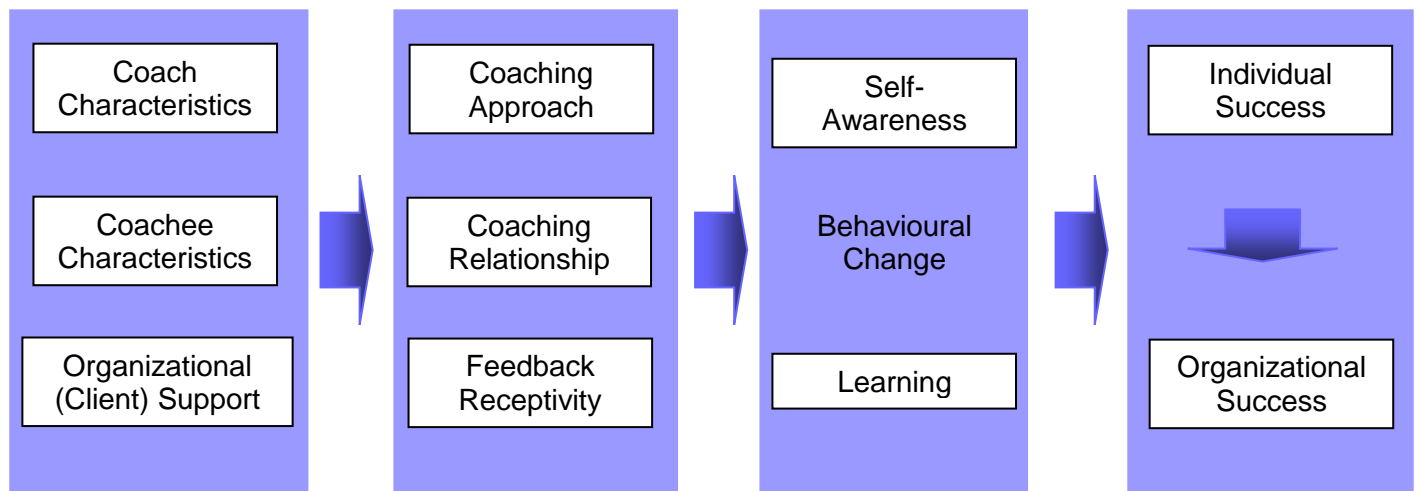


**Figure 3.2:** Joo's (2005) conceptual framework for successful executive coaching

A more recent development in coaching theory is proposed by Gregory, Beck and Carr (2011) who suggest that control theory can provide an organizing framework to explain the role that goals and feedback play in coaching effectiveness. Gregory et al. (2011) base their work on the assumption that the purpose of coaching is to encourage coachees to better regulate their own behaviour to increase the achievement of desired outcomes. Gregory et al. (2011) describe the central premise of control theory as the desire for individuals to control a variable (often their performance) by regulating their behaviour. They suggest that this process begins by the individual comparing a referent level of performance (i.e. a goal) with information collected on performance in relation to this goal (i.e. feedback). Gregory et al. (2011) suggest that when a

discrepancy is detected by the individual between the goal and current performance, some output is implemented (i.e. increased effort) to reduce the discrepancy (see Figure 3.3).

Gregory et al. (2011) propose that control theory provides a useful framework for understanding coaching, as two essential elements of control theory: goals and feedback; are also essential elements of coaching. In their integration of control theory with coaching, Gregory et al. suggest that coaching can help coachees to improve their self-regulatory performance as described in control theory. Some specific examples of how they propose this can be achieved include helping coachees to identify higher-order goals and set lower-order goals that contribute to the achievement of the higher-order goals; helping coachees develop an appropriate level of self-efficacy which encourages striving to achieve goals and to provide feedback to coachees and help them to self-generate feedback on performance.
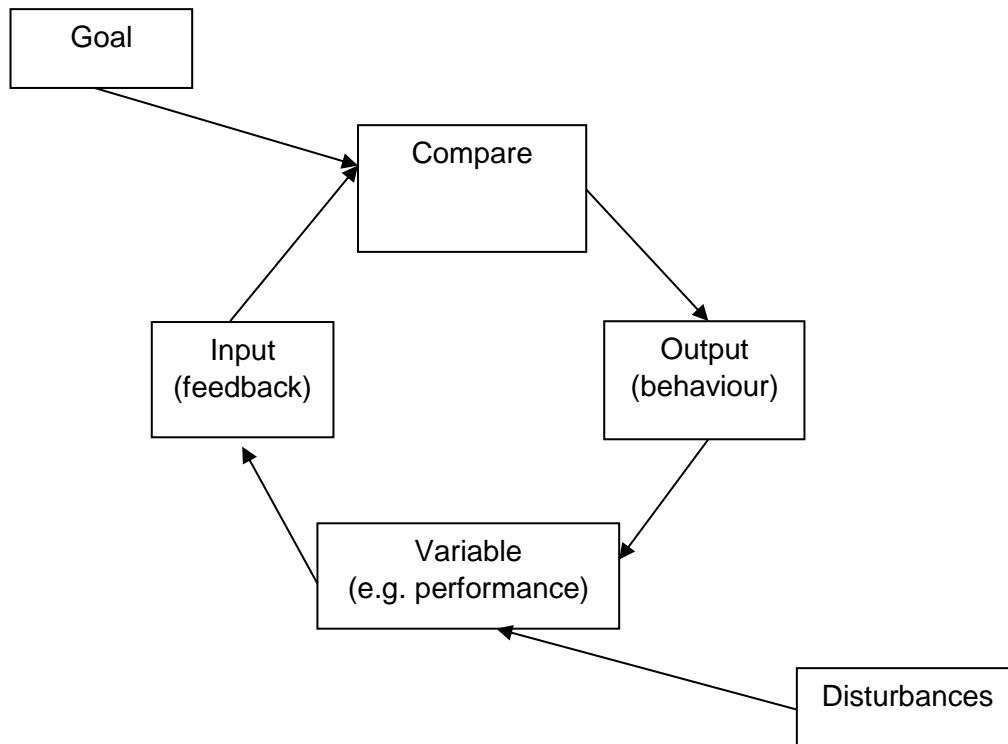
**Figure 3.3:** A simple control loop (Gregory et al., 2011).

Gregory et al. (2011) provide the only specific theoretical framework to-date that considers the underlying processes operating during coaching. This model has yet to be tested, therefore the validity of the model in conceptualising the processes in workplace coaching has yet to be

confirmed. This model is an advance on the models provided by Kilburg (2001) and Joo (2005) as it integrates coaching fully with an existing, established theory in the form of self-regulation and by including specific, well-defined concepts that can be tested. However, Gregory et al.'s model is limited by narrowing the focus of the model too severely. Gregory et al. provide a very restricted view of coaching by only including the elements of goals and feedback. If these are the only elements of coaching that influence effectiveness then what is coaching offering over and above an intervention such as a multi-source feedback workshop where feedback is provided and used to create goals in the form of action plans? Although the concept of self-regulation, goals and feedback are certainly important elements in what makes coaching effective, it is suggested here that there are also other influences operating that make coaching unique from other feedback and goal setting interventions.

**Factors Influencing Coaching Effectiveness: A General Model**

Theory and research in the field of learning, training and development generally examines the impact of both the treatment effects on outcomes, for example, elements of the training intervention that make it more or less effective; and learner effects, for example, elements of the learner that impact on the effectiveness of the training. A similar approach will be adopted here in order to examine likely factors that may influence coaching effectiveness. These ideas are summarised in Figure 3.4.  In relation to treatment effects two separate effects will be explored. Firstly, the processes of coaching that impact on effectiveness and secondly the practice factors of coaching that are likely to moderate effectiveness.  Finally, potential learner effects, or coachee characteristics that may influence coaching outcomes will be explored.
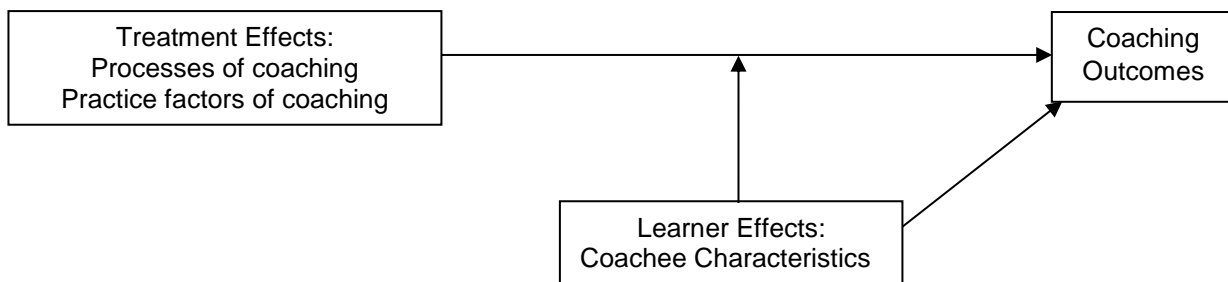


**Figure 3.4:** A general model of coaching effectiveness

**Treatment effects: processes of coaching.** To address the need to understand why coaching works, a model is proposed that explains the processes by which coaching creates positive

improvement in performance and effectiveness. In this model, the concepts of goal setting, experiential learning, and psychological fidelity are draw upon and integrated with practice factors of coaching described later in this chapter and the outcomes of coaching proposed in chapter two (see Figure 3.5).

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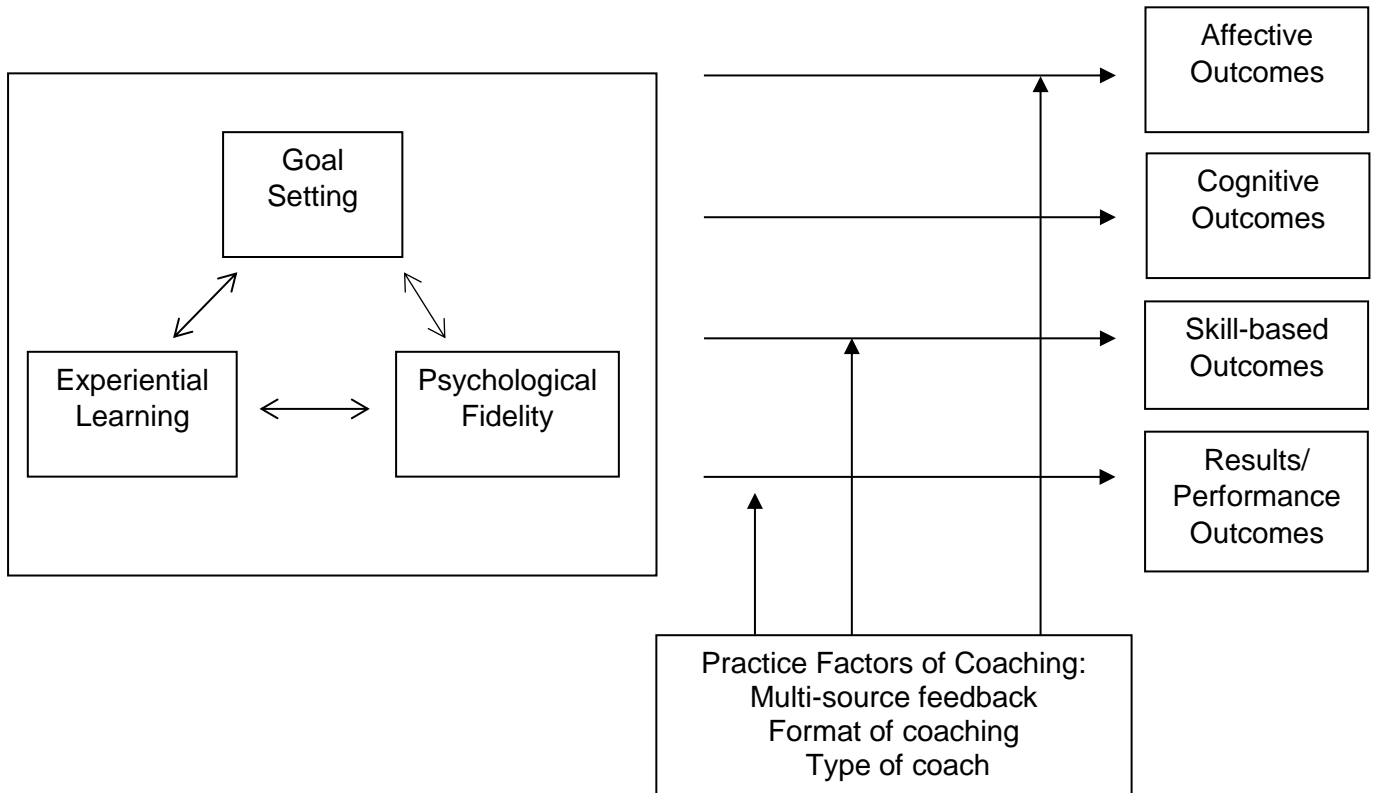
**Figure 3.5:** Theoretical model of coaching processes, practice factors and proposed coaching outcomes

*Goal setting.* Like Gregory et al. (2011), it is proposed that coaching relies heavily on goal setting (David, Clutterbuck & Megginson, 2014; Grant & Cavanagh, 2004). Goal setting theory and empirical studies of the effects of goal setting consistently show that specific, challenging goals lead to improved performance, with more than 400 correlational and experimental studies providing support for the validity of the goal setting approach (Latham & Locke, 2007; Locke & Latham, 1990a). Goals are an explicit standard by which employees can judge their progress and performance at work. Terpstra and Rozell (1994) observed that, across industries, organizations that employed goal setting had higher levels of annual profit and greater profit growth than those that did not. Other examples of the impact of goal setting on performance include research by Crossley, Cooper and Wernsing (2013) who found that managers who set

more challenging goals for their business units benefitted from higher sales performance. Colbert and Witt (2009) found that when leaders provide strategic direction for employees by setting goals that are related to the organization's vision, conscientious employees responded with higher levels of performance. Also, Morisano, Hirsh, Peterson, Pihl and Shore (2010) found that undergraduate students who had been struggling academically, significantly improved their academic performance after completing a goal setting intervention when compared to a control group and Wegge, Bipp and Kleinbeck (2007) found that the effects of goal setting on performance are robust and can be found even when goals are set across a non-face-to-face, video-conferencing format.

It is clear from the literature that goal setting is a core element of the coaching approach (i.e. Bono et al. 2009; Evers et al. 2006; Grant et al. 2009). Whitmore's (1992) GROW (goal, reality, options, will/way forward) model is the most popular framework for structuring coaching sessions and utilises goal setting as the start point for all coaching. Therefore it is clear how goal setting fits in with the provision of coaching, however how do the goal mechanisms and moderators described by Locke and Latham (2002) apply to coaching?

Locke and Latham (2002) describe how goals affect performance through four mechanisms. Firstly, individuals with clear goals seem more able to direct attention and effort towards goal-relevant activities and away from goal-irrelevant activities. By setting goals during a coaching session with a time frame for completing the goals, the coachee's attention is highly focused towards the actions that need to be taken to fulfil the goals. Reporting back to the coach with progress on goal completion ensures that that the coachee remains focused on working towards the goal even after the coaching session has finished and the coachee has returned to the workplace. This means that when additional demands are placed on the individual coachee they may be more likely to prioritise effectively to ensure that they are able to direct their attention towards activities that will increase the likelihood of goal achievement.

Locke and Latham (2002) state that the establishment of clear goals appears to increase enthusiasm, with more important goals leading to the production of greater energy than less important goals. By discussing and exploring the goal in detail during the coaching session, the coachee is likely to feel a greater degree of energy and enthusiasm towards actively pursuing the goal than if the coachee was to work towards the goal on their own. Reflecting on and

verbalising the goal and why the goal is important, is likely to motivate the coachee to act in a way that will help to achieve his or her goal.

Goals increase persistence, making individuals less susceptible to the undermining effects of anxiety, disappointment and frustration. Working with a coach towards achieving a goal may increase the levels of persistence even further. The coachee can discuss the challenges and frustrations they face in achieving their goal and the coach can work with the coachee to create ways of removing blockers or barriers impacting on goal achievement. The opportunity to vent these frustrations to a coach who understands the coachee, but will also continue to challenge the coachee to persist in working towards the goal, will increase the likelihood that the coachee will continue to strive towards achieving his or her goal.

The final mechanism that Lock and Latham (2002) suggest explains how goal setting effects performance is by indirectly leading to the arousal, discovery and use of task relevant knowledge and strategies. For example, when confronted with goals, individuals use existing relevant knowledge and skills to assist in goal attainment. Coaching supports this mechanism further by providing the forum for the coachee to make-sense and explore the knowledge and skills they already have in order to filter through to what is most relevant to achieving the goal in-hand. Locke and Latham (2002) also state that individuals' draw from a repertoire of skills that they have used previously in related contexts, and apply them to the present situation. However, not everyone is apt at applying skills or knowledge from one situation to a new situation or challenge. Coaching is able to assist in this process by encouraging the coachee to reflect on how they have handled similar problems in the past and to draw out the relevant information from their repertoire of skills to encourage them to apply these to the new issue. Smith, Locke and Barry (1990) also suggest that if the task for which a goal is assigned is new, then the individual will engage in deliberate planning to develop strategies that will enable them to attain their goals. Once again, coaching can assist with this process by providing the reflective space for coachees to plan these strategies and additionally to explore and remove potential blockers that may have stopped the coachee from acting on these plans.

In addition to the mechanisms that explain how coaching effects performance, Locke and Latham (2002) also propose a series of moderators that explain the degree of the impact of goals on performance. Particularly relevant to coaching and goal setting is goal commitment, importance and feedback. The goal-performance relationship is strongest when goal

commitment is high. A key factor facilitating goal commitment is the importance of the outcomes that the individual expects to receive as a result of working to attain the goal. During the goal setting stage in coaching, the goal is fully explored, including asking the coachee to state how important the goal is to them and also to explain why they want to achieve this goal, for example, what are the anticipated outcomes? Coachee's often find that participating in this process enables them to reflect on their goal at a much deeper level. It is likely that the coachee was aware that the goal was important to them, however it was not until the goal was discussed fully during the coaching that the coachee truly became aware of the impact that achieving that goal could have.  Consequently, coaching helps to clarify goal importance and goal commitment, therefore increasing the likelihood of a stronger goal-performance relationship.

Locke and Latham (2002) also suggest that individuals need to be provided with summary feedback on progress towards goal achievement. For example, if individuals do not know how they are performing in relation to the goal, it is difficult to adjust the level or direction of effort to match what the goal requires. As with Gregory et al.'s (2011) framework of coaching effectiveness, feedback is proposed to be integral to the coaching process. The coach provides feedback directly to the coachee on how they believe the coachee is performing towards the goal and the coach will also explore with the coachee options available to the coachee in order to self-generate feedback on their performance from other suitable sources. Consequently, coaching increases the amount of feedback provided to an individual on their progress towards goal achievement therefore once again increasing the likelihood of a stronger goal-performance relationship.

To summarise, goals direct behaviour through well-explicated mechanisms described in goal setting theory (e.g. attentional direction, energizing function, promotion of persistence and activation of task-relevant knowledge, Locke & Latham, 2002). Goal setting is therefore proposed as one process by which coaching improves performance and effectiveness by increasing persistence, providing feedback, clarifying goal importance and directing effort, attention and learning towards specific performance-related objectives.

*Experiential learning*. In addition to goal setting, coaching involves learning new skills and behaviours through experience and practice in the workplace. Kolb's (1984) experiential learning theory (ELT) is a useful model to explain this learning process. Experiential learning theory gives experience a central role in learning and development (McCall, Lombardo, &

Morrison, 1988; McCauley, Ruderman, Ohlott, & Morrow, 1994; Ohlott, 2004). The theory is based on the integration of six assumptions (Kolb, 1984). Firstly, learning is best conceived as a process, not in terms of outcomes.  To improve learning, the primary focus should be on engaging learners in a process that best enhances their learning: a process that includes feedback on the effectiveness of their learning efforts. Secondly, all learning is re-learning. Learning is best facilitated by a process that draws out the learners' beliefs and ideas about a topic so that they can be examined, tested and integrated with new, more refined ideas. Thirdly, learning requires the resolution of conflicts, differences, and disagreement. In the process of learning one is called upon to move back and forth between opposing perspectives. Fourthly, learning is a holistic process.  It involves the integrated functioning of the total person: thinking, feeling, perceiving and behaving. Fifthly, learning results from transactions between the person and the environment. The way we process the possibilities of each new experience determines the range of choices and decisions we see.  The choices and decisions we make to some extent determine the events we live through, and these events influence our future choices. Finally, learning is the process of creating knowledge.  ELT proposes a constructivist theory of learning whereby social knowledge is created and recreated in the personal knowledge of the learner.  This stands in contrast to the "transmission" model on which much current educational practice is based where pre-existing fixed ideas are transmitted to the learner (Boud & Walker, 1993; Dewey, 1938; Fenwick, 2003; Knowles, 1970; Kolb, 1984; Mezirow, 1991). Kolb (1984) portrays the experiential learning process as an idealized learning cycle where the learner should 'touch all the bases' of experiencing, reflecting, thinking and acting, in order to maximise learning through experience. Kolb named these four bases or stages: concrete experience, reflective observation, abstract conceptualization, and active experimentation (see Figure 3.6). In Kolb's model, concrete experiences form the basis for observations and reflections.  These reflections are assimilated and distilled into abstract concepts from which new implications for action can be drawn.  These implications can be actively tested and serve as guides in creating new experiences.

Experiential learning theory assumes that individuals can construct a rich understanding of their own experiences and then generalize the lessons of those experiences to improve their performance (Boud & Walker, 1993; Kolb, 1984; Mezirow, 1991). Yet, leadership development research is replete with examples where individuals struggle to learn from experience or even learn the wrong lessons (DeRue & Wellman, 2009; McCall et al., 1988). A further criticism of experiential learning theory is provided by Vince (1998), who suggests that one of the limitations

with Kolb's experiential learning cycle is that it is based on the assumption that individuals are open to experience and not defended against it. People's behaviour emerges out of deeply held patterns and unconscious processes that both encourage and discourage learning from experience. Therefore, Vince (1998) suggests that a necessary development of Kolb's learning cycle is to find ways of working with underlying or unconscious processes, particularly defence mechanisms.
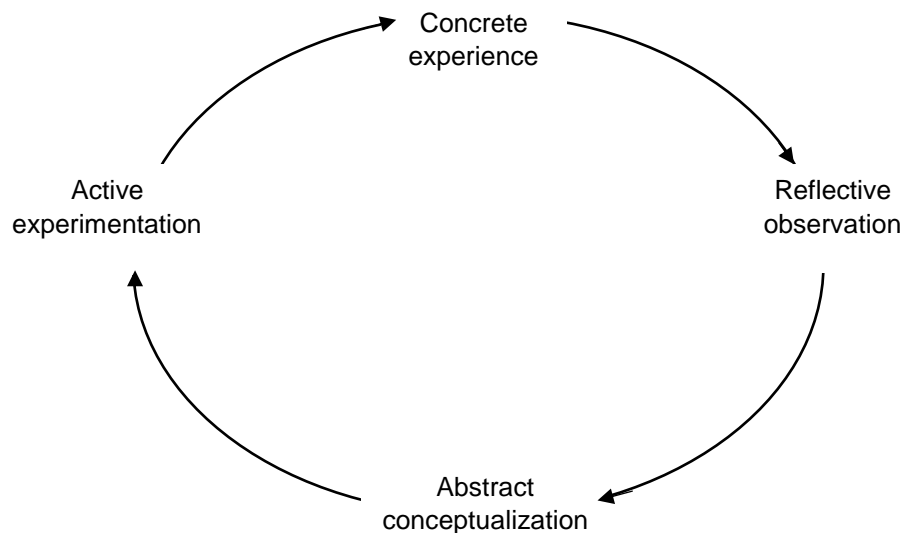


**Figure 3.6:** Kolb's (1984) learning cycle

These criticisms help to explain why experiential learning process can be used to explain some of the underlying processes of coaching. If one assumes that experiential learning provides an explanation of how individual's learn from experience however that not all individuals are effective at naturally transitioning through the stages in the theory of their own accord. In these cases, coaching is a useful tool that proactively encourages individuals to maximise their learning from experience. For example, coaching provides a structured approach to actively encourage the individual to reflect on their experience. For example, by using Whitmore's (1992) GROW model as a framework for the coaching sessions, the stage of exploring the reality (the R in GROW) involves asking the coachee probing questions to encourage the coachee to reflect on their experiences in relation to the goal. In addition to encouraging reflection, coaching also encourages coachees to develop abstract hypotheses during the coaching process. For example, the coachee may reflect on why he or she believes a presentation was not delivered as effectively as intended, discuss what could have been done

differently and how this could have affected the outcome. This final stage of exploring an alternative outcome is a form of the abstract hypotheses stage in the ELT cycle. Furthermore, coachees are encouraged to commit to active testing through the form of action planning (for example, selecting solutions from the abstract hypotheses to put into practice). By implementing action plans, coachees engage in the final stage of concrete experience. Coaching also provides a tool to help individuals to deal with the challenge posed by Vince (1998) whereby unconscious processes may discourage learning from experience. The role of the coach is to challenge the coachee when he or she resorts to habitual behaviours that are not beneficial in the process of achieving the goal. By challenging and exploring these habitual behaviours, the underlying or unconscious processes that may be stopping the individual from learning from experience may come to light and can then be addressed.

In these ways, the coaching process encourages the coachee to move through all stages of the experiential learning cycle. This idea is supported by research regarding other development interventions that actively encourage reflection, such as the study by DeRue, Nahrgang, Hollenbeck & Workman (2012) who found that the use of after event reviews (that encourage reflection) were positively linked to leadership development and Gün (2010) who found that reflective practice could be improved following focused reflective training

***Psychological fidelity****.* A challenge in instructional forms of learning and development (e.g. training) is the transfer of newly acquired skills to the workplace (Fitzgerald, 2001). Positive transfer of training is defined as the degree to which trainees effectively apply the knowledge, skills, and attitudes gained in a training context to the job (Newstrom, 1984; Wexley & Latham, 1981). For transfer to have occurred, learned behaviour must be generalized to the job context and maintained over a period of time on the job (Baldwin & Ford, 1988). However, the general message from the literature demonstrates that much of the training conducted in organizations fails to transfer to the work setting (e.g. Goldstein, 1986: Mosel, 1957; Wexley & Latham. 1981).

One factor that has been investigated as an influence on training transfer is the degree to which the training was identical to the workplace. When considering similarity between training and the work environment, the foci of early research has generally been either the physical training environment and/or the similarity in the nature of the tasks being completed. For example, research has supported a generalization gradient in which transfer is more likely with *near transfer tasks*, which are highly similar to the learning tasks (e.g. working on a small jet engine

in training and a larger one in the field), and less likely as one moves to *far transfer*, in which the tasks and situations in the learning situation are quite different from the transfer setting (e.g. applying principles of electricity from training to troubleshooting complex mechanical problems under extreme time pressures; Royer, 1979). Van der Locht, van Dam and Chiaburu (2013) suggest that similarity in stimuli is important since it increases the relevance of the training situation; moreover, when back at work, it will help trigger employees' effective responses, matching those developed in the training. Van der Locht et al. (2013) state that similarity in response is important because it guarantees that the skills that are practiced in training are relevant and necessary for successful performance at work. These concepts draw on the identical elements theory (Thornidke & Woodworth, 1901) and the relevance to the training room has been confirmed in the research (i.e. Axtell, Maitlis & Yearta, 1997; Holton, Bates & Ruona, 2000; Lim & Morris, 2006; Rodriguez & Gregory, 2005; Yamnill & McLean, 2005).

The concept of identical elements is simple, however when considered in the context of management training, identical elements becomes practically challenging to apply. Van der Locht, van Dam and Chiaburu (2013) describe how owing to the complex nature of managers' work situations, full physical similarity might be difficult to obtain. A further reason why obtaining physical similarity in management training may be challenging is because management training often focuses on more variable, open skills, such as interpersonal skills or supervisory competencies. These skills are relevant for many different situations and therefore it is not possible to specify a single correct way in which to act. However, scholars have asserted that in addition to physical similarities, similarity between training and the workplace can also take the form of psychological fidelity. With high psychological fidelity training, employees attach similar meanings to stimuli used in training and found in the organizational context. Furthermore, the training stimuli should elicit similar responses, emotions and decision-making processes in real-life management situations (Baldwin and Ford, 1988; Salas et al., 2012). Research has shown that when the stimuli and response that trainees are subjected to in training are too different from those in real work tasks, the training can have only negligible or even a negative effect on trainee's job performance (Blume, Ford, Baldwin & Huang, 2010; Holding, 1965; Taylor, Russ-Eft & Chan, 2005). Research evidence has also supported the notion that similarity or specificity of the learning environment compared to the work environment enhances transfer (Kozlowski & DeShon, 2004; van der Locht et al., 2013).

Therefore the final process of coaching that explains how coaching impacts positively on behaviour change is psychological fidelity. Coaching creates a learning environment that has high psychological fidelity by focusing on workplace issues that are unique to the coachee; with each coaching session aimed at discussing and 'solving' a particular workplace issue. The coachee experiences clarity about how they can transfer the content of the coaching sessions to their work environment as they attach the same meaning to the stimuli discussed in coaching and the organizational context because these stimuli are the same. As opposed to training, where stimuli and examples have to be generalized across a group of learners, in coaching, the coachees' unique examples are the subject of the learning experience. Accordingly, in the model of coaching processes it is proposed that coaching results in positive improvements in performance and effectiveness by focusing specifically on the coachee's work situation, thereby providing high psychological fidelity.

**Treatment effects: practice factors of coaching**

In the general model of coaching effectiveness shown in Figure 3.4, it is proposed that the treatment effects of coaching could be conceptualized as the processes of coaching described above and practice factors of coaching. These coaching practice factors include a variety of possible tools and techniques that coaches may utilise as part of their coaching practice, which might be considered factors in the practice and implementation of coaching. As with studies of training interventions (e.g. Bell & Kozlowski, 2010), it is reasonable to assume that these practice factors in coaching have some impact on its effectiveness. Such factors therefore represent moderators of the benefits of coaching on the outcome criteria. Based on the review of the literature, three potential practice moderators of coaching effectiveness are detailed here. The influence of these practice moderators will be tested in chapter four. It is acknowledged that there are likely to be many other potential practice moderators in the practice of coaching, a point that will be developed further in the discussion of the meta-analysis findings in chapter four.

*Multi-source feedback.* Multi-source feedback continues to be popular in organizations, with common uses including development, appraisal and personnel decision making (Antonioni, 1996; Brutus & Derayeh, 2002; Brutus et al., 2006; Hedge, Borman, & Birkeland, 2001; Waldman, Atwater, & Antonioni, 1998). The multi-source feedback process generally involves gathering feedback from the employee's supervisor, peers, direct reports and self and sharing this feedback with the employee to facilitate the learning and development process (Dalessio,

1998). The advantages of using multi-source over single source feedback include gaining unique information by combining different rater perspectives (Hedges & Borman, 1995); reinforces the robustness of the feedback by including multiple stakeholder perspectives (Nieminen, Smerek, Kotrba & Denison, 2013) and contributes to increased self-awareness by contrasting self and others perceptions (Borman, 1998; Hazucha, Hezlett, & Schneider, 1993). The evidence on the utility of multi-source feedback has demonstrated a variety of performance benefits. For example, Ilies and Judge (2005) and Johnson (2013) found that both evaluative and objective feedback had significantly positive impacts on task performance.

However, although previous research has shown that multi-source feedback can be an effective method of improving work performance in its own right, the magnitude of the impact of the feedback is limited when the results are simply shared with employees (i.e. Kluger & DeNisi, 1996; Nieminen et al., 2013; Smither, London & Reilly, 2005). For this reason, in conjunction with receiving multi-source feedback, employees may also attend a workshop aimed at interpreting the feedback (Hazucha et al., 1993; Rosti & Shipper, 1998; Seifert, Yukl and McDonald, 2003); or they may be provided with coaching to facilitate the feedback interpretation process (Luthans & Peterson, 2003; Smither et al., 2003) or in some instances coaching and workshop have been combined to aid the understanding of multi-source feedback (Kochanowski, Seifert & Yukl, 2010; Nieminen et al., 2013). By working with a coach to assist in the interpretation of multi-source feedback, employees receive help with coping with negative feedback in a constructive way; help to identify specific areas of improvement from feedback and also to track progress toward developmental goals created as a result of the feedback (Brutus & Derayeh, 2002; DeNisi & Kluger, 2000; Goodstone & Diamante, 1998; Hooijberg & Lane, 2009; Luthans & Peterson, 2003; Smither et al., 2003). The use of coaching can enhance the interpretation of multi-source feedback however the presence of feedback may also enhance the impact of coaching. By integrating multi-source feedback with the coaching process, coaching also benefits from the unique advantages of multi-source feedback mentioned previously such as the unique information from multiple perspectives, robustness of feedback and contribution to increased self-awareness. Therefore, multi-source feedback is proposed as one of the practice factors that can be included in the coaching process and may moderate the effectiveness of coaching.

*Format of coaching.* Coaching is most commonly conducted face-to-face, however the use of alternative formats such as videophone, telephone and internet coaching are also prevalent

(collectively referred to as e-coaching; the use of technology to conduct coaching). Research in the field of health psychology has found that telephone discussion is an effective way of delivering coaching for lifestyle change in older men (Aoun, Osseiran-Moisson, Shahid, Howat & O'Connor, 2011) and for reducing peoples' health risks (Terry, Seaverson, Staufacker & Ginerich, 2010). However, a study by Yan, Wilber and Simmons (2011) found that when compared to telephone-delivered health coaching, face-to-face coaching was more effective at improving exercise performance in high-risk older adults.

Wentz, Nyden and Krevers (2012) demonstrated that internet-based coaching led to improvements in self-efficacy and subjective quality of life in a sample of young people with autism spectrum disorder and/or attention-deficit/hyperactivity disorder. Also focusing on the use of internet mediated development, research has demonstrated the utility of e-mentoring for a variety of outcomes (Ensher, Heun & Blanchard, 2003; Ensher & Murphy, 2007). For example, in a student sample, de Janasz and Godshalk (2013) found that e-mentoring was positively related to a variety of learning outcomes and Kyrgidou and Petridou (2013) found that e-mentoring of a sample of women entrepreneurs had a positive impact on mentees' knowledge, skills and attitudes. Whilst the evidence suggests that developmental support can be effective when provided in a variety of formats, it is proposed that the relational nature of coaching is likely to be more effectively fostered in face-to-face formats. Therefore, the format of the coaching may be a further practice factor that moderates the impact of coaching on outcomes.

*Type of coach*. The final practice factor that is proposed to potentially moderate the impact of coaching on outcomes is the type of coach**.** Coaches may either be external or internal to the coachee's employing organization. Internal coaches are different from managers and supervisors (who may also give performance feedback and suggest ways to improve as part of performance management) because they do not have supervisory responsibilities for the coachee. External coaches are often engaged as consultants to the organization to work with specific employees. Whilst again, there are no published organizational studies examining this practice factor, a study by Sue-Chan and Latham (2004) in an educational context found that students receiving coaching from an external coach achieved significantly higher course grades than students who had been coached by a peer. Students also rated the external coaches as more credible than the peer coaches.

In the context of work, Higgins and Kram (2001) propose that the changing nature of careers are an underlying reason why individuals are likely to need to seek developmental support from outside the organization. As careers become more protean, acquisition of skills and perspectives from outside the employing organization become more critical. This is underscored by Arthur, Khapova and Wilderom (2005) who identify the importance of extra-organizational support (through coaching or mentoring) in career success from the boundaryless career perspective. External coaches have the advantage in this respect of offering the coachee support that is not restricted to the boundaries of the employing organization.

A counter-view from the mentoring literature rather supports the superiority of internal mentors. Haggard, Dougherty, Turban and Wilbanks (2011) suggest that mentors working externally to the mentees organization cannot provide the full range of career assistance functions that an internal mentor could. In particular, the external mentor is unlikely to be able to provide sponsorship, protection or challenging assignments for their mentees. This observation was supported by Murrell, Blake-Beard, Porter and Perkins-Williamson (2008) who suggest that despite the benefits of external mentors, an internal mentor provides a number of functions such as opportunities for exposure, visibility to key management and coaching around political landmines in a way that an external mentor could not. However, it is questionable whether these benefits necessarily transfer to coaching. Unlike mentoring, coaching does not rely on the organizational and career experience and expertise of the coach with respect to the work of the coachee, and so effective achievement of development objectives is not necessarily predicated on knowledge of the internal workings of the organization. The advantages of working with an external coach may therefore outweigh the benefits afforded by an internal coach.

**Learner effects: individual differences.** To further our understanding of learning, training and development, in addition to the influence of treatment effects, the literature has also explored the impact of learner effects on outcomes. Once again, using the literature from the learning, training and development literature as a guide, individual differences have been selected as the learner effect that is likely to moderate coaching outcomes. The relevant literature for personality in general will be discussed next.

*The five factor model of personality.* Why do some individuals thrive developmentally while others falter? Many psychologists suggest that the answer to this question lies in the domain of individual differences and in particular personality. McCrae and Costa (1996) describe

personality as being the profile that shapes the individual's thoughts, feelings and actions. The last 30 years have seen a resurgence in the popularity of personality research, largely due to the advances in relation to the five factor model that have been made by Barrick and Mount (1991), Digman (1990), Goldberg (1993) and McCrae and Costa (1996).

The five factor model has been accepted as the most reliable and valid method of understanding personality (Digman, 1990; Saucier & Ostendorf, 1999), and was derived from factor analysis of self-report and observer ratings of personality descriptors (McCrae & Costa, 1996). The five factor model describes personality in terms of five basic dimensions: neuroticism versus emotional stability; extraversion or surgency; openness to experience or intellect, imagination, or culture; agreeableness versus antagonism; and conscientiousness or will to achieve.  Extraversion is most frequently associated with traits such as being sociable, gregarious, assertive, talkative and active (Barrick & Mount, 1991). Neuroticism generally consists of traits such as being anxious, depressed, angry, embarrassed, emotional, worried and insecure (Barrick & Mount, 1991). Agreeableness is most frequently associated with traits such as being courteous, flexible, trusting, good-natured, cooperative, forgiving, soft-hearted and tolerant (Barrick & Mount, 1991). Conscientiousness consists of traits such as being careful, thorough, responsible, organised, achievement-oriented, hardworking and persevering (Barrick & Mount, 1991). Finally, openness to experience is commonly described with traits such as being imaginative, cultured, curious, original, broad-minded, intelligent and artistically sensitive (Barrick & Mount, 1991).

Over time, research attention progressed from the assessment of the reliability and validity of the five factor model to an examination of whether the five factor model was useful at predicting behaviour. In particular, managers wanted to find reliable and valid methods of aiding their recruitment processes to identify individuals who would be the best candidate for the job. One of the most influential pieces of research in this field is the meta-analysis examining personality as a predictor of a variety of work-based variables by Barrick and Mount in 1991. In this meta-analysis, Barrick and Mount found that conscientiousness was a significant predictor of performance across all occupation groupings and all outcome criterion. When examining job proficiency across occupations, conscientiousness was found to be a significant predictor. Penney, David and Witt (2011) also found conscientiousness to be the strongest and most consistent predictor of performance across all three performance dimensions (task performance; contextual performance and counterproductive behaviour). Barrick, Parks and

Mount (2005) reported that conscientiousness showed the most robust and consistent correlations with job performance across all jobs and settings. Neal, Yeo, Koy and Xiao (2012) sought to investigate the relationship between personality traits and work performance through self-report measurements of personality from 1447 government employees and supervisor ratings of performance and once again they found that conscientiousness was the strongest predictor of individual task proficiency compared to the other personality traits.

The research overall indicates that conscientiousness is a predictor of work performance. However, what of the other traits? Penney et al. (2011) suggest that emotional stability has consistent validities with job performance and counterproductive behaviours although not contextual performance. Huang, Ryan, Zabel and Palmer (2014) sought to meta-analytically investigate the predictive validity of emotional stability in relation to adaptive performance. They found that emotional stability was a significant predictor of adaptive performance although effect sizes were small. Le, Oh, Robbins, Ilies, Holland and Westrick (2011) sought to investigate the curvilinear relationship between conscientiousness and emotional stability and job performance. Their results, based on two different samples, generally supported their expectations of the curvilinear relationships between conscientiousness and emotional stability, and job performance dimensions, including task performance, organizational citizenship behaviour, and counterproductive work behaviours. Le et al. also found that job complexity moderated the curvilinear personality–performance relationships such that the inflection points after which the relationships disappear were lower for low-complexity jobs than they were for high-complexity jobs. This finding suggests that high levels of the two personality traits examined are more beneficial for performance in high- than low-complexity jobs. Barrick et al. (2005) also found that emotional stability relates to overall performance in many if not all jobs. They conclude that based on the empirical evidence, conscientiousness and emotional stability can be considered universal and generalizable predictors of performance (Barrick, Mount & Judge, 2001; Hogan & Holland, 2003; Salgado, 1997; Tett, Jackson & Rothstein, 1991).

Validity evidence in relation to openness, extraversion and agreeableness appears to be mixed, particularly in relation to task performance although this is thought to be dependent on the nature of the job (Penney et al. 2011). In their meta-analysis, Barrick and Mount (1991) found extraversion to be a valid predictor of performance across the occupation groups involving high levels of social interaction (managers and sales). Neal et al. (2012) found that extraversion was negatively related to individual proficiency at work in self-report data of 1447 government

employees. Huang et al. (2014) found that ambition (an aspect of extraversion) was a significant predictor of adaptive performance. For agreeableness and openness, Barrick and Mount (1991) found low correlations across occupation groups. Neal et al. (2012) found that openness to experience and agreeableness had opposing effects on individual proactivity – openness was positively related, whereas agreeableness was negatively related to this dimension. Openness to experience also had opposing effects on the form of work role performance – it was positively related to individual and organizational proactivity but negatively related to team and organizational proficiency. Huang et al. (2014) found no significant relationships between openness and adaptive performance. Barrick et al. (2005) suggest that these three traits are contingent predictors; with their predictive capabilities being dependent on the demands of the job. This idea is supported by Hurtz and Donovan (2000) who suggest that extraversion, agreeableness and openness are nearly as important as conscientiousness and emotional stability at predicting performance for certain job roles.

The research to-date indicates that despite some of the mixed results, the five factor model is a valid predictor of job performance. The strength of prediction appears to vary dependant on the occupations being considered. Overall it can be concluded that personality variables have considerable validities which have been established across several quantitative reviews of hundreds of peer-reviewed studies (Ones, Dilchert, Viswesvaran & Judge, 2007).

As the body of evidence supporting the notion of the five factor model as a useful tool in predicting performance continued to grow, researchers began to examine what other workplace outcomes the five factor model is useful at predicting. Of particular interest here is the work examining the predictive validity of the five factor model on training outcomes. The literature on the five factor model and training can be split into three groups based on the types of criterion being assessed. Firstly the research examining the validity of the five factor model in predicting general training (and in some cases academic) proficiency will be presented. Next the research that examines relationships between the five factor model traits and learning strategies and approaches will be discussed and finally the research investigating the five factor model and motivation to learn will be explored.

*Personality and training proficiency.* In addition to the predictive validity of the five factor model on job performance, Barrick and Mount's 1991 meta-analysis also examined personality and training proficiency. For this criterion, conscientiousness, extraversion and openness were all

valid predictors.  Further evidence supporting the ability of personality traits to predict training outcomes was found by Cellar, Miller, Doverspike and Klawsky (1996) who demonstrated that extraversion, openness and agreeableness all predicted training criteria. Dean, Conte and Blakenhorn (2006) examined relationships between personality dimensions and training performance in a sample of 370 Marines. Training performance was assessed by simulation-based and paper and pencil assessments. In hierarchical regression analysis, Dean et al. found that conscientiousness; extraversion and openness were significant predictors of the simulator performance but were not significantly associated with the performance on the paper and pencil test. The authors discuss their findings in relation to the utility of using personality assessment as a form of selection criteria for who may benefit most from which type of training. Their study suggests that Marines high in conscientiousness; extraversion and openness are likely to perform better in high fidelity training environments. In an academic context, Kappe and van der Flier (2010) examined the utility of the five factor model with a sample of 160 students from a further education institute in the Netherlands. Their key findings were that neuroticism was positively related to academic performance when the assessment conditions were less stressful (i.e. skills training); openness to experience was negatively related to performance when deadlines and team conformance were required and conscientiousness predicted performance on all outcome criteria (skills training; team projects; on-the-job training; thesis and grade point average). Kappe and van der Flier had predicted that extraversion would have a significant positive correlation with performance on team projects however this prediction was not supported.

The predictive validity of conscientiousness on grade point average (GPA) was also confirmed in a study by Komarraju, Karau, Schmeck and Avdic (2011). Additionally, both agreeableness and openness were positively associated with GPA. Mount and Barrick (1998) highlight that the significant positive relationship between conscientiousness and training was more strongly related when the outcome criteria was substantially determined by motivational effort (which they term the 'will do' factor) rather than ability (which they term the 'can do' factor). Studer-Luethi, Jaeggi, Buschkuehl and Perrig (2012) examined whether conscientiousness and neuroticism determined cognitive training performance (training to improve working memory), with 99 Chinese undergraduate students. Studer-Luethi et al.'s (2012) prediction that high neuroticism would be associated with lower training scores overall was not supported as this finding did not reach significance. However they did find that high conscientiousness was significantly related to higher training scores.

*Personality and learning approaches.* For the five factor model and learning approaches, Bakx, Van der Sanden and Vermetten (2002) investigated the relations between personality and three Individual Learning Theory (ILT) variables. ILT's are personal theories that serve as a frame of reference for learning and school related issues in a particular domain. The three ILT variables investigated were social-communicative competence; domain-related learning conceptions and preferred learning situations. The purpose of exploring these relationships was to address the underlying question of whether personality characteristics could predict ILT. Bakx et al. (2002) surveyed a sample of 340 full-time students in the Netherlands. Their results indicate that personality traits were most strongly correlated to self-perceived social-communicative competence. All five traits were significantly related to 'grilling'; all traits except conscientiousness were related to 'being assertive' and 'showing empathy'; extraversion, autonomy and stability were all positively related to 'opening a conversation' and conscientiousness, autonomy and stability were all related to 'structuring a conversation'. Fewer significant relationships were found between personality traits and learning situations. Formal learning situations were positively correlated with autonomy ($r = .22$), agreeableness, emotional stability (both $r = .16$) and extraversion ($r = .13$). No relationships were found between conscientiousness and preferred learning situation. Only a few, relatively weak correlations were found between personality and learning conceptions. Bakx et al. (2002) conclude that the implications of their research are that personality traits are significantly related to two of the three ILT's investigated: self-perceived social competence and favoured learning situations. They propose that these findings have implications for improving vocation education by considering these relations in the design of learning environments.

Closely linked to learning approaches are the concept of self-regulatory learning strategies. Self-regulatory learners are described as learners who set proximal, attainable goals; are learning rather than achievement orientated; understand the various learning strategies appropriate for different tasks and adapt to these accordingly; possess high self-efficacy and are mindful of the outcomes of the learning process (Zimmerman, 1995; Zimmerman & Schunk, 2004). Bidjerano and Yun Dai (2007) examined whether personality traits could predict students perceptions of their self-regulatory learning strategies. In a sample of 219 undergraduate students, Bidjerano and Yun Dai found significant correlations between extraversion and help-seeking ($r = .24$); agreeableness and time management ($r = .18$); agreeableness and effort regulation ($r = .20$); conscientiousness and metacognition ($r = .24$); conscientiousness and organisation ($r = .12$); conscientiousness and elaboration ($r = .18$); intellect and metacognition ($r$

= .25); intellect and elaboration ($r$ = .31); intellect and time management ($r$ = .36) and intellect and effort regulation ($r$ = .23). Medium sized correlations were found between conscientiousness and time management ($r$ = .36); conscientiousness and effort regulation ($r$ = .42) and intellect and critical thinking ($r$ = .34). Grade point average had significant correlations between agreeableness ($r$ = .19); conscientiousness ($r$ = .15); time management ($r$ = .23); intellect ($r$ = .31) and effort regulation ($r$ = .33). Mediated multiple regression analysis demonstrated that effort regulation completely mediated the relationship between agreeableness and conscientiousness and grade point average. Bidjerano and Yun Dai conclude that their findings provide evidence that the self-regulated learning strategies that students employee when learning co-vary to some extent with personality traits. They also suggest that their findings support the notion that self-regulated learning in general may have personality underpinnings. The implications of these findings are that educators should have an awareness of their learners' antecedent characteristics and how this may influence their outcomes.

Chamorro-Premuzic and Furnham (2009) sought to establish to what extent learning approaches and personality traits are related. 852 students completed self-report questionnaires (Study Process Questionnaire (SPQ); Biggs, 1987 and NEO-FFI; Costa and McCrae, 1992). The study process questionnaire classified learners as adopting either a surface approach to learning: where the motive is to meet requirements minimally; a deep approach: where there is an intrinsic motive and interest in what is being learnt and an achieving/strategic approach where the achieving motive is to enhance self-esteem and ego when compared to competition. Chamorro-Premuzic and Furnham found that when all personality traits and learning approaches are simultaneously considered and associations among both sets of measures are accounted for, only openness relates to the learning approaches deep and surface with no other salient associations. In a related area to this research, Chamorro-Premuzic and colleagues (Chamorro-Premuzic, Furnham and Lewis, 2007) examined whether personality traits and learning approaches can account for students preferences on teaching methods. 221 first year undergraduate students completed the NEO-FFI (Costa & McCrae, 1992), the SPQ (Biggs, 1987) and a purpose designed self-report questionnaire measuring preferences on teaching methods. Seven methods were listed with a 10 point Likert preference ratings scale (post-mortems/laboratory classes; small-group tutorials; standard lectures; independent study; clinical/ward teaching; group discussion/seminars and research projects).Correlational analysis showed that the deep approach to learning was significantly correlated with emotional stability

(low neuroticism); openness, agreeableness and conscientiousness. Achieving approach to learning was associated with conscientiousness and agreeableness. Surface learning was associated with neuroticism (low emotional stability), low conscientiousness and low agreeableness. Extraversion was only significantly related to deep strategy and achieving motive. With regards to the analysis of the preferences for learning methods, Chamorro-Premuzic et al. found that the seven teaching methods loaded onto two factors: non-interactive and interactive teaching. Only the interactive teaching factor (which included the methods post-mortems/laboratory classes; small-group tutorials; clinical/ward teaching and group discussion/seminars) was significantly related to personality traits or approaches to learning. Emotional stable, agreeable, open students tended to prefer lab classes, small group tutorials and clinical training whilst conscientious students preferred clinical training and discussion groups. Introverts were more likely to prefer independent study than extraverts. Chamorro-Premuzic et al. also found that students who favoured deep approaches to learning also preferred lab classes, small tutorial groups, clinical training and discussion groups. These findings provide further support for the notion that individual differences are related to the preferred ways in which individuals learn.

*Personality and motivation to learn.* Finally, in relation to motivation to learn, Naquin and Holton (2002) found that extraversion was a significantly positive influence on participant's motivation to train and motivation to transfer knowledge or skills acquired in training to work settings in a sample of 239 private sector employees. The positive effects of conscientiousness and agreeableness on motivation to train and transfer were mediated by work commitment. Naquin and Holton (2002) conclude that motivation to learn is significantly influenced by dispositional variables and therefore organizations that place a priority on the willingness of their employees to continuously learn and apply the learning should be concerned with the dispositional profile of their employees. To further the research that has demonstrated that conscientiousness is related to job and academic performance, Corker, Oswald and Donnellan (2012) sought to identify and model the underlying mediating variables between conscientiousness and academic performance. 347 undergraduate students provided longitudinal self-report personality data (IPIP; Goldberg, 1999) and academic performance. Hierarchical multiple regression analysis showed that conscientiousness positively and significantly predicted academic performance independent of the other personality factors. Structural equation modelling revealed that there was a significant mediated effect of conscientiousness on exam performance through effort. They also found that conscientiousness predicts mastery approach

goal adoption which in turn predicts increased effort and improved performance. Finally, conscientiousness predicted performance approach goal adoption which was also linked to improved exam performance. Therefore, the authors conclude that conscientiousness predicts performance because conscientiousness contributes to setting achievement orientated goals and to engaging in effortful strategies.

The extant literature on the five factor model and training suggests that conscientiousness, extraversion and openness are significant predictors of training proficiency. The five factor model appears to be related to preferred learning approaches which should be taken into consideration when designing training programmes and finally the relationship between conscientiousness in particular and training proficiency may partly be explained by the relationship between this trait and the motivation to learn or underlying goal orientation of the individual. Although the findings in the area of personality and training outcomes are far from conclusive, they indicate that some significant relationships exist that are worthy of further exploration. As a closely related field to coaching, it is a logical step to explore whether some of the relationships identified here in terms of the five factor model and training are present when exploring the five factor model and coaching outcomes. If the five factor model predicts performance at work and it predicts performance in training, then it may well predict performance in other types of learning and development interventions such as coaching.

For those individuals working in the field of personality psychology, the investigation of individual differences as a moderator of outcomes appears common sense. McCrae and Costa (1996) suggest that trait x treatment interactions are commonly accepted among psychologists, however for a reason unknown, not commonly investigated. This thesis takes a step along this path. Based on the evidence detailed above that demonstrates that individual differences can predict performance and training outcomes, investigating personality and coaching outcomes is a natural progression. If we can understand whether coaching benefits some groups of individuals more than others than practical decisions can be made regarding for whom coaching is likely to be most effective.

**Model of individual differences and coaching effectiveness.** The next section of this chapter provides details of the conceptual model which has been developed to explain the predicted relationships between the coachee's individual differences and coaching outcomes. The full

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model is depicted in Figure 3.7. This model will be tested in the empirical study presented in chapter six of this thesis.



**Figure 3.7:** Model of individual differences and coaching effectiveness
Note: BIS – behavioural inhibition systems; BAS – behavioural activation system

The literature presented thus far has demonstrated that dispositional constructs have predictive validity regarding a variety of performance criteria. Because of this it is anticipated that the disposition of the coachee is an important learner effect that will influence the effectiveness of coaching. However, the five factor model does not provide an explanation of why the predicted interaction between disposition and effectiveness is likely to take place. This is not a unique problem in the field of personality research. As Burch and Anderson (2008) identify, while a significant body of evidence has been accumulated to establish personality as a predictor of job performance, future research needs to focus on investigating a wider range of variables and the relationships that may exist between them. To explain the theoretical reasoning behind these predictions, the model depicted in Figure 3.7 shows how the process of goal orientation will mediate the impact of individual differences on perceived coaching effectiveness and subsequent coaching outcomes and how the underlying framework of approach/avoidance motivation or behavioural inhibition and behavioural activations systems mediates the impact of individual differences on goal orientation. The relevant literature will be discussed next.

***Personality: facets of the big five.*** In order to provide a more fine-grained understanding of the influence of individual differences on coaching outcomes, De Young, Quilty and Peterson's (2007) facets of the big five are utilised. The big five aspect scales measure the personality traits in the five factor model, however each of the five factors has been further divided into two sub-traits that capture key aspects of the dimension. These aspects were derived empirically from factor analysis by De Young et al. (2007) of facet level scales from two major five factor instruments: the NEO PI-R (Costa & McCrae, 1992) and the AB5C-IPIP (Goldberg, 1999). The

ten facets of the big five are assertiveness and enthusiasm (extraversion); industriousness and orderliness (conscientiousness); withdrawal and volatility (neuroticism); intellect and openness (openness/intellect) and compassion and politeness (agreeableness).

De Young et al.'s (2007) big five aspects offer a more specific and narrow measure of personality traits that result in a more fine-grained understanding of outcomes (Ones & Viswesvaran, 1996). Hogan and Roberts (1996) note that with personality assessment there is a trade-off between fidelity (i.e. the quality of information) and bandwidth (i.e. the complexity of information obtained). Hogan and Roberts (1996) assert that greater fidelity is achieved at the loss of bandwidth and increased bandwidth comes at the price of fidelity. The debate on fidelity versus bandwidth is not new and Cronbach's (1960) discussion of fidelity versus bandwidth argues that when criterion are complex, complex measures will be needed as predictors. In the case of the theoretical model of individual differences and coaching effectiveness, the anticipated complexity with the interaction between coachee personality and coaching outcomes mean that a narrower bandwidth personality assessment is likely to provide a more suitable assessment of the personality trait domain for this research.

*Goal orientation.* Achievement goals can be commonly defined as the purpose of task engagement. The type of goal adopted is thought to create a framework for how achievement settings are interpreted and experienced (Maehr, 1989). Goals can be viewed as specific, cognitive forms of regulation that provide focus and direction (Elliot & Thrash, 2002). Achievement goals are usually split into a performance goal versus mastery goal dichotomy (Ames & Archer, 1987). Performance goals can be defined as focusing on the demonstration of competence relative to others whereas mastery goals are concerned with competence or mastery of a task (Elliot, 1999). Elliot (1999) has proposed that this dichotomy should be further differentiated, utilising the approach and avoidance motivation framework (to be described later), into a trichotomous framework: mastery, performance approach and performance avoidance goals. This further distinction of the performance goals sees performance approach goals as focused on attaining competence in relation to others whereas performance avoidance goals are focused on avoiding incompetence in comparison to others (Elliot, 1999).

Research by Elliot and Thrash (2002) has explored whether personality is a predictor of achievement goals. They found that extraversion was a positive predictor of mastery goals with neuroticism unrelated to mastery goal adoption. Extraversion was a positive predictor of

performance approach goals and neuroticism was a positive predictor of performance avoidance goal adoption. In their meta-analysis of goal orientation, Payne, Youngcourt and Beaubien (2007) found that openness and conscientiousness were related to mastery goal orientation. As a key element of the coaching process, coachees will be required to formulate their own goals regarding targeted areas of improvement and development. Based on the research to date, it is predicted that coachees will set different types of goals based on their disposition.

This distinction regarding the type of goals which are set is important as theorists have suggested that while all types of goals direct employees towards successful behaviour, they do so in different ways. (Ferris, Rosen, Johnson, Brown, Risavy & Heller, 2011). Ferris et al. (2011) suggest that self-regulatory resources focus an individual's behaviours towards achieving their goals and therefore improving job performance. Furthermore, the nature of the goal (either approach or avoidance) places different demands on these self-regulatory resources. For example, approach goals involve the individual utilising their self-regulatory resources to achieve that goal, whereas avoidance goals involve the individual utilising their self-regulatory resources to block every path that may lead to failure (Schwarz, 1990). Because self-regulatory resources are limited, attempting to focus on multiple paths, as in the avoidance goal example, quickly depletes the resources in comparison to those striving for approach orientated goals. Consequently, avoidance goal orientations negatively impact on performance.

This proposed influence of goal orientation on performance has been explored in the literature. For example, Payne et al. (2007) found that mastery goal orientation had greater predictive validity of job performance than cognitive ability and personality in their meta-analysis. In an educational setting, Payne et al. (2007) found that mastery goal orientation positively predicted both learning and academic performance whereas performance avoidance goal orientation had a negative relationship with learning. Performance approach goal orientation was found to have no relationship to either learning or academic performance. This finding for performance approach goals is contrary to other research which has demonstrated that it is a positive predictor of performance. For example, Dickhauser, Buch and Dickhauser (2011) examined whether achievement after failure differed, based on the trichotomous achievement goals model. They found that achievement after failure was higher for those in the performance approach and mastery goals groups compared to those in the performance avoidance goals group. A further study providing support for the impact of goal orientation on performance was

conducted by Yeo, Loft, Xiao and Kiewitz (2009). Yeo et al. (2009) found that greater accuracy regarding the impact of goal orientation on performance could be measured by measuring performance at the inter-and intra-individual levels. For example, mastery goals were found to positively related to performance at the intra but not inter individual levels. Performance approach positively predicted performance at both levels and performance avoidance negatively predicted performance at the inter-individual level but was not a predictor at the intra-individual level.

This summary demonstrates how research into the relationship between performance and goal orientation has yet to yield conclusive results. This may be due, in part, to some methodological limitations with some of the research in this field. For example, many studies are based in the laboratory and involve measuring performance on artificial tasks. It is likely that the findings of studies such as these will lack comparability with, for example, employees' performance at work. Equally, much of the research also looks at goal orientation in an educational setting which again may not be comparable to the workplace.

*Approach/avoidance motivation.* Approach-avoid temperaments are purported to represent basic tendencies that are rooted in biological bases, to be moderately heritable and relatively stable across the life span (Elliot & Thrash, 2002; Hoyle, 2010; McCrae & Lockenhoff, 2010). Generally speaking, approach or avoidance motivation can be described as a tendency towards, or sensitivity to, either positive or negative information. For example, in approach motivation, behaviour can be either instigated or directed by a desired or positive outcome whereas with avoidance motivation, behaviour is instigated or directed by an undesired or negative outcome (Elliot, 1999).

It has been well documented that whilst personality maybe an effective tool for predicting behaviour, the processes through which personality predicts work behaviours are less clear (Barrick & Mount, 2005) with personality researchers arguing that proximal motivational constructs, such as approach/avoidance motivation, are the primary mechanism through which personality affects work behaviours (Barrick & Mount, 2005; Judge & Ilies, 2002). For example, Elliot and Thrash (2002) gained factor analytic support for their propositions that approach and avoidance motivations load onto several basic personality dimensions. Specifically that extraversion loaded onto approach motivation and neuroticism loaded onto avoidance motivation.  Evidence has consistently indicated that extraversion is positively correlated with

positive affect (Lucas & Fujita, 2000; Watson, 2000; Wilt & Revelle, 2009). Research by Ferris, Rosen, Johnson, Brown, Risavy and Heller (2011) has demonstrated that approach/avoidance motivation mediates the core self-evaluation – job performance relation, offering further support for the importance of understanding approach/avoidance in the context of personality and performance. Johnson, Chang, Meyer, Lanaj and Way (2012) demonstrated that approach/avoidance motivation predicts goal orientation, attitudes and behaviour and that approach/avoidance motivation uniquely predicts job performance. Furthermore, Kaplan, Bradley, Luchman & Haynes (2009) meta-analytically examined the influence of positive and negative affect (the manifestations of approach/BAS and avoidance/BIS) on performance. They found a significant positive association between positive affect, overall performance and organizational citizenship behaviours and a significant negative association between negative affect, overall performance and organization citizenship behaviours. Kaplan et al. (2009) also found a significant positive association between negative affect and counterproductive work behaviours, withdrawal behaviours and workplace injuries. Considered together, this evidence suggests that approach/avoidance motivation is related to personality and goal orientation and is a predictor of performance.

The approach/avoidance motivation can be explained by Gray's theory of brain functions and behaviour. Gray (1972, 1981) argues that the avoidance motivation system is called the behavioural inhibition system (BIS) and that this physiological mechanism controls the experience of anxiety in response to anxiety-relevant cues. The BIS is sensitive to signals of punishment, non-reward and novelty and inhibits behaviour that may lead to negative or painful outcomes. Consequently, BIS activation may cause inhibition of behaviour changes in relation to goal achievement. In terms of personality, greater BIS sensitivity should be reflected in greater proneness to anxiety and therefore should be associated with neuroticism and its facets.

Gray (1981; 1987; 1990) refers to approach motivation systems as behavioural activation systems (BAS). The BAS is said to be sensitive to signals of reward and non-punishment and activity in this system causes the person to activate activity in relation to goal achievement. Gray (1977; 1981; 1990) proposes that the BAS is responsible for the experience of positive feelings such as hope, elation and happiness and therefore BAS should be associated with extraversion and its facets.

In response to the lack of a satisfactory scale to measure BIS and BAS, Carver and White (1991) developed a scale in which BAS is further refined into three separate sub-scales. Carver and White categorise BAS as either reward responsiveness; drive or fun-seeking. Reward responsiveness indicates the degree to which an individual is motivated, energized and excited by a desired reward. A high level of reward responsiveness would indicate increased persistence when a reward is achieved or if things are going well. High BAS reward responsiveness individuals tend to be determined individuals with the ability to control impulses and to focus on future oriented-planning. They also tend to experience excitement towards future rewards (Segarra, Poy, Lopez and Molto, 2014). Drive is the degree to which an individual instigates and persists with action to achieve a desired outcome. High BAS drive individuals tend to be competitive and will go all out to achieve their goals. Finally, fun-seeking is the degree to which an individual will instigate a behaviour purely because the outcome is perceived as fun or enjoyable. High BAS fun-seeking individuals are open to new experiences and have notably low constraint (Segarra et al., 2014).  Research by Segarra et al. (2014) has explored associations between BIS/BAS and the five factor model at the trait and facet level. Segarra et al. (2014) found that BIS was significantly associated with neuroticism and extraversion was significantly associated with BAS drive, reward and fun-seeking as expected. However, at the facet level, assertiveness (a facet of extraversion) was significantly associated with drive and fun-seeking but not reward.

Based on the extant literature linking BIS and BAS to performance and the theoretical utility of BIS and BAS at understanding how personality influences behaviour, it is anticipated that the BIS and BAS will each uniquely mediate coaching outcomes. BIS is likely to be negatively associated with perceived coaching effectiveness and subsequent coaching outcomes. The higher levels of anxiety and cautious nature of high BIS individuals is likely to lead to inhibition of action in relation to the potential changes in behaviour needed to achieve coaching goals. BAS reward responsiveness is likely to be positively associated with perceived coaching effectiveness and subsequent coaching outcomes as the highly focused, enthusiastic and determined nature of high reward responsiveness individuals is likely to be positively associated with maintaining focus on coaching goals and pursuing actions in relation to achieving coaching goals. BAS drive is also likely to be positively associated with perceived coaching effectiveness and subsequent coaching outcomes as the competitive, driven nature of individuals high on BAS drive is likely to energise the individual to pursue changes discussed in coaching and encourage persistence in working towards achieving goals. Finally, it is anticipated that BAS

fun-seeking will also be positively associated with perceived coaching effectiveness and subsequent coaching outcomes as the open-minded nature of individuals high in fun-seeking is likely to lead to greater openness in relation to exploring potential solutions to problems and generating creative problem-solving.

It is also hypothesised that the influence of BIS/BAS will be mediated by goal orientation. Elliot and Thrash (2002) provide an integrative view of approach/avoidance motivation, BIS/BAS, personality and goal orientation. They provide evidence that suggests that performance approach and mastery goal orientation are predicted by extraversion and BAS whereas performance avoidance goal orientation is predicted by neuroticism and BIS. Due to the centrality of goals in coaching, goal orientation is posited as an important influence on coaching outcomes and therefore positioned as an additional mediator.

Based on the extant literature, a series of proposed multiple mediator models are presented in relation to the specific predicted relationships between individual differences, BIS/BAS, goal orientation and coaching outcomes. Conscientiousness and intellect have not been shown to significantly related to BIS/BAS, therefore it is anticipated that the impact of conscientiousness and intellect on coaching outcomes will be mediated by goal orientation only. These models will be explored next.
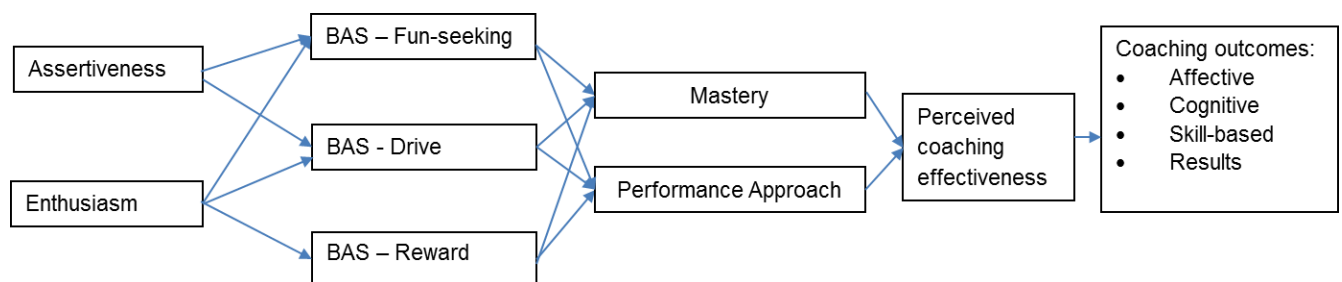


**Figure 3.7a:** Model of individual differences and coaching effectiveness: facets of extraversion
Note: BIS – behavioural inhibition systems; BAS – behavioural activation system

**Enthusiasm.** Enthusiasm is characterised by a feeling of energetic interest in a particular subject or activity. Highly enthusiastic individuals generally experience an eagerness to be involved; tend to experience high levels of cheer; vivaciousness and sociability (De Young et al., 2007). Enthusiasm is considered to be important in the context of coaching effectiveness as in order to engage positively with the coaching intervention, the coachee needs to have a sociable nature, be comfortable disclosing personal details to the coach and have an interest and

eagerness to change their behaviour or develop. Therefore enthusiasm is a logical indicator of individual coachee characteristics that are likely to be important for generating successful coaching outcomes. Further to the research by Segarra et al. (2014), it is predicted that enthusiasm will be positively associated with BAS fun-seeking, drive and reward which will in turn be positively associated with mastery and performance approach goal orientation, perceived coaching effectiveness and coaching outcomes. Figure 3.7a depicts the proposed relationships.

**Assertiveness.** The second facet of extraversion is assertiveness. Assertive individuals tend to be confident, self-assured and positive. They may take leadership roles, tend to share their opinion readily and are quick to act (DeYoung et al., 2007). Research has previously demonstrated positive associations between extraversion, pre-training self-efficacy and training outcomes (Esfandagheh, Harris & Oreyzi, 2012). Associations of this nature could be explained, in part, by the higher levels of self-assurance and confidence experienced by highly assertive individuals. Individuals high on assertiveness are likely to experience more self-confidence on entering the coaching intervention, be comfortable sharing their views and opinions throughout the coaching process and be likely to act on the action points agreed during the coaching process. Further to the research by Segarra et al. (2014), it is predicted that assertiveness will be positively associated with BAS drive and fun-seeking only, which will in turn be positively associated with mastery and performance approach goal orientation, perceived coaching effectiveness and coaching outcomes. Figure 3.7a depicts the proposed relationships.
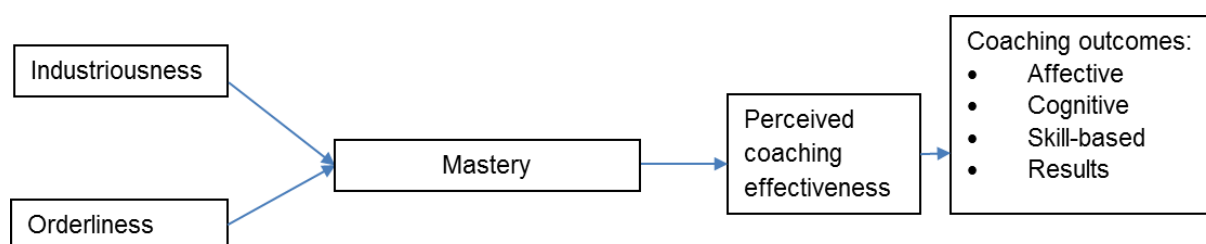


**Figure 3.7b:** Model of individual differences and coaching effectiveness: facets of conscientiousness

**Industriousness.** Industriousness refers to the characteristics of hard-working and diligence. Industrious individuals tend to avoid procrastination; follow through with plans; work through tasks quickly; are focused and tend to avoid distractions. Industriousness is anticipated to be an important learner effect influencing coaching outcomes, as industrious coachees will be more likely to act promptly in order to carry out agreed actions, they are more likely to work hard and persist to achieve challenging goals, they are less likely to procrastinate over tasks, less likely to

become distracted and therefore will remain focused on working towards agreed coaching goals and objectives. Further to the research by Payne, Youngcourt and Beaubien (2007), it is predicted that industriousness will be positively associated with mastery goal orientation, which in turn will be positively associated with perceived coaching effectiveness and coaching outcomes. Industriousness is not anticipated to be related to BIS/BAS. Figure 3.7b depicts the proposed relationships.

**Orderliness.** The second facet of conscientiousness is orderliness and refers to being organized and systematic. Orderly individuals tend to be tidy; follow a schedule; be detail focused and rule conscious. Orderliness is anticipated to be an important learner effect influencing coaching outcomes as orderly individuals are more likely to follow through with their commitments made to the coach regarding their actions due to their rule conscious nature. They are more likely to be able to effectively manage any required changes in behaviour due to their organized nature and ability to manage their time. They are also more likely to commit whole heartedly to the coaching process and any agreed changes due to their desire to follow the rules and their high attention to detail. Further to the research by Payne et al. (2007), it is predicted that orderliness will be positively associated with mastery goal orientation, which in turn will be positively associated with perceived coaching effectiveness and coaching outcomes. Orderliness is not anticipated to be related to BIS/BAS. Figure 3.7b depicts the proposed relationships.
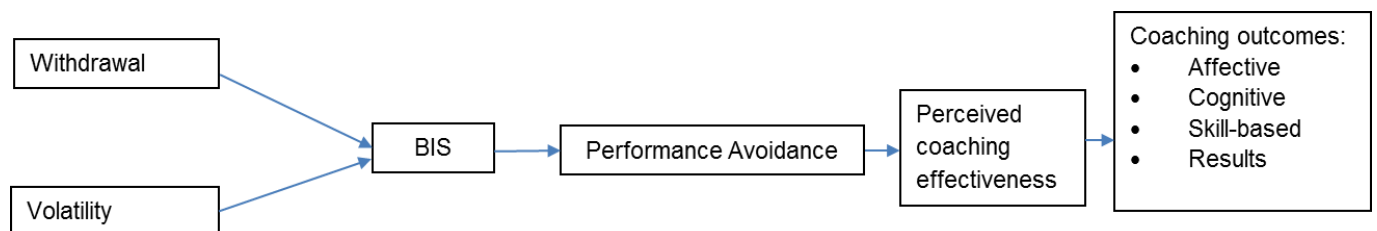


**Figure 3.7c:** Model of individual differences and coaching effectiveness: facets of neuroticism

**Withdrawal.** Withdrawal is characterised by feeling blue; down or depressed; experiencing self-doubts and a tendency to worry or become overwhelmed (DeYoung et al. 2007). It is anticipated that high levels of withdrawal are likely to have a negative impact on coaching outcomes as the high levels of anxiety, intrusive thoughts and pessimistic views experienced by high-scorers will limit the degree to which the coachee is able to objectively consider alternative realities and creative solutions to problems. Further to the research by Segarra et al. (2014), it is predicted

that withdrawal will be positively associated with BIS, which in turn will be positively associated with performance avoidance goal orientation which will be negatively associated with perceived coaching effectiveness and coaching outcomes. Figure 3.7c depicts the proposed relationships.

**Volatility.** The second facet of neuroticism: volatility, refers to the outward expression of negative affect. Volatile individuals tend to get angry, irritated and upset easily. They may feel as though their emotions are out of their control, may experience mood swings and lose their composure in challenging situations (DeYoung et al., 2007). It is anticipated that high levels of volatility are likely to have a negative impact on coaching outcomes as highly volatile coachees may find their high sensitivity to negative stimuli, such as challenging feedback from their coach, mean that they react too emotionally in order to gain any learning from the coaching process. Further to the research by Segarra et al. (2014), it is predicted that volatility will be positively associated with BIS, which in turn will be positively associated with performance avoidance goal orientation which will be negatively associated with perceived coaching effectiveness and coaching outcomes. Figure 3.7c depicts the proposed relationships.
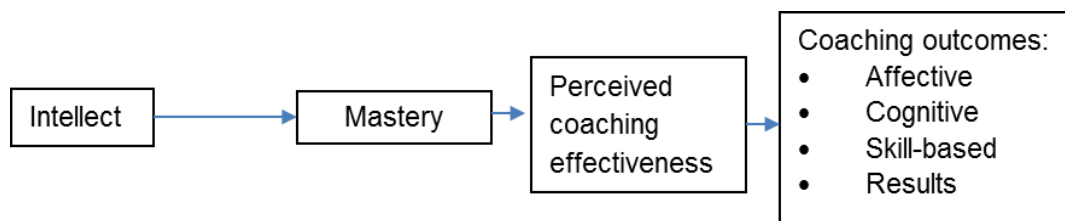


**Figure 3.7d:** Model of individual differences and coaching effectiveness: facets of openness/intellect

**Intellect.** Intellect is a facet of openness/intellect and is characterised by the faculty of reasoning and object understanding, especially with regard to abstract matters. Individuals high on intellect generally exhibit high levels of intellectual engagement; mental agility and quickness; ingenuity and creative ideas (De Young et al., 2007). Research has demonstrated that intellect significantly correlates with training performance (Spengler & Mussel, 2012) and self-rated job performance (Reio & Wiswell, 2000). It has been theorised in the literature that the links between intellect and learning and performance outcomes can be explained by the link between intellect and curiosity, seeking new information and learning new ideas (Arnone, Grabowski & Rynd, 1994; Reio & Wiswell, 2000). A core element of coaching as a learning and development tool is the process of challenging the coachee to critically reflect on their current situation in relation to their desired goal. In order to successfully do this, the coachee needs to

be able to understand hypothetical situations and discussions, engage in complex problem-solving, think quickly in order to provide examples and engage in discussion with the coach and clearly formulate and communicate their ideas to the coach. Therefore, it is anticipated that highly intellectual individuals will have the necessary skills at their disposal to enable them to proactively and productively engage in the coaching process. Further to the research by Payne et al. (2007), it is predicted that intellect will be positively associated with mastery goal orientation, which in turn will be positively associated with perceived coaching effectiveness and coaching outcomes. Figure 3.7d depicts the proposed relationships.

Three of the facets of the big five have not been included in the model. Openness is not considered to be an important learner effect influencing coaching outcomes. The facet of openness refers to the individual's appreciation of beauty; nature; art and culture and therefore is unlikely to be an important influencer of the effectiveness of coaching at achieving learning and performance outcomes. The two facets of agreeableness: compassion and politeness have also not been included. Compassion refers to the degree of sympathy and concern shown for the needs of others and politeness refers to the consideration and manners including demonstrating respect for authority. It is not anticipated that these facets relate specifically to learning and development from coaching therefore they have not been included in the model.

**Conclusion**

In this chapter the extant theoretical developments in the field of workplace coaching have been reviewed. This review has demonstrated that a coaching effectiveness theory is lacking and as a consequence there is a poor understanding of the factors that are likely to make coaching more or less effective. In order to fulfil a primary aim of this doctoral research, it is essential to formulate a conceptual model that explains the processes by which coaching may improve outcomes. Only this will enable an improvement in the knowledge of coaching in order to help coaches, coachees and organisations to begin to understand when coaching is more or less effective to enable them to tailor learning and development solutions. To achieve this, both the treatment and learner effects of coaching were reviewed. The treatment effects of coaching were further split into the processes of coaching and the practice moderators of coaching. It is proposed that the treatment effects of coaching are goal setting, experiential learning and psychological fidelity. Although not directly tested in this thesis, these variables are controlled for during the main intervention study presented in chapter six. The three practice moderators discussed in this chapter were the use of multi-source feedback, the format of coaching and the

type of coach. These practice moderators are explored empirically in the next chapter in this thesis. Next the learner effects of coaching were presented. Based on the extant literature, the five factor model of personality was explored in detail. Previous research has demonstrated that these variables have strong predictive validity in relation to job performance and also predictive validity in relation to training proficiency. Finally, a conceptual model was presented that proposed that the predicted relationships between individual differences and coaching outcomes can be explained by the concepts of goal orientation and approach/avoidance motivation. This full model will be tested in the intervention study described in chapter six in this thesis. Before this, it is necessary to explore more thoroughly whether coaching works. Chapter two challenged the assumption often adopted in research that coaching works. Instead it was proposed that the existing literature does not clearly evidence this. At the start of this chapter, it was requested that the reader temporarily assume that coaching does work in order for the potential processes which may influence effectiveness to be explored. However, before proceeding any further in exploring these processes, it is first essential to gain a clearer understanding of whether coaching is effective and to adequately answer the question: does coaching work? The next chapter will address this research aim.

# CHAPTER FOUR

## The Effectiveness of Workplace Coaching: A Meta-analysis of Learning and Performance Outcomes from Coaching

## Chapter Summary

This study presents the first empirical study of this doctoral thesis: a meta-analysis synthesizing the existing research on the effectiveness of workplace coaching. Using the framework of potential outcomes from coaching in organizations outlined in chapter two, coaching effectiveness is examined meta-analytically ($k = 17$). The analyses indicated that coaching had positive effects on organizational outcomes overall ($\delta = 0.36$), and on specific forms of outcome criteria (skill-based $\delta = 0.28$, affective $\delta = 0.51$; individual-level results $\delta = 1.24$). Moderation by a number of coaching practice factors (use of multi-source feedback; type of coach; coaching format; longevity of coaching) was also examined. The analyses of practice moderators indicated a significant moderation of effect size for type of coach (with effects being stronger for internal coaches compared to external coaches) and use of multi-source feedback (with the use of multi-source feedback resulting in smaller positive effects). No moderation of effect size by coaching format (comparing face-to-face, with blended face-to face and e-coaching) or duration of coaching (number of sessions or longevity of intervention) was found. The effect sizes give support to the potential utility of coaching in organizations and address the first research question of this thesis: 'Is workplace coaching effective?'

## Introduction

Is workplace coaching effective in terms of delivering individual learning and development, and improvements in performance and results for organizations? In chapter two, it was argued that despite the huge growth in the use of coaching as a strategy for employee learning and development (ICF, 2012), there remains a paucity of scientific evidence examining its benefits for organizations, coupled with a generally poor specification of the types of outcomes that can be expected from coaching. In the study reported in this chapter, a meta-analysis of the effects of coaching on performance, and other learning and development outcome criteria is presented. Furthering the literature presented in chapter two, moderators of these effects are also examined, focusing on the techniques and features of specific coaching interventions in order to explore what elements of practicing coaching my influence effectiveness. This systematic review of studies evaluating the benefits of coaching in organizations advances the literature in

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three main ways. First, the problems of criterion specification in the coaching literature are addressed by meta-analytically examining the framework of coaching outcomes proposed in chapter two and shown in Table 4.1. Second, unlike previous studies (e.g. Theeboom et al., 2014) the effectiveness of workplace coaching is clarified specifically by focusing the analyses exclusively on organizational (and not general or educational) samples, closing an important empirical gap in the field. Finally, a number of practice moderators of the effectiveness of coaching are examined, analyses of which have important implications for practitioner coaches concerning the effectiveness of specific coaching tools and techniques.

**Hypotheses Development**

Based on the literature presented in chapters two and three of this thesis, a series of hypotheses are presented below that will be tested meta-analytically in this study.

Building on the existing criterion frameworks in the training, learning and development literature, it was proposed in chapter two that coaching could be expected to produce outcomes at the affective, cognitive, skill-based and results levels, as shown in Table 4.1. Given its role as a learning and development intervention, coaching is expected to influence all of the proposed evaluation criteria. However, in the meta-analysis, it was only possible to test effects of coaching on affective, skill-based, and individual-level results outcomes, a point that will be returned to in the discussion of findings.

**H4.1:** Coaching will demonstrate positive effects for affective, skill-based and individual-level results outcome criteria.

**Research design.** Alongside the nature of coaching outcome criteria, a further methodological consideration for studies examining the effects of coaching is the research design employed to measure those criteria. Within-subjects research design has frequently been utilised by other researchers in the field of training evaluation (e.g. Dierdorff, Surface & Brown, 2010; Franke & Felfe, 2012; Patrick, Smy, Tombs & Shelton, 2012). Effect sizes in within-subjects designs represent the differences between measurements of criteria taken before and after the coaching has taken place (with varying duration of time between measurements depending on the number and schedule of coaching sessions). An alternative design is the between-subjects design (e.g. Ayres & Malouff, 2007; Holladay & Quiñones, 2003; Neal, Godley, Kirkpatrick, Dewsnap, Joung & Hesketh, 2006; Orvis, Fisher & Wasserman, 2009). In these studies, effect

sizes represent the differences between control and experimental (i.e. coaching) groups measured after the coaching has taken place.

| Outcome Criteria | Description | Measurement Methodology |
| --- | --- | --- |
| Affective outcomes | Attitudes and motivational outcomes (e.g. self-efficacy; well-being; satisfaction). | Self-report questionnaires |
| Cognitive outcomes | Declarative knowledge; procedural knowledge; cognitive strategies (e.g. problem-solving). | Recognition and recall tests |
| Skill-based outcomes | Compilation and automaticity of new skills (e.g. leadership skills; technical skills; competencies). | Behavioural observation in the workplace (e.g. multi-source feedback questionnaire) |
| Results | Individual, team and organizational performance | Financial results; objective or goal achievement; productivity |

**Table 4.1:** Framework of coaching outcomes and summary of proposed coaching evaluation criteria.

In this meta-analysis, a position is adopted that views these two methodologies (within-subjects and between-subjects) as both representing acceptable and robust designs for studies of coaching outcomes. Therefore, only studies that adopt one or other of these designs are included in the meta-analysis. For analytic completeness, the effect size of coaching in studies that adopt each methodology are compared. In their previous meta-analysis, Theeboom et al. (2014) found stronger effects for within-subjects designs compared to between-subjects designs, and speculated that this may be due to the increased level of control over potential bias and confounds in between-subjects designs, reducing the magnitude of effects compared with within-subjects designs. For example, inclusion of control groups allow for control of the natural maturation of participants over time and selection effects in sampling. Following this reasoning, it is predicted that:

**H4.2:** Coaching will demonstrate stronger positive effects on overall outcomes in studies using within-subjects research designs compared to between-subjects designs.

**Practice Moderators of Coaching Effectiveness.** In addition to the meta-analyses of the effectiveness of coaching in relation to specific criteria, the scope of the study is further extended by examining potential practice moderators of coaching effectiveness. There are a variety of possible tools and techniques that specific coaches may use, which might be considered method factors in the practice and implementation of coaching. As with studies of training interventions (e.g. Bell & Kozlowski, 2010), it is reasonable to assume that these method factors in coaching have some impact on its effectiveness. Such factors therefore represent moderators of the benefits of coaching on the outcome criteria. The literature in relation to three coaching method factors (use of multi-source feedback; coaching delivery format; internal versus external coach) was explored in chapter two. These three coaching method factors are explored analytically in the study presented in this chapter, along with longevity of coaching, in order to assess whether they moderate the benefits of coaching. These moderators were selected based on their coverage in the literature on coaching and because the literature search yielded studies that permitted their analyses. However, it is acknowledged that these are not the only potential practice moderators in the practice of coaching, a point that is developed further in the discussion of findings.

*Multi-source feedback.* Given that the purpose of coaching is to facilitate self-insight and reflection, it seems logical that combining coaching with multi-source feedback is likely to lead to a greater impact on outcomes than coaching alone. Moreover, the discursive exploration that comes from coaching is likely to represent a more effective presentation of the multi-source feedback than simple written results, further enhancing the benefits to the coaching intervention. It is hypothesized that:

**H4.3:** Coaching utilising multi-source feedback as part of the coaching process (rather than solely as an outcome measure) will demonstrate a larger effect size than coaching without multi-source feedback.

*Format of coaching.* The literature presented in chapter two in relation to the format of developmental interventions, when taken together suggest the developmental support can be effective when provided in a variety of formats. However, there are no studies that directly compare delivery formats for workplace coaching. Indeed studies often combine approaches such as telephone and face-to-face, such that the format of the coaching may be considered mixed method or 'blended' format. (e.g. Bozer & Sarros, 2012). In chapter two, the importance

of the dependence of coaching on the formation of a helping relationship, which must be established without a priori foundations was emphasized (i.e. there is no existing relationship or power or status dynamic on which to build). It is therefore proposed that the relational nature of coaching is likely to be more effectively fostered in a face-to-face personal environment than in e-coaching formats. Studies in this meta-analyses enabled comparison of face-to-face with blended formats (which all comprised a mixture of face-to-face and telephone coaching). It is therefore hypothesized:

**H4.4:** Face-to-face coaching will demonstrate a larger effect size than blended (i.e. blending face-to-face with telephone coaching).

*Type of coach.* Once again, the influence of the impact of the type of coach on effectiveness has yet to be explored in the literature. However, based on the discussion presented in chapter two, It is proposed that compared to those working with internal coaches, coachees who receive coaching from an external coach may feel more confident in the wider credibility and perspective of the coach, and also that the coaching is more likely to be confidential. Releasing development from the boundaries and constraints of organizational politics and barriers may also be beneficial in working through development objectives. In combination, these factors are likely to have a positive impact on the outcomes of the coaching. It is hypothesized that:

**H4.5:** Coaching provided by an external coach will demonstrate greater effect sizes than coaching provided by an internal coach.

*Coaching schedule.* Research examining the effects of the number of coaching sessions or the overall longevity of coaching interventions is limited. This is despite calls to address these questions (e.g. Smither, 2011). Theeboom et al. (2014) tested for the moderation of the number of coaching sessions in their meta-analysis on coaching and found that a greater number of coaching sessions did not significantly impact on outcomes. Theeboom et al. propose that this counterintuitive effect may be due to individuals with less serious or less complex issues needing fewer coaching sessions and experiencing more positive effects of coaching than individuals with more serious or complex issues. These findings are consistent with the mentoring literature. Ensher, Thomas and Murphy (2001) found that the longevity of the mentoring relationship had a small but significant association with social support, but found no relationships with vocational support, role modelling support, reciprocity (i.e. level of give and

take between mentor and mentee), satisfaction with mentor, job satisfaction, perceived career success. A possible explanation for this is that the mentor themselves (i.e. their success and expertise) is more important than the longevity of the relationship (Tonidandel, Avery & Phillips, 2007).

Notably, the above studies tested only for linear effect of coaching schedule variation (number of sessions and longevity of the relationship). This would prevent detection of non-linear relationships, which may occur if, for example, the impact of number of sessions or longevity plateaus after a certain point. The weight of the research evidence suggests on balance that coaching schedule does not have an impact on coaching outcomes, but nevertheless moderation was tested for (including for curvilinear effects) in the analyses. Given that no effects were anticipated, no hypotheses have been set regarding these moderation analyses.


**Method**


**Literature Search**

A range of search strategies were utilised to identify relevant published and unpublished studies (including doctoral dissertations). Firstly, various electronic databases were searched including ProQuest, EBSCO, Emerald Full Text, JSTOR Business, SAGE Journals Online, Science Direct, SwetsWise, Taylor and Francis, Wiley Online Library and Oxford Journals. The following search terms were used: (*coaching*) and (*effectiveness* or *outcome* or *impact* or *influence* or *evaluation*). In addition to this database search, frequent contributors to coaching research literature were contacted directly by e-mail to ensure that any unpublished data or work in progress were included in the meta-analysis. Finally, a manual review of the reference lists of all of the articles identified in the database search and also the reference list of all relevant reviews was completed. This initial search identified a total of 54 studies.


**Criteria for Inclusion**

To be included in the meta-analysis, studies had to meet six criteria. First, the study had to examine workplace coaching effectiveness (i.e. studies in which coaching was provided with the objective of generating affective; cognitive; skill-based or results outcomes at work). Studies were included if they adequately described coaching activity (i.e. one-to-one development intervention based on a coach-coachee relationship) in a work context, and evaluated that activity in terms of its effectiveness. Studies that measured the impact of coaching on non-work

outcomes (such as exercise or healthy eating) were excluded, as were studies where coaching was provided by a line manager. Secondly, only studies that evaluated coaching using the within- and between-subjects designs reviewed earlier were included. Thirdly, studies had to have been conducted within an organizational setting, to ensure all participants were employed working adults. Fourthly, studies needed to report sample sizes. Fifthly, a $d$ statistic or other statistic (e.g. means and standard deviations) that could be converted into a $d$ statistic must have been reported between coaching and the outcome variable. Finally the dependent variable or coaching outcome had to be measured at the individual level of analysis.

**Data Set**

Out of the 54 studies identified in the literature search, 17 met the inclusion criteria ($n = 2267$ individuals). The average sample size of these studies was 133 with a range from 14 to 1361. Seven studies were conducted in the United States; two in the United Kingdom; three in Australia, two in Norway; one in Egypt; one in Israel; and one in Denmark. The studies were conducted in different organization types and industries including service, manufacturing, construction, and public/government sectors. Occupations of participants were varied, however, the majority held senior management ($k = 5$, $n = 1527$) or management roles ($k = 5$, $n = 326$). Other occupations were nurses ($k = 1$, $n = 120$); high school principals ($k = 1$, $n = 8$); teachers ($k = 1$, $n = 44$); construction foremen ($k = 1$, $n = 51$) and various occupations within single studies ($k = 2$, $n = 69$). The earliest study was reported in 1997, the other studies were reported after 2003 (2003 = 2 studies; 2005 = 2 studies; 2006 = 1 study; 2007 = 1 study; 2009 = 3 studies; 2010 = 4 studies; 2011 = 1 study and 2012 = 2 studies). All studies included in the meta-analysis are summarized in Table 4.2 and listed in the references marked with asterisks (*).

**Description of Variables**

All useable studies were coded on a number of specific variables including source of study, sample size, year of publication, occupation of coachee and organizational context. In addition, a coding scheme was developed to code for the moderators highlighted in the hypotheses. Firstly, research design was coded for (i.e. between-subjects design, 14 studies; within-subjects design, 3 studies). In between-subjects studies outcome data was collected for all participants at time 1. The coaching group then received the coaching intervention while the control group received no coaching. Outcome data was then collected for all participants at time 2. Between-subjects studies compared the change in outcomes from time 1 to time 2 for both groups (e.g. Evers, Brouwers & Tomic, 2006; Kockanowski et al., 2010; Taie, 2011). In within-subjects

studies all participants received coaching and outcomes were recorded before and after the coaching. Within-subjects studies examined the change in outcomes from time 1 to time 2 (e.g. Toegel & Nicholson, 2005; Luthans & Peterson, 2003; Olivero et al., 1997).

Classification of outcome was also coded for in accordance with the model outlined earlier, and summarized in Table 4.1: outcome measures were classified as either affective (e.g. job satisfaction; Luthans & Peterson, 2003) (10 studies); skill-based (e.g. competency skills; Taie, 2011) (10 studies); or results (e.g. productivity; Olivero et al., 1997) (3 studies). All three studies within the results category measured individual-level rather than team-level or organizational-level results. Note that some studies utilised multiple outcome measures falling within different outcome categories. Further, whether coaching was accompanied by multi-source feedback was also coded for. Studies were classified as either utilising multi-source feedback as part of the coaching process (e.g. Smither et al., 2003) or coaching where multi-source feedback was not used (e.g. Bright & Crockett, 2012). Studies that utilised multi-source feedback solely as an outcome measure and not part of the coaching process were included in the latter category as the details of the multi-source feedback were not disclosed to the coachee (e.g. Cerni, Curtis & Colmar, 2010). The coach was coded as either external to the organization (e.g. a consultant as a coach; Grant, Green & Rynsaardt, 2010) or internal to the organization (e.g. Gyllensten & Palmer, 2005). In the instances where an internal coach was used, the coach did not have line management responsibility for the coachee. The coding for coaching format classified coaching as either face-to-face (e.g. Kines, Andersen, Spangenberg, Mikkelsen, Dyreborg & Zohar, 2010) coaching or 'blended' coaching format. Blended coaching format was the category created for any format not solely face-to-face. Studies were grouped in this way due to the small number of studies present that used a format other than traditional face-to-face. Five studies utilised a combination of telephone with face-to-face coaching (Finn, 2007; Grant et al., 2009; Kochanowski et al., 2010; Moen & Skaalvik, 2009; Toegel & Nicholson, 2005;) and one study used a combination of telephone, face-to-face and email coaching (Bozer & Sarros, 2012). Finally, the number of coaching sessions (mean = 5.56; median = 6.00; $SD$ = 3.18; range = 9) and the longevity, in weeks, of the coaching intervention (mean = 18.80; median = 12.00; $SD$ = 13.85; range = 44) were coded. The duration of each coaching session was also coded, however this was not explored further as Table 4.2 shows the duration of coaching sessions was relatively invariant.

| Authors | Sample | Country | Organizational context | Occupation of participants | Outcomes measured | Research design | Coaching technique | Longevity of intervention[1] | Duration of sessions | Number of sessions[2] | Multi-source feedback | Format of coaching | Type of coach |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bozer & Sarros, 2012 | 96 | Israel | Various | Management | Affective Skill-based | Between subjects | Cognitive-behavioural | 15.2 weeks | 30 – 120 minutes | 6-8 | Not specified | Face-to-face, telephone & e-mail | External |
| Bright & Crockett, 2012 | 115 | US | Various | Various | Affective | Between subjects | Not specified | 4 weeks | 30 minutes | 1 | No | Telephone | External |
| Cerni, Curtis & Colmar, 2010 | 14 | US | Education | Principals | Skill-based | Between Subjects | Epstein's constructive thinking programme (1998) | 10 weeks | 60 minutes | 10 | No | Face-to-face | External |
| Evers, Brouwers & Tomic, 2006 | 60 | US | Government Agency | Management | Affective | Between subjects | GROW model (Whitmore, 1992) | 17.3 weeks | Not specified | Not specified | No | Not specified | External |
| Finn, 2007 | 17 | Australia | Not specified | Senior management | Affective Skill-based | Between subjects | Not specified | 12 weeks | 60 minutes | 6 | Yes | Face-to-face and telephone | External |
| Grant, Curtayne & Burton, 2009 | 41 | Australia | Health | Executives & senior managers | Affective Results | Between subjects | Cognitive-behavioural solution focused (Grant, 2003) GROW model (Whitmore, 1992) | 10 weeks | Not specified | 4 | Yes | Face-to-face and telephone | External |
| Grant, Green & Rynsaardt, 2010 | 44 | Australia | Education | Teachers | Affective Skill-based Results | Between subjects | Cognitive-behavioural solution focused (Grant, 2003) GROW model (Whitmore, 1992) | 20 weeks | Not specified | 10 | Yes | Face-to-face | External |
| Gyllensten & Palmer, 2005 | 31 | UK | Finance | Not specified | Affective | Between subjects | Not specified | 34.7 weeks | Not specified | Not specified | No | Face-to-face | Internal |
| Kines et al., 2010 | 51 | Denmark | Construction | Construction foremen | Skill-based | Between subjects | Not specified | 42 weeks | Not specified | 8 | No | Face-to-face | External |

| Authors | Sample | Country | Organizational context | Occupation of participants | Outcomes measured | Research design | Coaching technique | Longevity of intervention[1] | Duration of sessions | Number of sessions[2] | Multi-source feedback | Format of coaching | Type of coach |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kochanowski et al., 2010 | 30 | US | Retail | Store managers | Skill-based | Between subjects | Not specified | 6 weeks | 30-60 minutes | 6 | Yes | Face-to-face and telephone | External |
| Luthans & Peterson, 2003 | 20 | US | Manufacturing | Various | Affective Skill-based | Within subjects | Not specified | 13 weeks | Not specified | 1 | Yes | Face-to-face | External |
| Moen & Allgood, 2009 | 127 | Norway | Not specified | Executives & managers | Affective | Between subjects | Not specified | 52 weeks | Not specified | Not specified | No | Not specified | Not specified |
| Moen & Skaalvik, 2009 | 19 | Norway | Not specified | CEO's | Affective | Between subjects | Not specified | 13 weeks | 60-90 minutes | 7 | No | Face-to-face and telephone | External |
| Olivero et al., 1997 | 31 | US | Health | Management | Results | Within subjects | Not specified | 8.7 weeks | 60 minutes | 8 | No | Face-to-face | Internal |
| Smither et al., 2003 | 1361 | US | Not specified | Senior managers | Skill-based | Between subjects | Not specified | Not specified | Not specified | 2-3 | Yes | Face-to-face | External |
| Taie, 2011 | 120 | Egypt | Health | Nurses | Skill-based | Between subjects | Not specified | Not specified | Not specified | Not specified | No | Face-to-face | Internal |
| Toegel & Nicholson, 2005 | 89 | UK | Finance | Senior managers | Skill-based | Within subjects | Not specified | 39 weeks | 90 minutes | 2 | Yes | Face-to-face and telephone | External |

**Table 4.2:** Summary of coaching effectiveness studies included in the meta-analysis.

Note: [1]Where the longevity was specified in months, this was converted to weeks based on an assumption of average 4.33 weeks per month. For the analyses, if a range of longevity was reported, the mid-point of the range was coded; [2]Where a range of number of sessions was reported (e.g. 6-8), the data was coded as the midpoint of the range (e.g. 7).

**Coding Accuracy and Interrater Agreement**

All studies were coded independently by two coders. The first was the researcher and the second, a doctoral student with experience of meta-analytic techniques (who was briefed on the coding procedure, and provided with the coding scheme and instructions). No discrepancies between coders were encountered.

**Meta-Analytic Procedure**

The meta-analysis relied on the widely used Hunter and Schmidt (1990, 2004) approach: a random effects model that accounts for sampling bias and measurement error. We calculated sample-weighted effect sizes and corrected for reliability of dependent variables. Given that the foci of the study was the treatment effects of coaching, all effect sizes obtained from the primary studies were converted to $r$'s, conducted a meta-analysis on $r$, and then converted the final results to $d$ (Hunter & Schmidt, 2004). Missing artifact values (i.e. reliability of dependent variables) were estimated by inserting mean values across the studies where information was not given or could not be obtained from the authors after contacting them, as recommended by Hunter and Schmidt (2004). Objective performance data was not corrected for unreliability because it has been frequently argued that measures based on objective performance data are unbiased (Riketta, 2005), and also as no procedure is currently available to correct for unreliability of such measures.

Additionally, we report the 90% confidence intervals (90% CI) of the sample-weighted effect size $d$, and the 80% credibility intervals (80% CV) of the corrected population $d$ statistic $\delta$. Confidence intervals estimate variability in the sample-weighted effect size that is due to sampling error whereas credibility intervals estimate variability in the individual correlations across studies that are due to the moderator variables (Whitener, 1990). If the 90% confidence interval of the sample-weighted effect size does not include zero, we can be 95% confident that the sample-weighted effect size is different from zero. Confidence intervals can also be used to test whether two estimates differ from each other; two estimates are considered different when their confidence intervals are non-overlapping.

If the 80% credibility interval of the corrected population effect size is large and includes zero, it indicates that there is considerable variation across studies and moderators are likely operating. To further corroborate that moderators are present, it was assessed whether sampling error and error of measurement accounted for more than 75% of the variance between studies in the

primary estimates (Hunter & Schmidt, 1990). To do this, the percentage of variance accounted for in the corrected population effect size by sampling and measurement error is reported (% VE). Moderators are assumed to be operating when sampling and measurement error account for less than 75% of the variance. Categorical moderators were computed using Hunter and Schmidt's (1990, 2004) subgroup analyses techniques by conducting separate meta-analyses at each of the specified moderator level. To examine whether there are significant difference between the mean corrected effect sizes of sublevels of the hypothesized moderator variable, the confidence intervals were compared as discussed above. To test the continuous moderators, a weighted least squares (WLS) regression as suggested by Steel and Kammeyer-Muller (2002) was conducted. Unlike subgroup analysis of moderators as suggested by Hunter and Schmidt (2004) this approach avoids artificial categorization of continuous moderator variables. For the WLS regression, the uncorrected correlations of overall coaching effectiveness were regressed in SPSS on each moderator variable using the inverse square root of the sampling error for each correlation as the weighting factor (as specified by Steel & Kammeyer-Muller, 2002), in order to see if the moderator explained variance in the uncorrected correlations of overall coaching effectiveness.

## Results

The results are reported in two sections. Firstly, overall coaching effectiveness and effectiveness of different outcome criteria is reported. This is followed by exploration of the impact of moderator variables[1].

## Criterion Effects of Coaching

Coaching had a positive effect on all outcomes (supporting hypothesis 4.1). As can be seen in Table 4.3, none of the 90% CIs included zero and coaching had a positive effect on overall outcomes ($\delta = 0.36$, 90% CI [0.16, 0.50]).

Outcomes were further distinguished between affective, skill-based, and individual-level results outcomes in the analyses. Table 4.3 suggests that coaching had positive effects on affective outcomes ($\delta = 0.51$, 90% CI [0.17, 0.78]), skill-based outcomes ($\delta = 0.28$, 90% CI [0.07, 0.44]), and individual-level results outcomes ($\delta = 1.24$, 90% CI [0.88, 1.47]). The non-overlapping confidence intervals of these three outcomes suggest that coaching has a stronger effect on individual-level results outcomes than affective and skill-based outcomes. There are no differences with regards to affective and skill-based outcomes.

| Variable | k | n | d | 90% CI | | δ | $SD_\delta$ | % var. acc. for | 80% CV | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | Lower | Upper | | | | Lower | Upper |
| Overall effectiveness | 17 | 2267 | 0.33 | 0.16 | 0.50 | 0.36 | 0.42 | 17.68 | -0.16 | 0.97 |
| Affective outcomes | 10 | 592 | 0.46 | 0.17 | 0.78 | 0.51 | 0.55 | 22.84 | -0.15 | 1.39 |
| Skill-based outcomes | 10 | 1784 | 0.26 | 0.07 | 0.44 | 0.28 | 0.35 | 19.02 | -0.16 | 0.76 |
| Individual-level results outcomes | 3 | 116 | 1.15 | 0.88 | 1.47 | 1.24 | 0.00 | 100.00 | 1.25 | 1.25 |
| *Research Design* | | | | | | | | | | |
| Overall outcomes – between-subjects | 14 | 2109 | 0.31 | 0.12 | 0.51 | 0.35 | 0.44 | 14.88 | -0.20 | 0.99 |
| Overall outcomes – within-subjects | 3 | 158 | 0.53 | 0.43 | 0.62 | 0.57 | 0.00 | 100.00 | 0.56 | 0.56 |
| *Multi-Source Feedback (MSF)* | | | | | | | | | | |
| Overall outcomes – MSF not used | 9 | 569 | 0.80 | 0.40 | 1.29 | 0.88 | 0.82 | 12.53 | 0.00 | 2.73 |
| Overall outcomes – MSF used | 7 | 1620 | 0.19 | 0.12 | 0.26 | 0.21 | 0.00 | 100.00 | 0.20 | 0.20 |
| *Format of Coaching* | | | | | | | | | | |
| Overall outcomes – face-to-face coaching | 8 | 1691 | 0.27 | 0.06 | 0.48 | 0.29 | 0.36 | 15.49 | -0.16 | 0.80 |
| Overall outcomes – blended coaching | 6 | 274 | 0.25 | 0.09 | 0.43 | 0.28 | 0.00 | 100.00 | 0.24 | 0.24 |
| *Type of Coach* | | | | | | | | | | |
| Overall outcomes – external coach | 13 | 1958 | 0.18 | 0.11 | 0.26 | 0.20 | 0.00 | 100.00 | 0.20 | 0.20 |
| Overall outcomes – internal coach | 3 | 182 | 1.27 | 0.65 | 2.36 | 1.40 | 0.89 | 14.23 | 0.54 | 3.81 |

**Table 4.3:** Meta-analytic results.
Note: $k$ = number of studies; $n$ = number of respondents; $d$ = sample weighted mean effect size; 90% CI = 90% confidence interval of the d; $\delta$ = corrected population d statistic; $SD_\delta$ = standard deviation of the corrected population d statistic; % var. acc. for = percentage of variance attributed to sampling error and artifact corrections; 80% CV = 80% credibility interval of the $\delta$.

The low amount of variance accounted for by artifacts, and the large credibility intervals around the effects of coaching on overall outcomes (17.68%, 80% CV [-0.16, 0.97]) suggests that moderating variables are operating.

**Moderators of Coaching Effectiveness**

**Research design**. Most of the studies within the sample were between-subjects design ($k = 14$, $n = 2109$). A small group of studies used a within-subjects design ($k = 3$, $n = 158$). Coaching had a positive effect on outcomes for both types of research design. Table 4.3 suggests that coaching had a greater effect on outcomes for within-subjects ($\delta = 0.57$) compared to between-subjects ($\delta = 0.35$). However, the 90% CI were overlapping ([0.43, 0.62]; [0.12, 0.51]) which suggests that the two effects are not different; therefore research design does not appear to moderate the effects of coaching on outcomes (therefore hypothesis 4.2 was not supported).

**Multi-source feedback**. The effects of whether the coaching included multi-source feedback as part of the coaching process were examined. Table 4.3 suggests that coaching had a positive effect on outcomes for both groups however this effect was greater on outcomes when coaching was provided without multi-source feedback ($\delta = 0.88$ vs. $\delta = 0.21$). The non-overlapping confidence intervals suggest that coaching has a stronger effect when it is provided without multi-source feedback ([0.40, 1.29]; [0.12, 0.26]); therefore hypothesis 4.3 was not supported.

**Format of coaching**. The effects of coaching provided in the face-to-face format with blended formats were compared. Table 4.3 shows that both effect sizes were positive and neither coaching format demonstrated stronger criterion effects; the two effects on outcomes are similar and their 90% CI are overlapping ($\delta = 0.29$, [0.06, 0.48] vs. $\delta = 0.28$ [0.09, 0.43]; therefore hypothesis 4.4 was not supported).

**Type of coach.** The effects for coaches that were employed internally by the organization, and compared with effects for external consultant coaches were examined. Table 4.3 shows that the effects of coaching on outcomes were weaker when the coach is external to the organization ($\delta = 0.20$ vs. $\delta = 1.40$) and that the 90% CI were non-overlapping ([0.11, 0.26]; [0.65, 2.36]). This suggests that contrary to the prediction, the effects of coaching on outcomes were weaker for external coaches in comparison to internal coaches (therefore hypothesis 4.5 was not supported).

**Coaching schedule.** Moderation of the longevity in weeks of the coaching intervention and number of coaching sessions on overall coaching effectiveness was tested. As longevity of the coaching intervention and number of coaching sessions might have a decreasingly positive effect on coaching effectiveness, both linear and curvilinear effects were tested for. To test for linear effects the moderator variable was entered as predictor variable, to test for curvilinear effects the moderator variable and the squared term of the moderator variable was entered as predictor variables. None of the effects were significant (linear effect of longevity in weeks of the coaching intervention: $B$ = .01, $SE$ = .00, ns, $R^2$ =.14; curvilinear effect of longevity in weeks of the coaching intervention: $B$ = .00, $SE$ = .00, ns, $R^2$ =.18; linear effect of number of coaching sessions: $B$ = .01, $SE$ = .02, ns, $R^2$ = .01; curvilinear effect of number of coaching sessions: $B$ = .01, $SE$ = .01, ns, $R^2$ = .07). Therefore, neither longevity in weeks of the coaching intervention or number of coaching sessions moderated overall coaching effectiveness.

**Discussion**

In the present study, results of a meta-analysis to synthesize the existing research on coaching effectiveness at work were reported, in order to understand the impact that coaching has on a variety of workplace outcomes. The outcome criteria classified on a framework modelled on the learning, training and development literature were examined, and particular techniques or tools of coaching were tested for moderation of effectiveness. The analyses demonstrated that for all outcomes, coaching had a positive impact. Effect sizes nevertheless varied for different types of outcome criteria, and based on some specific applied method features of coaching. Collectively, the findings have important implications for research and practice of coaching.

**Criterion Effects of Coaching**

In order to align the analyses with literatures on training and development, and human resource management, a criterion framework for the outcomes of coaching was proposed which was presented in chapter two. It was hypothesized that coaching would have an overall positive impact on all outcome criteria, specifically in the meta-analyses for affective, skill-based, and individual-level results outcomes. It was found that in the combined analyses of all 17 studies, coaching demonstrated a positive impact on outcome criteria ($\delta$ = 0.36). Within this finding, there was variation for different types of outcome criteria ranging from 0.28 to 1.24. These effect sizes appear to be comparable to those obtained for other types of organizational interventions. For example, in their meta-analysis of the training effectiveness literature, Arthur et al. (2003) obtained effect sizes ranging from 0.60 to 0.63. Whereas Powell and Yalcin (2010) found a

smaller effect size of 0.24 for managerial training interventions. Looking at wider interventions, findings from Smither, London and Reilly's (2005) meta-analysis of multi-source feedback on performance reported much smaller effect sizes ranging from 0.05 to 0.15. Therefore compared to the impact of a popular intervention such as multi-source feedback, coaching appears to have larger and more consistent positive effects on outcome criteria.

Interestingly, the largest effect size in this study (1.24) was observed for individual-level results outcomes, a key organizational focus representing translation of learning through to performance benefits. Evidence that coaching has a significantly positive impact on individual-level results in particular indicates that businesses can expect positive performance and impact improvements from investment in coaching. By contrast, Powell and Yalcin (2010) reported the smallest effects for results criteria in their meta-analysis of managerial training interventions explaining their findings with reference to potential issues in training transfer, leading to a smaller impact of training on results outcomes. In chapter three, it was described how coaching encourages development activities that are personalized to individual need, and carried out in day-to-day work. These may therefore serve to promote development that is directly relevant to the workplace, and is therefore more straightforward for the coachee to implement in their performance behaviour. These processes may promote transfer of learning to work activity resulting in improved performance results, a proposition that appears to be supported in our findings, representing a potential advantage of coaching over other forms of training.

No moderation of the criterion effects of coaching by research design was found, contrary to hypothesis 4.2, and the results of Theeboom et al. (2014). Although the effect size for within-subjects designs was higher than for between-subjects designs, the difference was non-significant. It is therefore concluded that whilst there is some evidence that research design may influence criterion effect sizes in studies of coaching, the specific nature or importance of those effects remains to be confirmed.

**Practice Moderators of Coaching Criterion Effects**
Coaches often employ different practice factors in the form of techniques or tools into their coaching approaches, and the moderating effects of some of these were tested in the analyses. Firstly, the analyses revealed that when controlling for moderation effects of these practice factors, the positive effects of coaching were maintained. Moreover, no significant moderation was found by the use of face-to-face compared to blended coaching. This finding, although

contrary to the original prediction, is consistent with findings from the field of e-mentoring which have demonstrated that e-mentoring has a positive impact on academic and workplace outcomes (de Janasz & Godshalk, 2013; Kyrgidou & Petridou, 2013). This finding has positive implications for the practice of coaching. One of the main advantages of providing coaching in alternative formats such as telephone or e-mail is the efficiencies in terms of cost and time commitment. By demonstrating that both face-to-face and blended formats of coaching have a positive impact on outcomes, the analyses provides some justification for applying blended formats in order to extend its accessibility to a wider audience. Notwithstanding this point, the data do not permit conclusions to be drawn about the effectiveness of e-coaching (i.e. the use of technology such as internet or telephone to conduct coaching) alone. Only one study used solely e-coaching (in which coaching was conducted exclusively by telephone), so it was not possible to compute a meta-analytic effect. Future research on the effectiveness of e-coaching is therefore clearly warranted.

The analysis showed that there was no significant moderation of outcomes by the number of coaching sessions or the longevity of the coaching intervention, consistent with the previous findings of Theeboom et al. (2014). The tests for curvilinear effects also indicated that there is not a plateauing of the impact of coaching (by which additional sessions or weeks of intervention would make an impact up until a certain point, after which more coaching would cease to result in improved impact). Taken together, the data indicate that even short-term coaching has a beneficial impact. These findings once again have positive implications for the practice of coaching as they suggest that shorter and potentially more cost effective coaching interventions are likely to be effective. However, like previous studies (e.g. Theeboom et al., 2014), it is suggested that future research should qualify this finding by factoring in the severity of the presenting employee development issues at the outset of coaching. Some employee development issues may require a greater number of sessions, and a longer-term coaching intervention than others. Data analyzed in this study did not permit this possibility to be tested.

Two significant moderator variables were identified in the meta-analyses: use of multi-source feedback, and type of coach. In both cases, the results ran counter to the hypotheses. It had been hypothesized that coaching combined with multi-source feedback would have a greater effect on outcomes. However, the findings showed that coaching without multi-source feedback actually had a significantly stronger positive impact on outcomes. This finding may possibly be explained by previous research findings on the impact of feedback (including multi-

source feedback) on performance. For example, in their meta-analysis of the effects of performance feedback, Kluger and DeNisi (1996) reported that while on average feedback interventions resulted in higher performance, over a third of the studies included in their analyses actually reported that feedback resulted in lower performance. They concluded that their findings were meaningful, and could not be explained by sampling error, feedback sign or existing theory, but speculated that attentional processes may help to explain the negative impact of feedback on performance. In the context of coaching, feedback (especially negative feedback) received by the coachee in the coaching session may divert attention so that the coachee becomes pre-occupied with the content of the feedback. This could leave insufficient attentional resources to engage in the subsequent coaching process, limiting the positive benefits of the session. An additional factor may be the content of the multi-source feedback. Such instruments are often focused on leadership behaviour, which may be rather distal from the development objectives of the coachee. Collectively, these potentially negative mechanisms associated with feedback and its content, may explain why in the meta-analyses, weaker performance benefits were observed when multi-source feedback was combined with coaching.

It had also been hypothesized that external coaches would have a greater impact on outcomes as they would provide an external perspective, unrestricted by the constraints of the employing organization, and more consistent with contemporary boundaryless models of work and careers. This was not confirmed in the findings, which rather showed that although coaching by both internal and external coaches was beneficial for learning and performance, the effects of coaching by internal coaches had a stronger effect compared to external coaches. This is an interesting finding given the growing scale of the coaching industry, which is strongly based around a model of contracted external (e.g. consulting) coaches. Some potential explanations as to why internal coaches appear to be more effective than external coaches are provided by Strumpf (2002), who questions the assumption that bringing in an external coach is necessarily the best option for organizations. Strumpf suggests that the choice to use either an internal or external coach is dependent on a number of factors. These factors include a cultural bias and readiness, as some organizations prefer to use 'homegrown' solutions versus those generated by external consultants and a strong, strategically placed head of human resources who may provide an excellent role model for internal coaches and consequently increase the credibility of an internal coach.  A further potential explanation is that internal coaches inevitably have a better understanding of the organization's culture and climate and may therefore be better placed to enable the coachee to be more productive in their specific workplace (i.e. by setting

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goals in such a way that organization-specific barriers or facilitators to their achievement are realistically discussed, addressed and incorporated into development). The earlier arguments that an internal perspective would be less critical for coaching as compared to mentoring for example are not borne out in the data analyzed. The interpretations here should be viewed appropriately cautiously given the relatively low number of studies using internal coaches.

**Implications for Research and Future Directions**

This study represents an important advance in the evidence base for the effectiveness of coaching in organizations. To consider the implications of the findings for future research, two themes are highlighted that emerge from the analyses: firstly, the criterion effects measured in primary research on coaching; and secondly, the practice methodology in studies of coaching.

Considering first the criterion effects of coaching, it is proposed that the framework of criterion effects (shown in Table 4.1) could be used by researchers to organize more clearly the criteria that are measured in coaching evaluating studies. Some methods of measurement were presented for each of the criteria included in the framework, which could guide researchers in choosing measurement methods. The framework also highlighted gaps in the literature for certain kinds of outcome criteria. Specifically, none of the included studies examined cognitive, or team or organizational-level results outcome criteria, areas where further studies are clearly warranted. Moreover, future research might examine how the relative impact of coaching on different kinds of criteria, and compare this with other forms of learning and development intervention (e.g. training).

Second, it was acknowledged earlier that the selection of practice moderators was somewhat governed by those factors that were described and operationalized in the studies examined. This observation speaks to a broader limitation of many studies of coaching effectiveness, namely a lack of detail in the descriptions of coaching interventions employed. Failing to completely describe coaching techniques and approaches employed in empirical studies prevents later classification in meta-analyses such as this. Greater thoroughness on the part of researchers in this area is encouraged, to specify precisely the nature and format of coaching employed in empirical studies, a guideline that will be followed in subsequent chapters of this thesis when presenting the details of the intervention study conducted as part of this doctoral research. Such specification should include description of who provided coaching, to whom, in

what format, for how long, over how many individual sessions, using which coaching approaches or models, and including which (if any) tools or techniques.

With regard to future research directions, the implications of these observations are two-fold. One, there is a need for experimental studies that manipulate the features of coaching to examine directly the impact of particular coaching processes. Theoretical and conceptual development should clearly accompany or precede such research. Two, all empirical studies of coaching should adequately describe in detail any particular general processes that applied to the coaching sessions under study.

## Applied Implications for Organizations and Coaches

This study has a number of implications for practitioners and coaches in organizations. Firstly, the meta-analysis has demonstrated that coaching had a positive effect on all outcome criteria examined, providing an evidence base from which practitioners can draw confidence.

Second, the proposed framework of outcome criteria from coaching provides researchers and organizations with a method of categorizing the types of outcomes that can be expected from coaching. These can be applied in evaluation studies by practitioners, or by organizations to examine the impact of coaching.

Finally, the findings are informative for decisions about using particular tools and coaching techniques. Although the results show that overall, coaching appears to be effective irrespective of the format of the coaching, practitioners and organizations should consider carefully the use of multi-source feedback, and the engagement of external coaches, both of which resulted in smaller positive effects of coaching. If multi-source feedback is used, practitioners should review and apply evidence in the literature about the determinants of effective use of feedback. When engaging external coaches, organizations could ensure that a thorough familiarization process is undertaken to enable coaches to have a full and complete understanding of the organizational context of employee learning and performance.

## Limitations and Strengths

There are a number of limitations of this study. First, with respect to the coding of data, due to incomplete reporting of sample characteristics and coaching variables, a number of the coded variables had to be listed as either unspecified or, in the case of reliability data, estimated.

Although estimation from means is consistent with recommendations for replacing other forms of missing data (e.g. Hunter and Schmidt, 1990), such replacements are less satisfactory than reported data. In some cases, lack of reporting in research articles meant that there was not enough studies in each group to fully analyse moderators. In addition, as commented on earlier, incomplete reporting meant that the moderators that could be explored were limited to those included in the primary studies.

Second, due to the relatively nascent nature of coaching research, the meta-analysis included a relatively small number of studies. Whilst the number of studies included in the analyses is similar to some other meta-analyses in work and organizational psychology (e.g. Riketta, 2008), some caution is warranted in interpreting and generalizing from the results, which invite replication as the number of research studies in this area grows.

Alongside these limitations, this study has a number of significant strengths. This is the first systematic examination of the effectiveness of coaching to exclusively focus on coaching in organizations, marking an important advance in the literature on coaching at work. The positive findings prompt future development of the coaching literature, and coaching practices. Moreover, the analyses of coaching outcomes has been aligned with existing taxonomies of outcomes from learning, training and development, making the findings easy to view alongside these literatures. The examination of moderators is particularly informative for practising coaches to understand the impact of particular tools and techniques of coaching, enabling them to make informed choices about their work.

**Conclusion**

At the outset of this thesis, it was asked whether workplace coaching was effective in terms of delivering individual learning and development, and improvements in performance and results for organizations. The meta-analysis presented here has made significant steps in addressing the lack of systematic scientific evidence about the benefits of coaching for organizations. The findings suggest that the answer to this question is yes, and the analyses indicated that coaching resulted in a number of key positive effects for learning and performance outcomes in the studies examined. This study gives support to the further development of coaching research and practice, providing evidence of the potential utility of coaching at work. This chapter has addressed the first research aim of this thesis, the next chapter will present the second

empirical study which seeks to develop a conceptually derived, reliable and valid method for evaluating coaching outcomes.

Endnotes

*1.*     An anonymous reviewer of an earlier draft of this paper rightly noted that one study (Smither et al. 2003) had a markedly high sample size compared to others in the meta-analysis. Based on the idea that there is a trade-off between weighting individual effect sizes by their sample size and individual effect sizes obtained from very large samples overly influencing the weighted average effect size, it has been suggested to limit the *n* of any primary study to 500, and to substitute any sample size with a value larger than that with 500 (Riketta, 2005). When applying this modification, the effect sizes for the analyses that included the Smither et al. study increased slightly. However, no other changes were observed, and the conclusions regarding the hypotheses were unaffected. Parsimoniously, the meta-analytic results with the original sample size for the Smither et al. study are reported

**CHAPTER FIVE**

**Perceived Coaching Effectiveness: Development and Validation of a Scale**

**Chapter Summary**

This chapter presents a pilot study to develop and test a scale to measure perceived coaching effectiveness from the coachees' perspective. A deductive approach was utilised and the framework of coaching outcomes presented in chapter two provided the starting point in the exploration of the types of outcomes that coachees' perceive to occur as a result of coaching. A multi-stage scale development procedure was followed, as outlined by Hinkin (1998) and DeVellis (2012). In-depth interviews resulted in 110 potential items being generated. After questionnaire administration ($n$ = 201) and factor analysis, two alternative models were proposed: a nine factor and a six factor model. Confirmatory factor analysis was used to compare the models and the six factor model was deemed to provide the best statistical fit to the data. The six factor model had 21 items and the factors were named career clarity; team performance; work well-being; performance; planning and organizing and personal effectiveness and adaptability. This scale addressed a key research aim of this thesis by presenting a pilot study to start the process of developing a conceptually driven, statistically reliable and valid method of evaluating coaching.

**Introduction**

In chapter two, the ongoing challenge of the measurement of outcomes in training, learning and development for organizations and researchers was described. Furthermore, the case has been presented that there is little consensus in the literature regarding the most appropriate outcome criteria for evaluating coaching (Grant, Passmore, Cavanagh & Parker, 2010; MacKie, 2007; Smither, 2011). Conceptual models proposed by Kirkpatrick (1967) and Kraiger, Ford and Salas (1993) have outlined the types of outcomes that can be expected from training, learning and development. In response to this gap in the literature, using these models as a guide, a framework of coaching outcomes was presented in chapter two and tested meta-analytically in chapter four. Drawing on Kraiger et al. (1993) and Kirkpatrick (1996), recommendations on the types of methods one may utilise to measure these outcomes in the workplace were included in the framework. A limitation of the coaching literature in general is the absence of scientifically rigorous tools which can be used to measure coaching outcomes. Without these tools, it is very

difficult to be confident that any changes observed in coaching research are due to the coaching intervention or alternatively an artefact of errors or bias in the measurement method.

The importance of the reliability and validity of measurement tools for evaluating outcomes is a fundamental principle of research design. Outcome measures should be theoretically and empirically driven, however they also need to be practical and accessible for practitioners. If an outcome measure is cost prohibitive then regardless of its accuracy it is unlikely that it will be used on a large scale. For this reason, self-report questionnaires are a popular method of evaluating interventions. In the context of the framework of coaching outcomes suggested in chapter two, it is proposed that affective outcomes of coaching should be measured via self-report questionnaires. One such affective outcome is the perceived effectiveness of the coaching. There is currently no established questionnaire which has consistently been used to measure perceived coaching effectiveness. Studies which have measured this outcome have each formulated a new scale (i.e. Feggetter, 2007; Smither, London, Flautt, Vargas & Kucine, 2003; Tooth, Nielson & Armstrong, 2013). However, these existing scales do not appear to have been developed utilising the best practice guidelines on scale development procedures outlined by authors such as Hinkin (1998) and DeVellis (2012). For example, Feggetter (2007) generated a list of questions to measure perceptions of outcomes following coaching which were administered to participants with no reliability analysis or validation of the scale prior to administration reported. Smither et al. (2003) generated a list of questions and conducted exploratory factor analysis of the results however no further reliability or validation of the scale was reported. Tooth et al. (2013) generated a list of questionnaire items which were assessed for face validity before questionnaire administration, however, with the exception of Cronbach's alpha reliability analysis, no further analysis, such as factor analysis was conducted to explore the structure of the scale.

For these reasons, the purpose of this study is to conduct a pilot study to start the process of developing a theoretically driven scale. By utilising a rigorous scale development procedure, as outlined by Hinkin (1998) and DeVellis (2012), a highly reliable and valid measure can start to be created which can then be further validated in future research and then used by other researchers, practitioners and organizations to evaluate coaching. The purpose of the scale will be to measure the coachee's perceptions of the impact of the coaching on the criterion outlined in the framework of coaching outcomes proposed and tested earlier in this thesis and shown in Table 5.1. As the measure will examine outcomes only and will not be concerned with the

process of the coaching intervention itself, the scale could be used to evaluate all types of coaching (i.e. cognitive-behavioural, humanistic, solution-focused etc.) and also be used in all business contexts. The development of this scale in this pilot study will signify a step in the right direction to create a scientifically reliable and valid tool that can be used in the pursuit of the evidence-based practice of workplace coaching.

| Outcome Criteria | Description | Measurement Methodology |
|---|---|---|
| Affective outcomes | Attitudes and motivational outcomes (e.g. self-efficacy; well-being; satisfaction). | Self-report questionnaires |
| Cognitive outcomes | Declarative knowledge; procedural knowledge; cognitive strategies (e.g. problem-solving). | Recognition and recall tests |
| Skill-based outcomes | Compilation and automaticity of new skills (e.g. leadership skills; technical skills; competencies). | Behavioural observation in the workplace (e.g. multi-source feedback questionnaire) |
| Results | Individual, team and organizational performance | Financial results; objective or goal achievement; productivity |

**Table 5.1:** Framework of coaching outcomes and summary of proposed coaching evaluation criteria*.*

In this pilot study a multi-stage development process was followed, and the scale development has been split into three separate sub studies. The first study revolves around the theme exploration and item generation. The second study examines the face and content validity of the items. The third study is the questionnaire administration including the initial item reduction and confirmatory factory analysis.

**Study 2a: Theme Exploration and Item Generation**

Based on the training, learning and development literature, proposed coaching outcomes have been identified in the framework detailed in Table 5.1. These outcome themes form the starting point of the exploration of perceived coaching outcomes, however, for the purpose of the development of this scale, cognitive outcomes, although included in the framework of outcomes, are not included here. It is proposed that the type of cognitive outcomes coaching is likely to lead to are the development of new cognitive strategies such as problem-solving strategies. As these types of strategies are frequently performed unconsciously it would be inappropriate to measure these through a self-report questionnaire. In addition to this, due to the very broad

nature of the category 'results', for the purpose of this scale development, this category has been divided further into the following sections. 'Individual results' (e.g. improved individual productivity/ objectives achieved); 'team results' (e.g. improved performance of the team managed by coachee) and 'organizational results' (e.g. either financial performance (increased turnover) or strategic performance (achievement of company objectives i.e. increased R & D). These modifications resulted in five themes of coaching outcomes: affective; skill-based; individual results; team results and organizational results. Twelve in depth interviews were conducted with subject matter experts (individuals who had received coaching) in order to confirm the content validity of these themes. Based on the confirmed themes, the interviews were used in the development of indicators.

**Method**

**Participants.** Participants were invited to participate in this study through an open invitation circulated through the researcher's coaching network. In total, 12 interviews were conducted. Of the 12 participants, eight were male and all participants were white. The age range was 32 to 59 with a mean age of 43.5 years ($s.d$ = 9.14). Participants held a variety of professional occupations, for example: learning and development manager, company director and financial controller. All participants worked at management or senior management levels. Participants were employed by a range of private (50%), public (42%) and charitable (8%) organizations working at SME (42%), global (33%) and national (25%) levels. The mean number of coaching sessions was 18.5 with a range of 2 to 60 coaching sessions, 11 of the participants had all seen the same coach for all of their coaching sessions and all participants had seen an external coach. The time span of the coaching sessions ranged from one week to 10 years. 11 out of 12 participants had met with their coach face-to-face; the other participant had received telephone coaching.

**Measures and procedure.** A fixed interview schedule was followed for all 12 interviews. Firstly, a definition of coaching was provided followed by an explanation of the potential outcomes of coaching that had been defined in the framework of coaching outcomes. Participants were then asked: "Do you either agree that all of these outcomes can be expected from coaching, think that any of these outcomes should be removed or think any additional outcomes should be added to the list?" Once these themes had been discussed and their validity confirmed, participants were asked to generate potential indicators for each of the themes. This was done by asking each participant: "I would like you to think of what questions you could ask to measure

how well the coaching was doing at producing change for each of these outcomes?" Examples were provided to illustrate to the participant the type of questions or statements that could be generated. Each of the themes/outcomes was worked through, resulting in a list of items/indicators for each theme. All interviews were conducted over the telephone by the researcher.

**Results and Discussion: Study 2a**

All 12 participants agreed with the five themes/outcomes identified. Next, each interview transcript was reviewed to collate all of the generated items for each of the five outcomes. Any duplicated items were removed from the list. This resulted in a list of 147 items consisting of 46 affective outcomes items; 51 skill-based; 18 individual results; 14 team results and 18 organizational results (see appendix A for the full list of items developed during this stage)..

The generation of items is a critical step in the development of a reliable and valid measure. As theory is a great aid to clarity, it is essential that a scale is grounded in substantive theory which underpins the phenomenon of interest (DeVellis, 2012). To achieve this, the development of the perceived coaching effectiveness scale was grounded in the extant training, learning and development literature. Following the guidelines of Hinkin (1998), the first step involved in the development of the perceived coaching effectiveness scale involved establishing content validity. Content validity is of primary concern during the item generation phase and is concerned with whether a scale samples all of the relevant or important domains of a concept, without containing any extraneous content. As such, content validity is considered as the minimum psychometric requirement in determining the adequacy of a measure, and constitutes the initial step of complete construct validation. In this instance, content validity was ensured by the adoption of the deductive approach to theme exploration and item generation.

Study 2a confirmed that participants agree with the themes of outcomes identified through the literature which suggests that these outcomes have good content validity. An adequate number of items were generated in order to inform the proceeding stages of the scale development.

**Study 2b: Face and Content Validity of Items**

The next sub study was conducted to provide a further check of the face and content validity of the items generated. This stage in the scale development process is essential as it is an opportunity to either confirm or invalidate the adopted definition of the phenomena (DeVellis,

2012). It is also necessary to confirm if a separate group of participants can identify whether each item identified measures the intended construction. If it is not clear at this stage what the scale is intending to measure then participants completing the final scale may also be unclear.

**Method**

**Participants.** Seven doctoral researchers who work in the field of organizational behaviour however not specifically in the field of coaching research were the participants for the face and content validity check.

**Measures and procedure.** The technique utilised by Mackenzie, Podsakoff and Fetter (1991) was used in which a group of naive participants were provided with the scale themes and asked to match the scale items to their corresponding definition. In order for an item to be retained, a minimum of 75% of the participants had to agree on its corresponding construct as recommended by Hinkin (1998). The participants were provided with instructions on how to complete the task including the definitions of the five proposed coaching outcomes. Participants were then presented with the list of all question items for the scale and the five outcomes. Participants were asked to indicate which outcome they thought the item represents. Participants had the option of indicating if they felt the item represented more than one outcome and also an 'other' category for items they felt did not belong to any of the five categories.

**Results and Discussion: Study 2b**

Once the results of the content validity check were collated, it was found that 37 of the 147 items did not meet the minimum correct item classification of agreement between 75% of participants; therefore these items were removed leaving a 110 item scale (see appendix B for the full list of items).

The theme exploration detailed in study 2a resulted in a total of five categories of perceived coaching outcomes: affective; skill-based; individual results; team results and organizational results. The face and content validity check in study 2b resulted in a 110 item scale consisting of 36 items for affective outcomes; 33 items for skill-based; 15 items for individual results; 14 items for team results and 12 items for organizational results. The development process utilised suggests that these themes and items have good levels of face and content validity. The next stage of the scale development process was to explore the underlying factor structure of the scale and validate the scale

**Study 2c: Questionnaire Administration and Empirical Scale Validation**

The aim of this study was to test whether the remaining 110 items confirmed the expectations of the constructs being measured, to further refine the scale, to explore the convergent and discriminant validity of the scale and to confirm the fit of the proposed model with the data.

**Method**

**Participants**. The scale was distributed to a sample of coachees. Hinkin (1998) recommends that for this stage of scale development, several independent samples should be used to test the scale. Participants were drawn from a range of sources with no more than 20% of the sample working for the same organization.  This resulted in a sample of 201 participants, which, according to Hinkin (1998) is an adequate sample size for subsequent analysis of data to be completed. The participants ranged in age from 19 to 70 (mean age = 36, $s.d$ = 13.40). Participants were predominately female (59%). As for the ethnicity of participants; 77% were white, 9% were Asian, 2% were Black and 2% were mixed race. Ethnicity was not specified for the remaining 10% of the sample. The level of position of the sample was split between 27% student (who had received coaching); 25% management; 16% professional and 2% director. The remaining 30% did not specify their position. Sector of employment was divided between 61% public sector, 22% charity and 10% private sector (7% not specified). In relation to the coaching participants had received; the number of coaching sessions ranged from 1 to 100 (mean number of sessions = 6, $s.d$ = 9); 86% of participants saw the same coach for all of their coaching sessions; 45% of the sample saw a coach external to their organization, 42% saw an internal coach and 2% saw a mixture of both internal and external coaches (11% not specified). Finally, 34% of participants received coaching face-to-face; 20% had telephone coaching and 36% of participants received blended coaching (i.e. in a variety of formats).

**Measure and procedure.** All participants completed the 110-item scale online. An introductory email was sent inviting participants to take part in the research project with an explanation of the purpose of the research. The email contained a link which took participants directly to the online questionnaire. All questionnaires were completed anonymously. The 201 completed questionnaires were then analysed using exploratory and confirmatory factor analysis. This analysis is described below.

**Results**

**Exploratory factor analysis: stage one.** As recommended by Hinkin (1995), before factor analysis can be completed, the univariate statistics for the sample were first examined. Normality was screened by assessing the skewness and kurtosis of the data set. No excessive skewness or kurtosis was identified for any of the items. In order to be considered suitable for factor analysis, items should show at least some correlations of $r = .3$ or greater. A review of the correlation matrix confirmed that most items had a correlation of around $r = .5$. Next, the boxplots were reviewed to identify outliers and these were removed (4 cases and 5 items with high levels of outliers were removed). To check that the data was suitable for factor analysis the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett's test of sphercity were checked. As the KMO value was above .6 (.92) and Bartlett's test was significant ($p = .00$) it was concluded that this data set was suitable for factor analysis. To explore the construct validity, first exploratory factor analysis (with principal axis factoring) with varimax rotation was conducted as this method of rotation generally provides a clearer solution (Goldberg & Velicer, 2006). As the five proposed constructs or outcomes of coaching are conceptually distinct from one another, it was decided to examine the five factors separately in order to generate a clean unifactorial solution and eliminate any unnecessary 'noise' from the other factors which may distort the solution presented. In addition to confirming the presence of the factors, this stage of analysis was used to further refine the scales. A pre-defined selection criterion was applied systematically to each factor in order to eliminate items and reduce the number of items on each factor to the top six. Firstly, the items had to have loadings on the rotated factor matrix of over .4. Secondly, the wording of items was reviewed and items were removed wherever necessary to avoid obvious duplication and redundancy and based on the clarity of the items. Finally, items were prioritised if they marked out clear differences in factors based on factor loadings.

*Affective outcomes.* On examining the 36 items in the affective outcomes category, the parallel analysis and scree plot (see Figure 5.1) both suggested that two factors should be extracted. To refine the scale the communalities were examined and any items with communalities lower than .4 were removed. This resulted in the removal of two items. Next, in order to reduce the number of items from 34 to a maximum of 6 per factor, the pre-defined selection criteria was applied. Therefore any items with loadings on the rotated factor matrix of less than .4 were removed. The wording of individual items was reviewed and items were removed that were very similar in order to avoid duplication or items that were potentially unclear were also removed. Finally, items were prioritised if they marked out clear differences in

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factors based on factor loadings. Once the list of 34 items was reduced to 12 items (6 per factor), the EFA was ran again, this time forcing a two factor solution. The rotated factor matrix for this two factor solution is shown in Table 5.2. The scale was further refined by deleting any items with high cross loadings on both factors. In this instance item a66 'I feel more engaged' was removed as this item had similarly high loadings onto both factors (.415 for factor 1 and .589 for factor 2). This resulted in two affective outcome factors, which, based on the nature of the items were named career clarity (factor 1, 6 items) and work well-being (factor 2, 5 items).
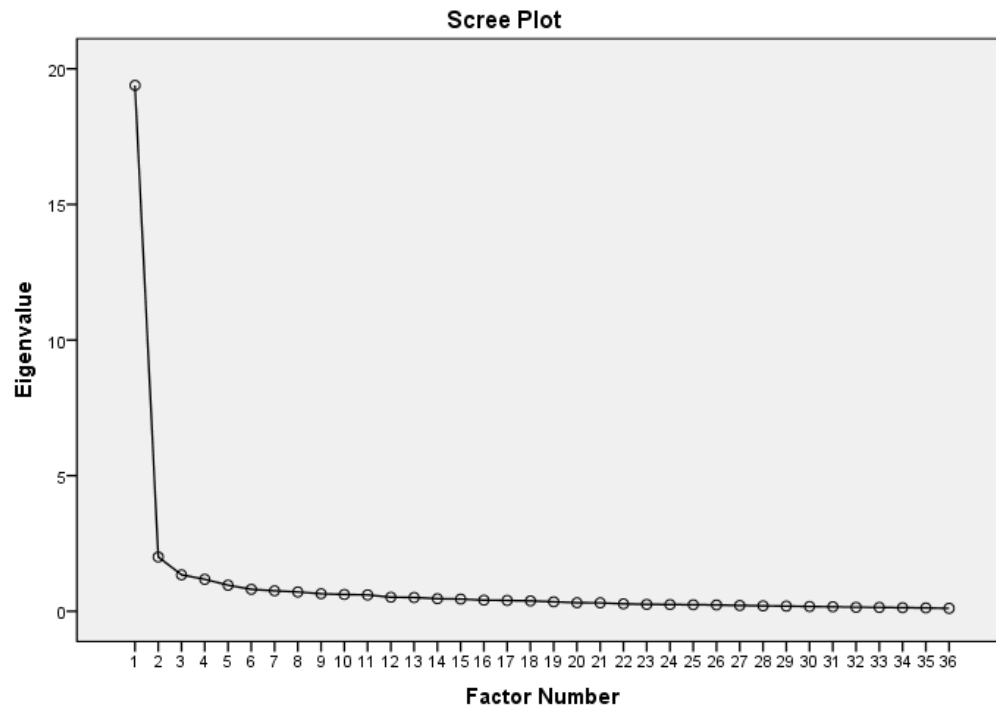


**Figure 5.1:** Scree plot of all 36 items in the affective outcome category

| Item (item code) | Factor | | | |
|---|---|---|---|---|
| | **1**<br>**Career**<br>**Clarity** | Retained/<br>Deleted | **2**<br>**Work Well-**<br>**Being** | Retained/<br>Deleted |
| I feel more satisfied in my job (a1) | .295 | Deleted | .671 | Retained |
| I feel less stressed at work (a12) | .242 | Deleted | .644 | Deleted |
| I feel happier in my role (a52) | .332 | Deleted | .836 | Retained |
| I enjoy my job more (a57) | .413 | Deleted | .746 | Retained |
| I feel less frustrated (a62) | .219 | Deleted | .764 | Deleted |
| I feel more engaged (a66) | .415 | Deleted | .589 | Deleted |
| I feel greater confidence in my decisions (a82) | .682 | Deleted | .421 | Deleted |
| It has helped me to assess my values at work (a84) | .661 | Deleted | .303 | Deleted |
| I have a more positive attitude towards my career  (a94) | .759 | Retained | .333 | Deleted |
| Coaching has made me more focused on my intentions (a98) | .779 | Retained | .257 | Deleted |
| Coaching has helped me understand how I approach my goals (a104) | .800 | Retained | .237 | Deleted |
| It has given me insight into my impact at work (a106) | .723 | Deleted | .377 | Deleted |

**Table 5.2:** Rotated factor matrix of top 12 items in the affective outcome category after forcing a two factor solution

Note: Extraction Method: Principal Axis Factoring, Rotation Method: Varimax with Kaiser Normalization: Retained/deleted refers to whether the item was retained for the final scale

***Skill-based outcomes.*** The above analysis was repeated for the skill-based outcome category. This time the parallel analysis and scree plot (see Figure 5.2) suggested that three factors should be extracted. One item was removed due to low communalities (less than .4). Using the same pre-defined selection criteria to reduce the number of items, the remaining items were refined with redundant or unclear items removed and any items with high cross loadings across factors also deleted. Once the list of 32 items was reduced to 17 (6 per factor for factors 1 and 2 and 5 items for factor 3), the EFA was ran again, this time forcing a three factor solution. The rotated factor matrix for this three factor solution is shown in Table 5.3. The scale was further refined by deleting any items with high cross loadings across multiple factors. In this instance items s81 'Coaching has improved the way that I deal with senior management' (.421 for factor 1 and .577 for factor 2); s2 'I am able to plan more effectively' (.558 for factor 2 and .413 for factor 3); s93 'I have become more consultative than directive' (.590 for factor 1 and .392 for factor 2) and s89 'I now take control over issues at work' (.431 for factor 1, .437 for factor 2 and .489 for factor 3) were all removed. This resulted in three skill-based factors: personal effectiveness and adaptability (factor 1, five items); leadership (factor 2, four items) and planning & organising (factor 3, four items).
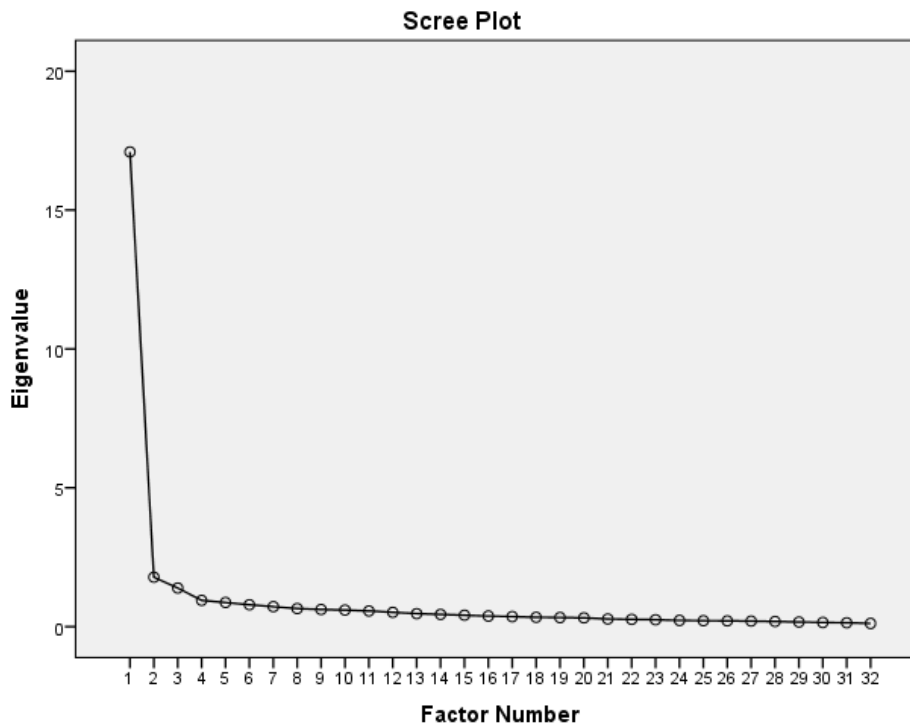


**Figure 5.2:** Scree plot of all 33 items in the skill-based outcome category

| Item (item code) | Factor | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | 1<br>**Personal Effectiveness & Adaptability** | Retained/<br>deleted | 2<br>**Leadership** | Retained/<br>deleted | 3<br>**Planning & Organising** | Retained/<br>deleted |
| I am more flexible in the way I work to meet organizational objectives (s71) | .689 | Retained | .328 | Deleted | .323 | Deleted |
| I act in a more professional manner (s83) | .688 | Retained | .206 | Deleted | .305 | Deleted |
| I am more flexible in how I deal with others (s58) | .636 | Retained | .313 | Deleted | .368 | Deleted |
| I now contribute more frequently in meetings (s79) | .632 | Deleted | .338 | Deleted | .252 | Deleted |
| My body language has improved (s101) | .619 | Deleted | .272 | Deleted | .160 | Deleted |
| I have become more consultative than directive (s93) | .590 | Deleted | .392 | Deleted | .183 | Deleted |
| I demonstrate leadership more frequently (s33) | .392 | Deleted | .737 | Retained | .245 | Deleted |
| I have better people management skills (s18) | .351 | Deleted | .695 | Retained | .223 | Deleted |
| I am better able to inspire others (s28) | .269 | Deleted | .603 | Retained | .394 | Deleted |
| The way I now manage my team stretches them to achieve more (s48) | .381 | Deleted | .599 | Deleted | .359 | Deleted |
| Coaching has improved the way that I deal with senior management (s81) | .421 | Deleted | .577 | Deleted | .178 | Deleted |
| I am able to delegate more effectively (s2) | .208 | Deleted | .558 | Deleted | .413 | Deleted |
| I am able to plan more effectively (s95) | .208 | Deleted | .558 | Deleted | .413 | Retained |
| I am able to prioritise more effectively (s75) | .354 | Deleted | .171 | Deleted | .767 | Retained |
| I am more organized (s73) | .191 | Deleted | .315 | Deleted | .765 | Retained |
| I have adopted a more proactive than reactive approach to work (s87) | .326 | Deleted | .388 | Deleted | .577 | Deleted |
| I now take control over issues at work (s89) | .431 | Deleted | .437 | Deleted | .489 | Deleted |

**Table 5.3:** Rotated factor matrix of top 17 items in the skill-based outcome category after forcing a three factor solution
Note: Extraction Method: Principal Axis Factoring, Rotation Method: Varimax with Kaiser Normalization; Retained/deleted refers to whether the item was retained for the final scale

*Individual results.* The parallel analysis and scree plot (see Figure 5.3) suggested retaining two factors in the individual results category. Two items were removed for having communality values lower than the .4 threshold and a further three items were removed as due to their wording they were considered redundant or unclear. This resulted in a reduction to a total of 10 items: 6 loading onto factor 1 and 4 loading onto factor 2. The EFA was repeated, this time forcing a two factor solution. The rotated factor matrix for the two factor solution for individual results is shown in Table 5.4. The scale was further refined by deleting item ir34 'I am able to meet deadlines more effectively' due to duplication with item ir59 'I now meet deadlines because of coaching'. This resulted in six items for a job performance factor (factor 1) and three items for an attention to detail factor (factor 2).
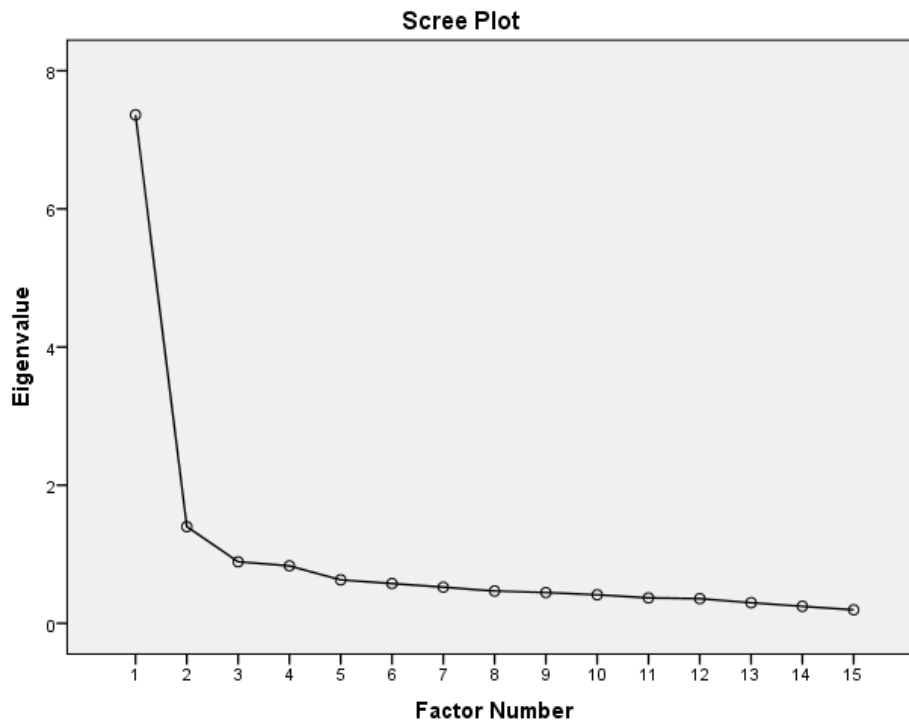


**Figure 5.3:** Scree plot of all 15 items in the individual results outcome category

| Item (item code) | Factor | | | |
| --- | --- | --- | --- | --- |
| | **1** **Job** **Performance** | Retained/ deleted | **2** **Attention** **to Detail** | Retained/ deleted |
| I have gained more positive feedback from others (clients/senior management/peers etc.) (ir29) | .781 | Retained | .276 | Deleted |
| I have increased credibility with clients and colleagues (ir64) | .701 | Deleted | .361 | Deleted |
| I have consistently achieved all of my competencies objectives (ir49) | .687 | Retained | .261 | Deleted |
| I have exceeded some of my objectives (ir54) | .679 | Deleted | .366 | Deleted |
| I have achieved my goals as a result of coaching (ir39) | .588 | Retained | .379 | Deleted |
| I have generated additional financial savings (ir68) | .539 | Deleted | .367 | Deleted |
| I am able to meet deadlines more effectively (ir34) | .358 | Deleted | .762 | Deleted |
| I now meet deadlines because of coaching (ir59) | .299 | Deleted | .739 | Deleted |
| I have greater accuracy with tasks (ir9) | .367 | Deleted | .711 | Deleted |
| I am able to manage my administration more effectively (ir3) | .305 | Deleted | .637 | Deleted |

**Table 5.4:** Rotated factor matrix of top 10 items in the individual results outcome category after forcing a two factor solution

Note: Extraction Method: Principal Axis Factoring, Rotation Method: Varimax with Kaiser Normalization; Retained/deleted refers to whether the item was retained for the final scale

The attention to detail factor had very similar items to the planning & organising factor in the skill-based category so these factors were explored further. When analysing the four items from the skill-based planning and organising factor and the three items for the individual results attention to detail factor, the parallel analysis and scree plot (see Figure 5.4) both suggested that only one factor was present. In order to reduce the number of items to the required six per factor, item ir3 'I am able to manage my administration more effectively' was deleted, due to duplication with items s75 'I am able to prioritise more effectively' and s73 'I am more organized'. This resulted in a six item scale which was named planning and organizing. The full list of items in this factor are shown in Table 5.5.
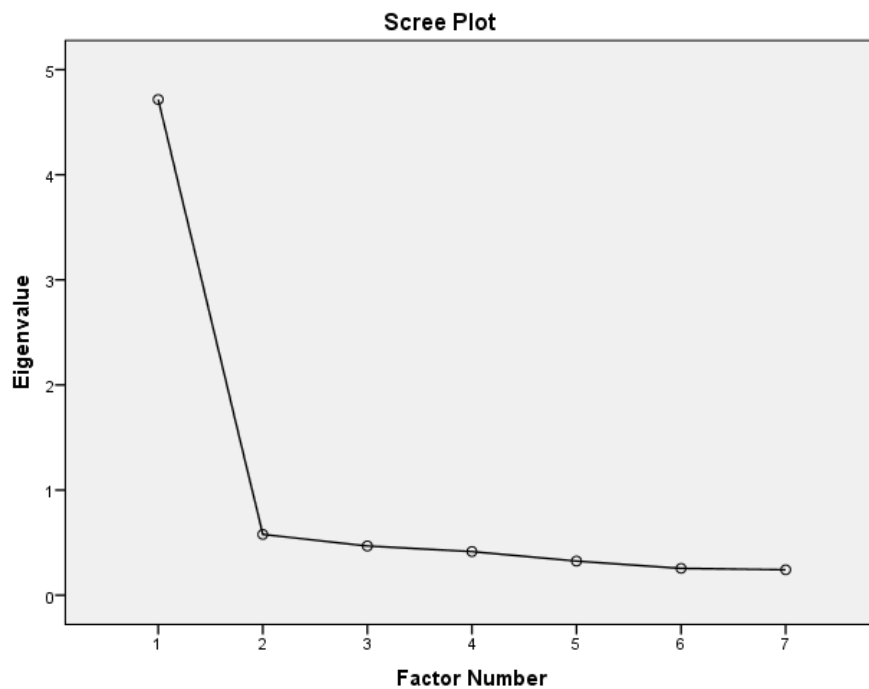


**Figure 5.4:** Scree plot of 4 skill-based planning & organising items and 3 individual results attention to detail items

| Item (item code) | Factor Planning & Organizing | Retained/ deleted |
|---|---|---|
| I am able to plan more effectively (s95) | .872 | Retained |
| I am more organized (s73) | .850 | Retained |
| I am able to prioritise more effectively (s75) | .829 | Retained |
| I am able to manage my administration more effectively (ir3) | .764 | Deleted |
| I now meet deadlines because of coaching (ir59) | .733 | Deleted |
| I have greater accuracy with tasks (ir9) | .730 | Deleted |
| I have adopted a more proactive than reactive approach to work (s87) | .724 | Deleted |

**Table 5.5:** Factor matrix of 6 items in the Planning & Organising factor
Note: Extraction Method: Principal Axis Factoring; Retained/deleted refers to whether the item was retained for the final scale

*Team results.* The parallel analysis and scree plot (see Figure 5.5) suggested that only one factor should be extracted in the team results category. One item was deleted due to its low communality value (less than .4). This resulted in a reduction to 13 items on the team results category. These items are shown in Table 5.6. The top six items were retained based on their high loadings onto the factor and the clarity of the wording of these 6 items and this factor was renamed team performance.
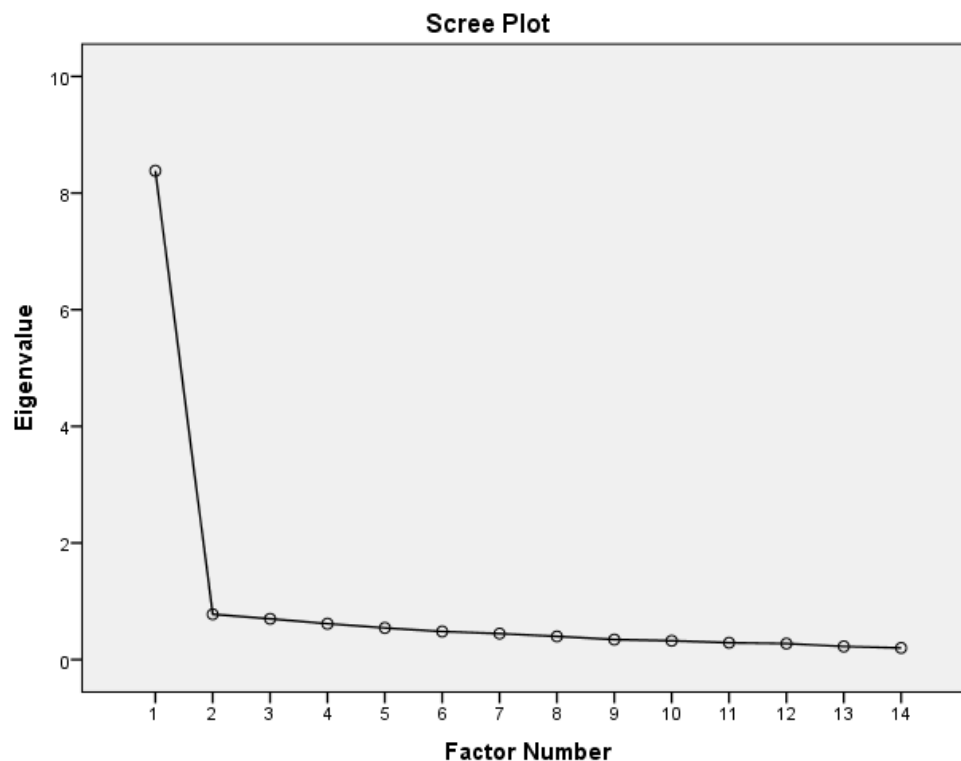


**Figure 5.5:** Scree plot of all 14 items in the team results outcome category

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| Item (item code) | Factor Team Performance | Retained/ deleted |
|---|---|---|
| My team works at a more consistent level (tr69) | .836 | Retained |
| My team delivers higher quality work (tr60) | .817 | Retained |
| My team meets more deadlines (tr65) | .811 | Retained |
| My team are reporting higher levels of satisfaction and motivation as a result of my coaching (tr25) | .796 | Deleted |
| My team receives more positive feedback from others regarding their performance (tr40) | .776 | Deleted |
| My team collaborates more (tr35) | .772 | Deleted |
| My team delivers better results (tr45) | .771 | Deleted |
| My team has been able to contribute more effectively to the organizations performance (tr50) | .770 | Deleted |
| My team is more cohesive (tr55) | .761 | Deleted |
| My direct reports are more focused on their own goals (tr30) | .737 | Deleted |
| My team have achieved more of their team level goals as a result of my coaching (tr20) | .721 | Deleted |
| My team works together more effectively (tr4) | .714 | Deleted |
| My team mirror my feedback technique and therefore are giving more constructive feedback to others (tr10) | .637 | Deleted |

**Table 5.6:** Factor matrix of top 13 items in the team results outcome category
Note: Extraction Method: Principal Axis Factoring; Retained/deleted refers to whether the item was retained for the final scale

*Organization results.* Parallel analysis and examination of the scree plot (see Figure 5.6) for the organizational results category suggested that two factors should be extracted. As no items had communalities of less than .4, no items were removed. The rotated factor matrix for the two factor solution for organizational results is shown in Table 5.7. The scale was further refined by deleting 5 items that had high cross loadings across both factors. These were items or31 'My coaching has had a positive impact on the way the organization is perceived by others' (.592 for factor 1 and .459 for factor 2); or26 'My coaching helped develop an organization culture to encourage coaching and provide open feedback' (.581 for factor 1 and .474 for factor 2); or36 'Customer satisfaction has improved (.545 for factor 1 and .384 for factor 2)'; or21 'My coaching led our organization to develop its human capital' (.401 for factor 1 and .566 for factor 2) and or41 'There has been an increase in productivity' (.494 for factor 1 and .505 for factor 2). This resulted in a four item organizational performance scale (factor 1) and a three item staff retention scale (factor 2).
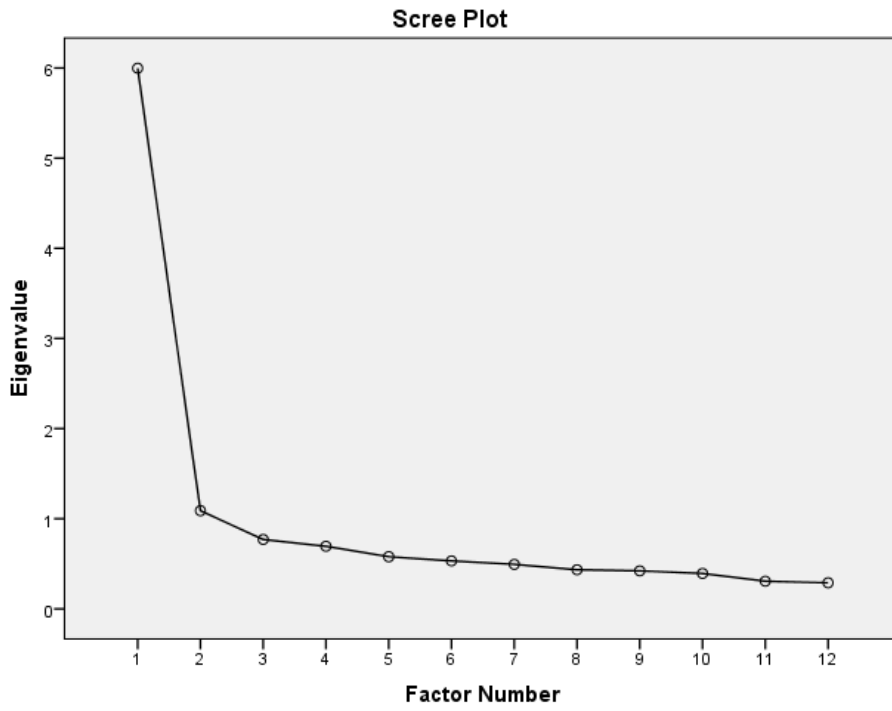
**Figure 5.6:** Scree plot of all 12 items in the organizational results outcome category

| Item (item code) | Factor | | | |
|---|---|---|---|---|
| | **1** **Organizational Performance** | Retained/ deleted | **2** **Staff Retention** | Retained/ deleted |
| I work more efficiently, saving the organization money (or51) | .691 | Retained | .253 | Deleted |
| Coaching has helped me to achieve organizational level goals (or16) | .668 | Retained | .231 | Deleted |
| My coaching has led me to have had a greater impact on the organizations financial performance (or5) | .654 | Deleted | .183 | Deleted |
| I have helped to develop a developmental culture within the organization (or56) | .634 | Retained | .355 | Deleted |
| My coaching has had a positive impact on the way the organization is perceived by others (or31) | .592 | Deleted | .459 | Deleted |
| My coaching helped develop an organization culture to encourage coaching and provide open feedback (or26) | .581 | Deleted | .474 | Deleted |
| Customer satisfaction has improved (or36) | .545 | Deleted | .384 | Deleted |
| Staff absences have decreased (or46) | .112 | Deleted | .718 | Retained |
| The workforce is happier (or61) | .373 | Deleted | .616 | Retained |
| The coaching has resulted in reduced staff turnover/ greater retention of staff in the organization (or11) | .354 | Deleted | .595 | Retained |
| My coaching led our organization to develop its human capital (or21) | .401 | Deleted | .566 | Deleted |
| There has been an increase in productivity (or41) | .494 | Deleted | .505 | Deleted |

**Table 5.7:** Rotated factor matrix of the 12 items in the organizational results outcome category after forcing a two factor solution
Note: Extraction Method: Principal Axis Factoring, Rotation Method: Varimax with Kaiser Normalization; Retained/deleted refers to whether the item was retained for the final scale

The next stage of the analysis was to calculate Cronbach's alphas as indicators of internal consistency and also to reduce the number of items per scale even further. DeVellis (2012) recommends achieving a desirable balance between the brevity of the scale and reliability. DeVellis suggests that when alpha is higher than .90 then the number of items should be reduced. To achieve a desirable balance between the overall length of the scale and the number of items for each factor, the number of items per factor were reduced to a maximum of three. Each of the nine factors will be reported separately.

**Scale Refinement**

*Affective outcome: career clarity.* The five items in the career clarity category had an alpha coefficient of .91. Items with the highest 'alpha if item deleted' values and lacked clarity of wording were removed to reduce the six items to three. Therefore items a82 'I feel greater confidence in my decisions' and a106 'It has given me insight into my impact at work' were removed. This gave the final career clarity scale an alpha coefficient of .87.

*Affective outcome: work well-being.* The five items in the work well-being category had an alpha coefficient of .89. Clarity of wording and the 'alpha if item deleted' values were reviewed to reduce the five items to three. Therefore items a12 'I feel less stressed at work' and a62 'I feel less frustrated' were removed. This gave the final work well-being scale an alpha coefficient of .87.

*Skill-based outcome: personal effectiveness and adaptability.* The four items in the personal effectiveness and adaptability category had an alpha coefficient of .85. Clarity of wording and the 'alpha if item deleted' values were reviewed to reduce the four items to three. Therefore item s101 'My body language has improved' was removed. This gave the final personal effectiveness and adaptability scale an alpha coefficient of .84.

*Skill-based outcome: leadership.* The three items in the leadership factor had an alpha coefficient of .85. No further items needed to be deleted from this scale.

*Skill-based outcome: planning and organising.* The four items in the planning & organising category had an alpha coefficient of .89. Clarity of wording and the 'alpha if item deleted' values were reviewed to reduce the four items to three. Therefore item ir9 'I have greater accuracy with tasks' was removed. This gave the final planning and organising scale an alpha coefficient of .90.

*Individual results: job performance.* The four items in the job performance category had an alpha coefficient of .81. Clarity of wording and the 'alpha if item deleted' values were reviewed

to reduce the four items to three. Therefore item ir68 'I have generated additional financial savings' was removed. This gave the final job performance scale an alpha coefficient of .78.

***Team results: team performance.*** The five items in the team performance category had an alpha coefficient of .91. Clarity of wording and the 'alpha if item deleted' values were reviewed to reduce the five items to three. Therefore items tr25 'My team are reporting higher levels of satisfaction and motivation as a result of coaching' and tr35 'My team collaborates more' were deleted. This gave the final team performance scale an alpha coefficient of .88.

***Organizational results: organizational performance.*** The four items in the organizational performance category had an alpha coefficient of .80. Clarity of wording and the 'alpha if item deleted' values were reviewed to reduce the four items to three. Therefore item or5 'My coaching has led me to have had a greater impact on the organizations financial performance' was deleted. This gave the final organizational performance scale an alpha coefficient of .77.

***Organizational results: staff retention.*** The three items in the staff retention factor had an alpha coefficient of .75. No further items needed to be deleted from this scale.

The internal consistency analysis resulted in a model consisting of nine factors of perceived coaching effectiveness (career clarity; work well-being; personal effectiveness and adaptability; leadership; planning & organising; job performance; team performance; organizational performance and staff retention) measured by 27 items. The full list of items can be found in Table 5.8.

**Convergent and divergent validity.** To check the convergent and divergent validity of the final scale, the mean scale scores were calculated for each of the nine factors and these were correlated with the individual items in the factor. To demonstrate convergent and divergent validity, correlations should be high between item scores and mean scores for the same factor (convergent validity) and low between item scores and mean score when belonging to different factors (divergent validity). Examination of the correlations for the model confirmed that all of the correlations from within the same factors were higher than the correlations between different factors. Therefore convergent and divergent validity was confirmed.

The inter-correlations between the nine factors are displayed in Table 5.9. The correlation matrix shows that a number of the factors had very high correlations (over .70) which suggests that there is little unique variance between these factors. Therefore, before proceeding to the

confirmatory factor analysis a second stage of EFA was conducted in order to confirm the nine factor structure.

| Factor | Item (item code) |
|---|---|
| Career Clarity | Coaching has made me more focused on my intentions (a98) |
| Career Clarity | I have a more positive attitude towards my career (a94) |
| Career Clarity | Coaching has helped me to understand how I approach my goals (a104) |
| Work Well-Being | I feel happier in my role (a52) |
| Work Well-Being | I enjoy my job more (a57) |
| Work Well-Being | I feel more satisfied in my job (a1) |
| Personal Effectiveness & Adaptability | I am more flexible in the way I work to meet organizational objectives (s71) |
| Personal Effectiveness & Adaptability | I act in a more professional manner (s83) |
| Personal Effectiveness & Adaptability | I am more flexible in how I deal with others (s58) |
| Leadership | I have better people management skills (s18) |
| Leadership | I demonstrate leadership more frequently (s33) |
| Leadership | I am better able to inspire others (s28) |
| Planning & Organising | I am able to plan more effectively (s95) |
| Planning & Organising | I am more organised (s73) |
| Planning & Organising | I am able to prioritise more effectively (s75) |
| Job Performance | I have gained more positive feedback from others (clients/senior managers/peers etc.) (ir29) |
| Job Performance | I have consistently achieved all of my competencies and objectives (ir49) |
| Job Performance | I have achieved my goals as a result of coaching (ir39) |
| Team Performance | My team works at a more consistent level (tr69) |
| Team Performance | My team delivers higher quality work (tr60) |
| Team Performance | My team meets more deadlines (tr65) |
| Organizational Performance | I work more efficiently, saving the organization money (or51) |
| Organizational Performance | Coaching has helped me to achieve organizational level goals (or16) |
| Organizational Performance | I have helped to develop a developmental culture within the organization (or56) |
| Staff Retention | Staff absences have decreased (or46) |
| Staff Retention | The workforce is happier (or61) |
| Staff Retention | The coaching has resulted in reduced staff turnover/greater retention of staff in the organization (or11) |

**Table 5.8:** Final list of items in the nine-factor perceived coaching effectiveness scale

| | Career Clarity | Work Well-Being | Personal Effectiveness & Adaptability | Leadership | Planning & Organizing | Job Performance | Team Performance | Organizational Performance | Staff Retention |
|---|---|---|---|---|---|---|---|---|---|
| Career Clarity | 1.00 | | | | | | | | |
| Work Well-Being | .61** | 1.00 | | | | | | | |
| Personal Effectiveness & Adaptability | .64** | .55** | 1.00 | | | | | | |
| Leadership | .70** | .63** | .67** | 1.00 | | | | | |
| Planning & Organizing | .68** | .57** | .64** | .60** | 1.00 | | | | |
| Job Performance | .67** | .65** | .64** | .70** | .61** | 1.00 | | | |
| Team Performance | .57** | .55** | .55** | .64** | .64** | .66** | 1.00 | | |
| Organizational Performance | .63** | .60** | .60** | .67** | .58** | .77** | .65** | 1.00 | |
| Staff Retention | .41** | .52** | .53** | .50** | .50** | .54** | .72** | .54** | 1.00 |

**Table 5.9:** Inter-correlations between the nine perceived coaching effectiveness factors

Note: **$p < .01$ level

**Exploratory factor analysis: stage two.** Stage one of the EFA utilised a unifactorial approach and resulted in nine factors and a total of 27 items. In order to confirm the presence of the nine factors found in stage one, a further stage of exploratory factor analysis was conducted where all of the original 46 items (after EFA but before the Cronbach's alpha internal consistency analysis) were explored to see whether nine factors emerged again.

When entering all 46 items, the parallel analysis suggested that six factors, rather than nine, should be extracted. Examination of the scree plot (see Figure 5.7) suggested a break at one factor with a much smaller subsequent break at six factors. As the parallel analysis suggested six factors, it was decided that six factors should be extracted in the second stage of EFA.

In order to refine the number of items per factor, once again, the same systematic, pre-defined selection criteria was applied in order to eliminate redundant items and generate a cleaner solution. In order to be retained, items had to have loadings on the rotated factor matrix of over .4. As redundant or unclear items had already been removed during the first stage of factor analysis the only other criteria to be applied was to prioritise items that marked out clear differences in factors based on loadings. As the correlation matrix of the nine-factor solution in Table 5.9 suggests that there are some high correlations between the factors, a strict criterion was applied in the second stage of EFA in order to clearly differentiate between factors and consequently achieve lower factor correlations. In the literature on scale development, there is little advice on how scales should further be refined past Hinkin's (1998) suggestion that items should load higher than .4 and the rational for retaining and deleting items should link clearly to theory. As this guidance had already been applied, further criterion was needed in order to refine the scale further. Therefore, any factors with a difference in loading values of less than .2 were removed. This ensured that the number of items were refined and the factors were statistically different. Using a fixed cut-off of .2 difference in loading values ensured that items were objectively removed in a systematic process. As no items had communalities of less than .4, no items were removed. The rotated factor matrix for the six factor solution for the revised perceived coaching effectiveness scale is shown in Table 5.10. The justification for further refinements will be presented separately for each factor.
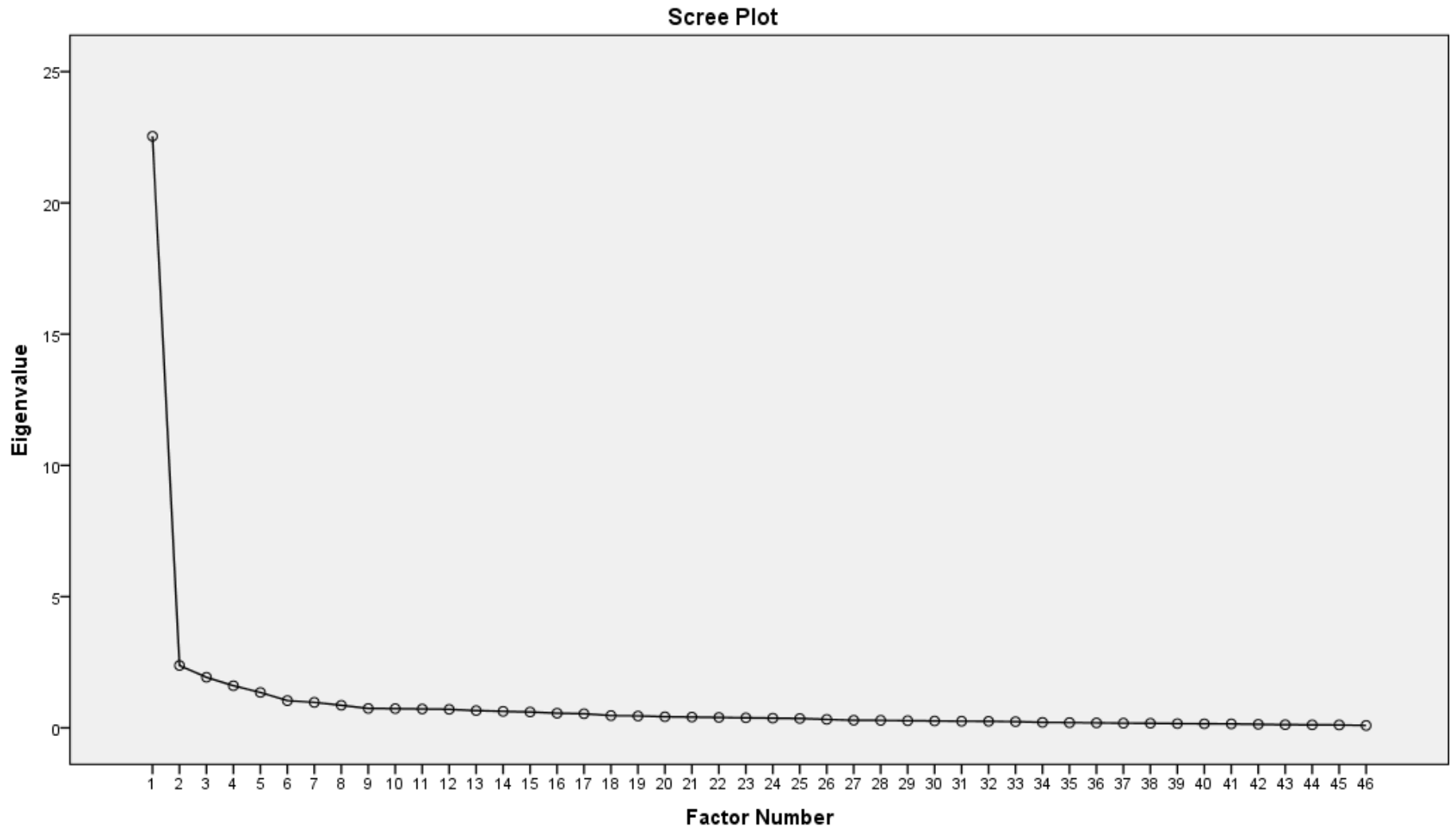
**Figure: 5.7:** Scree plot of all 46 items in the stage two EFA

| Item (item code) | Factor | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | Retained/ deleted | 2 | Retained/ deleted | 3 | Retained/ deleted | 4 | Retained/ deleted | 5 | Retained/ deleted | 6 | Retained/ deleted |
| I demonstrate leadership more frequently (s33) | .630 | Deleted | .373 | Deleted | .266 | Deleted | .159 | Deleted | .140 | Deleted | .250 | Deleted |
| Coaching has made me more focused on my intentions (a98) | .613 | Retained | .057 | Deleted | .203 | Deleted | .255 | Deleted | .382 | Deleted | .184 | Deleted |
| I am better able to inspire others (s28) | .604 | Deleted | .232 | Deleted | .215 | Deleted | .199 | Deleted | .260 | Deleted | .135 | Deleted |
| I have a more positive attitude towards my career (a94) | .597 | Retained | .144 | Deleted | .262 | Deleted | .206 | Deleted | .335 | Deleted | .229 | Deleted |
| I feel greater confidence in my decisions (a82) | .590 | Retained | .171 | Deleted | .304 | Deleted | .303 | Deleted | .222 | Deleted | .255 | Deleted |
| It has helped me to assess my values at work (a84) | .580 | Deleted | .027 | Deleted | .258 | Deleted | .134 | Deleted | .171 | Deleted | .423 | Deleted |
| Coaching has helped me to understand how I approach my goals (a104) | .550 | Retained | .065 | Deleted | .208 | Deleted | .261 | Deleted | .347 | Deleted | .269 | Deleted |
| I have better people management skills (s18) | .518 | Deleted | .360 | Deleted | .232 | Deleted | .228 | Deleted | .110 | Deleted | .204 | Deleted |
| I have exceeded some of my objectives (ir54) | .499 | Deleted | .253 | Deleted | .251 | Deleted | .403 | Deleted | .251 | Deleted | .110 | Deleted |
| It has given me insight into my impact at work (a106) | .495 | Deleted | .119 | Deleted | .321 | Deleted | .344 | Deleted | .264 | Deleted | .299 | Deleted |
| I have achieved my goals as a result of coaching (ir39) | .457 | Deleted | .280 | Deleted | .327 | Deleted | .260 | Deleted | .217 | Deleted | .134 | Deleted |
| My team delivers higher quality work (ir60) | .237 | Deleted | .762 | Retained | .099 | Deleted | .164 | Deleted | .287 | Deleted | .125 | Deleted |
| The workforce is happier (or61) | .140 | Deleted | .654 | Deleted | .352 | Deleted | .167 | Deleted | .176 | Deleted | .089 | Deleted |
| My team collaborates more (tr35) | .179 | Deleted | .629 | Deleted | .156 | Deleted | .249 | Deleted | .115 | Deleted | .238 | Deleted |
| My team meets more deadlines (tr65) | .147 | Deleted | .626 | Retained | .232 | Deleted | .271 | Deleted | .376 | Deleted | .221 | Deleted |
| My team works at a more consistent level (tr69) | .268 | Deleted | .612 | Retained | .132 | Deleted | .395 | Deleted | .298 | Deleted | .127 | Deleted |
| My team are reporting higher levels of satisfaction and motivation as a result of coaching (tr25) | .192 | Deleted | .607 | Deleted | .308 | Deleted | .343 | Deleted | .152 | Deleted | .198 | Deleted |
| Staff absences have decreased (or46) | -.052 | Deleted | .537 | Deleted | .161 | Deleted | .135 | Deleted | .070 | Deleted | .264 | Deleted |
| The way I now manage my team stretches them to achieve more (s48) | .463 | Deleted | .505 | Deleted | .206 | Deleted | .364 | Deleted | .220 | Deleted | .130 | Deleted |

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| Item | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| The coaching has resulted in reduced staff turnover/greater retention of staff in the organization (or11) | .205 | Deleted | .502 | Deleted | .231 | Deleted | .157 | Deleted | .075 | Deleted | .146 | Deleted |
| My team receives more positive feedback from others regarding their performance (tr40) | .216 | Deleted | .461 | Deleted | .183 | Deleted | .432 | Deleted | .104 | Deleted | .435 | Deleted |
| I feel happier in my role (a52) | .273 | Deleted | .220 | Deleted | .752 | Retained | .151 | Deleted | .234 | Deleted | .127 | Deleted |
| I feel less frustrated (a62) | .163 | Deleted | .218 | Deleted | .728 | Retained | .126 | Deleted | .147 | Deleted | .075 | Deleted |
| I enjoy my job more (a57) | .304 | Deleted | .235 | Deleted | .659 | Retained | .211 | Deleted | .243 | Deleted | .203 | Deleted |
| I feel less stressed at work (a12) | .151 | Deleted | .166 | Deleted | .637 | Retained | .163 | Deleted | .084 | Deleted | .148 | Deleted |
| I feel more satisfied in my job (a1) | .300 | Deleted | .223 | Deleted | .605 | Retained | .181 | Deleted | .102 | Deleted | .047 | Deleted |
| I feel more engaged (a66) | .257 | Deleted | .279 | Deleted | .472 | Deleted | .256 | Deleted | .263 | | .228 | |
| I have generated additional financial savings (ir68) | .060 | Deleted | .371 | Deleted | .137 | Deleted | .607 | Retained | .210 | Deleted | .240 | Deleted |
| I work more efficiently, saving the organization money (or51) | .253 | Deleted | .243 | Deleted | .175 | Deleted | .598 | Retained | .241 | Deleted | .246 | Deleted |
| I have consistently achieved all of my competencies and objectives (ir49) | .335 | Deleted | .203 | Deleted | .153 | Deleted | .591 | Retained | .203 | Deleted | .102 | Deleted |
| I have helped to develop a developmental culture within the organization (or56) | .243 | Deleted | .327 | Deleted | .261 | Deleted | .518 | Deleted | .109 | Deleted | .115 | Deleted |
| I have gained more positive feedback from others (clients/senior management/peers etc.) (ir29) | .284 | Deleted | .305 | Deleted | .334 | Deleted | .481 | Deleted | .182 | Deleted | .225 | Deleted |
| My coaching has led me to have had a greater impact on the organizations financial performance (or5) | .388 | Deleted | .205 | Deleted | .239 | Deleted | .476 | Deleted | .182 | Deleted | .225 | Deleted |
| Coaching has helped me to achieve organizational level goals (or16) | .398 | Deleted | .256 | Deleted | .249 | Deleted | .470 | Deleted | .078 | Deleted | .069 | Deleted |
| I have increased credibility with colleagues and clients (ir64) | .327 | Deleted | .311 | Deleted | .207 | Deleted | .419 | Deleted | .262 | Deleted | .394 | Deleted |
| I am able to plan more effectively (s95) | .260 | Deleted | .201 | Deleted | .172 | Deleted | .239 | Deleted | .735 | Retained | .217 | Deleted |
| I am more organized (s73) | .361 | Deleted | .190 | Deleted | .231 | Deleted | .115 | Deleted | .701 | Retained | .112 | Deleted |
| I am able to prioritise more effectively (s75) | .211 | Deleted | .245 | Deleted | .169 | Deleted | .276 | Deleted | .669 | Retained | .240 | Deleted |
| I now meet deadlines because of coaching (ir59) | .206 | Deleted | .480 | Deleted | .208 | Deleted | .090 | Deleted | .548 | Deleted | .113 | Deleted |
| I have greater accuracy with tasks (ir9) | .265 | Deleted | .380 | Deleted | .217 | Deleted | .172 | Deleted | .473 | Deleted | .175 | Deleted |

| Item | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I have adopted a more proactive than reactive approach (s87) | .448 | Deleted | .242 | Deleted | .182 | Deleted | .106 | Deleted | .467 | Deleted | .267 | Deleted |
| I am more flexible in how I deal with others (s58) | .245 | Deleted | .356 | Deleted | .172 | Deleted | .128 | Deleted | .291 | Deleted | .588 | Retained |
| I am more flexible in the way I work to meet organizational objectives (s71) | .348 | Deleted | .298 | Deleted | .095 | Deleted | .321 | Deleted | .233 | Deleted | .558 | Retained |
| I act in a more professional manner (s83) | .287 | Deleted | .258 | Deleted | .149 | Deleted | .205 | Deleted | .246 | Deleted | .557 | Retained |
| I now contribute more frequently to meetings (s79) | .400 | Deleted | .270 | Deleted | .115 | Deleted | .172 | Deleted | .167 | Deleted | .524 | Deleted |
| My body language has improved (s101) | .234 | Deleted | .377 | Deleted | .187 | Deleted | .099 | Deleted | .124 | Deleted | .500 | Deleted |

**Table 5.10:** Rotated factor matrix of the 46 items in the second stage of EFA

Note: Extraction Method: Principal Axis Factoring, Rotation Method: Varimax with Kaiser Normalization; Retained/deleted refers to whether the item was retained for the final scale.

**Factor 1.** A total of eleven items had highest loadings onto factor one. In order to refine these items further and ensure factor one was as statistically distinct from the other factors as possible, five items were removed as they had cross loadings with less than .2 differences between factor loading values. These items were item a84 'It has helped me to assess my values at work'; s18 'I have better people management skills'; ir54 'I have exceeded some of my objectives'; a106 'It has given me insight into my impact at work and ir39 'I have achieved my goals as a result of coaching'. This left six remaining items for factor 1. These six items had an alpha coefficient of .91. DeVellis (2012) recommends that when alpha is above .90, the number of items in the scale should be reduced. Therefore the 'alpha if item deleted' values were reviewed and items s28 'I am better able to inspire others' and s33 'I demonstrate leadership more frequently' were removed. This gave the final factor one scale four items with an alpha coefficient of .89. Reviewing the items in factor one showed that they matched the items in the original career clarity factor in stage one of the EFA, therefore factor one was renamed career clarity.

**Factor 2.** A total of ten items had highest loadings onto factor two. In order to refine these items further and ensure factor two was as statistically distinct from the other factors, two items were removed as they had cross loadings with less than .2 differences between factor loading values. These items were item s48 'The way I now manage my team stretches them to achieve more' and tr40 'My team receives more positive feedback from others regarding their performance'. This left eight items loading onto factor two. These eight items had an alpha coefficient of .91. Once again, the 'alpha if item deleted' values were reviewed in order to bring the alpha coefficient below the recommended .90 mark. Therefore, a further five items were deleted: s46 'Staff absences have decreased'; or11 'The coaching has resulted in reduced staff turnover/greater retention of staff in the organization'; tr35 'My team collaborates more'; or61 'The workforce is happier' and tr25 'My team are reporting higher levels of satisfaction and motivation as a result of my coaching'. This gave the final factor two scale three items with an alpha coefficient of .88. Reviewing the wording of the items in factor two showed that they mapped closely onto the original team performance factor in stage one of the EFA, therefore factor two was renamed team performance.

**Factor 3.** A total of six items had highest loadings onto factor three. In order to refine these items further, item a66 'I feel more engaged' was removed as it had a cross loading of less than .2 difference between another factor loading value. The remaining five items had an alpha

coefficient of .89, therefore no further items were deleted. Reviewing the items in factor three showed that they matched the items in the original work well-being factor in stage one of the EFA, therefore factor three was renamed work well-being.

**Factor 4.** A total of eight items had highest loadings onto factor four. In order to refine these items further, five items were removed as they had cross loadings with less than .2 differences between factor loading values. These items were item ir64 'I have increased credibility with colleagues and clients'; or16 'Coaching has helped me to achieve organizational level goals'; or5 'My coaching has led me to have had a greater impact on the organizations financial performance'; ir29 'I have gained more positive feedback from others (clients/senior management/peers etc.) and or56 'I have helped to develop a developmental culture within the organization'. The remaining three items had an alpha coefficient of .81. Reviewing the items in factor four showed these items were mainly describing performance outcomes, therefore factor four was renamed performance.

**Factor 5.** A total of six items had highest loadings onto factor five. In order to refine these items further, three items were removed as they had cross loadings with less than .2 differences between factor loading values. These items were item ir59 'I now meet deadlines because of coaching'; ir9 'I have greater accuracy in tasks' and s87 'I have adopted a more proactive and reactive approach'. The remaining three items had an alpha coefficient of .90. Reviewing the items in factor five showed that they matched the items in the original planning and organizing factor in stage one of the EFA, therefore factor five was renamed planning and organizing.

**Factor 6.** A total of five items had highest loadings onto factor six. In order to refine these items further, two items were removed as they had cross loadings with less than .2 differences between factor loading values. These items were s79 'I now contribute more frequently to meetings' and s101 'My body language has improved'. The remaining three items had an alpha coefficient of .84. Reviewing the items in factor six showed that they matched the items in the original personal effectiveness and adaptability factor in stage one of the EFA, therefore factor six was renamed personal effectiveness and adaptability.

Once the items with high cross loadings were removed and the factors were further refined based on their alpha coefficients, the stage two EFA resulted in a perceived coaching effectiveness scale with six factors (career clarity; team results; work well-being; performance;

planning and organizing & personal effectiveness and adaptability) with a total of 21 items. These items are summarised in Table 5.11. The inter-correlations between the six factors are displayed in Table 5.12. When comparing these correlations to the correlations for the nine factor model shown in Table 5.9, it is clear that based on the correlations, the six factor model is a preferable solution as all of the factors are moderately correlated (correlations range from .53 to .68) however none of the correlations are higher than .70. This suggests that the factors in the six factor solution are related as would be expected (as all factors represent aspects of changes in work-based performance) however the lack of any strong correlations suggests that the factors are measuring unique aspects of perceived coaching effectiveness.

| Factor | Item (item code) |
| --- | --- |
| Career Clarity | Coaching has made me more focused on my intentions (a98) |
| Career Clarity | I have a more positive attitude towards my career (a94) |
| Career Clarity | Coaching has helped me to understand how I approach my goals (a104) |
| Career Clarity | I feel greater confidence in my decisions (a82) |
| Team Performance | My team works at a more consistent level (tr69) |
| Team Performance | My team delivers higher quality work (tr60) |
| Team Performance | My team meets more deadlines (tr65) |
| Work Well-Being | I feel happier in my role (a52) |
| Work Well-Being | I enjoy my job more (a57) |
| Work Well-Being | I feel more satisfied in my job (a1) |
| Work Well-Being | I feel less frustrated (a62) |
| Work Well-Being | I feel less stressed at work (a12) |
| Performance | I work more efficiently, saving the organization money (or51) |
| Performance | I have consistently achieved all of my competencies and objectives (ir49) |
| Performance | I have generated additional financial savings (ir68) |
| Planning & Organising | I am able to plan more effectively (s95) |
| Planning & Organising | I am more organised (s73) |
| Planning & Organising | I am able to prioritise more effectively (s75) |
| Personal Effectiveness and Adaptability | I am more flexible in the way I work to meet organizational objectives (s71) |
| Personal Effectiveness and Adaptability | I act in a more professional manner (s83) |
| Personal Effectiveness and Adaptability | I am more flexible in how I deal with others (s58) |

**Table 5.11:** Final list of items in the six factor perceived coaching effectiveness scale

|  | Career Clarity | Team Performance | Work Well-Being | Performance | Planning & Organizing | Personal Effectiveness & Adaptability |
|---|---|---|---|---|---|---|
| Career Clarity | 1.00 | | | | | |
| Team Performance | .60** | 1.00 | | | | |
| Work Well-Being | .63** | .55** | 1.00 | | | |
| Performance | .64** | .66** | .53** | 1.00 | | |
| Planning & Organizing | .68** | .64** | .54** | .60** | 1.00 | |
| Personal Effectiveness & Adaptability | .67** | .66** | .53** | .63** | .64** | 1.00 |

**Table 5.12:** Inter-correlations between the six perceived coaching effectiveness factors
Note: ** *p* <.01

**Convergent and divergent validity.** As with the stage one EFA, to check convergent and divergent validity, the mean scale scores were calculated for each of the six factors and these were correlated with the individual items in the factor. To demonstrate convergent and divergent validity, correlations should be high between item scores and mean scores for the same factor (convergent validity) and low between item scores and mean scores when belonging to different factors (divergent validity). Examination of the correlations for the six factor model confirmed that all of the correlations from within the same factors were higher than the correlations between different factors. Therefore convergent and divergent validity was confirmed.

**Confirmatory factor analysis.** The EFA suggested two alternative models for the perceived coaching effectiveness scale, consisting of either nine or six factors. Both models have convergent and divergent validity and acceptable alpha coefficients. The six factor model has more acceptable inter-correlations than the nine factor model. To examine the extent to which the data fit the proposed models, confirmatory factor analysis was performed using IBM SPSS Amos 22. For both models, the items were permitted to load only onto the component they were expected to indicate and no item errors were allowed to correlate. The factors were permitted to correlate. The model for the nine factor solutions is shown in Figure 5.8 and the model for the six factor solution is shown in Figure 5.9.

First, the fit of the nine factor model was estimated. Table 5.13 shows that this model fit the data well. The root-mean-square errors of approximation (RMSEA) meets the 0.6 cut-off suggested by Hu and Bentler (1999) for a good fit. The normed-fit index (NFI) is very close to .9 (.89) and the comparative fit index (CFI) and Tucker Lewis index (TLI) are both close to .95 (.94; .93) (Hu

& Bentler, 1999). Next, the fit of the six factor models was estimated. Table 5.13 shows that this model fit the data marginally better. The RMSEA was once again an acceptable .06, NFI exceeded .9 (.91), CFI exceeded .95 (.96) and TLI meet the .95 cut-off. As the fit of these alternatives cannot be directly compared across the models, the alternative models were examined to see whether they adequately account for the data. To do this, the Akaike information criteria (AIC) index was used in a more comparative fashion (as it can be used to compare models on the basis of the same data matrix; Vrieze, 2012). As shown in Table 5.13, the nine factor model produced AIC values larger than the six factor model which supports the other fit indices by suggesting that the six factor model provides a superior fit to the data than the nine factor model.

|  | $\chi^2$ | df | $\chi^2/df$ | RMSEA | NFI | CFI | TLI | AIC |
|---|---|---|---|---|---|---|---|---|
| Nine factors | 493.27 | 288 | 1.71 | .06 | .89 | .94 | .93 | 673.27 |
| Six factors | 287.61 | 174 | 1.65 | .06 | .91 | .96 | .95 | 401.61 |

**Table 5.13**: Fit indices of confirmatory factor analysis for nine and six factor models of perceiving coaching effectiveness scale
Note. RMSEA = root-mean-square error of approximation; NFI = normed fit index; CFI = comparative fit index; TLI = Tucker Lewis index; AIC = Akaike information criterion.
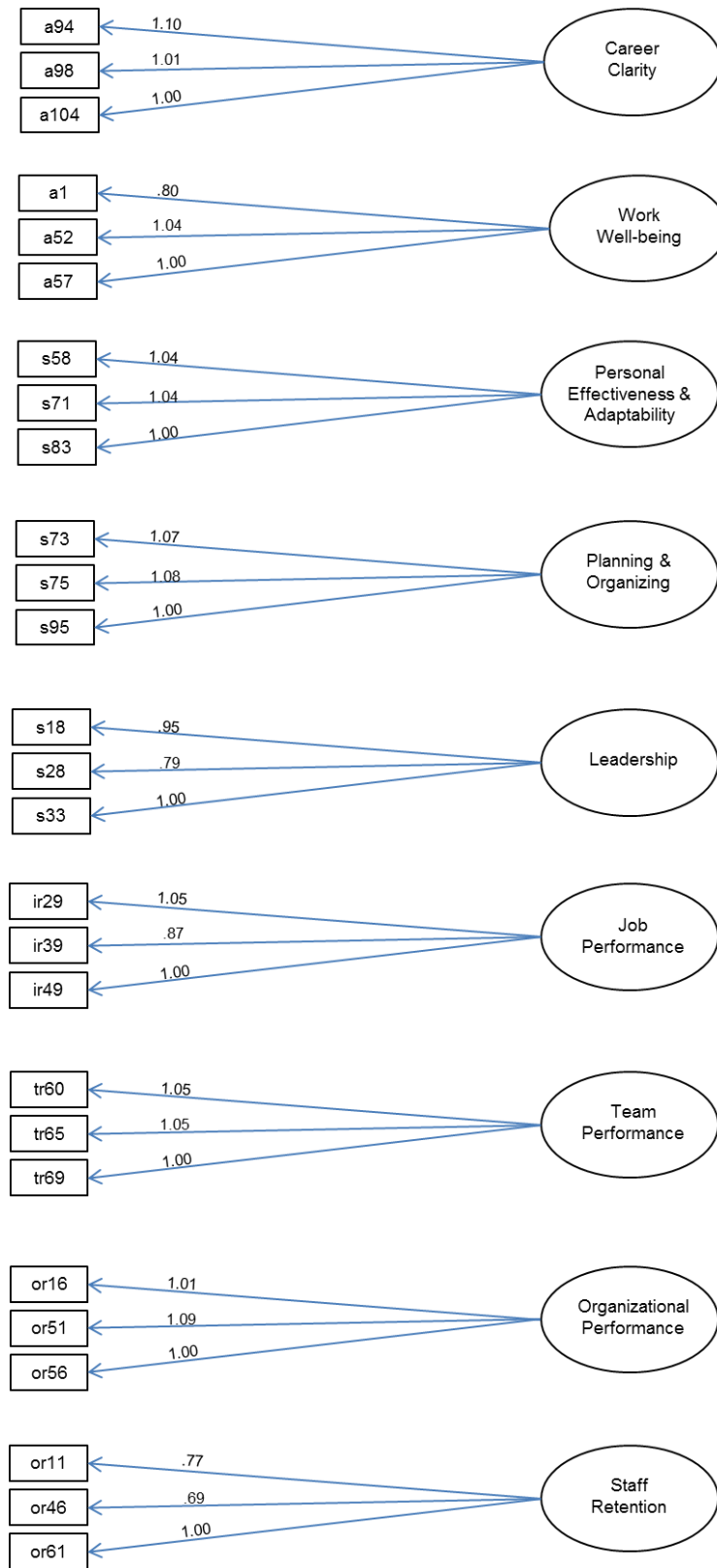
**Figure 5.8:** Proposed nine factor model of perceived coaching effectiveness
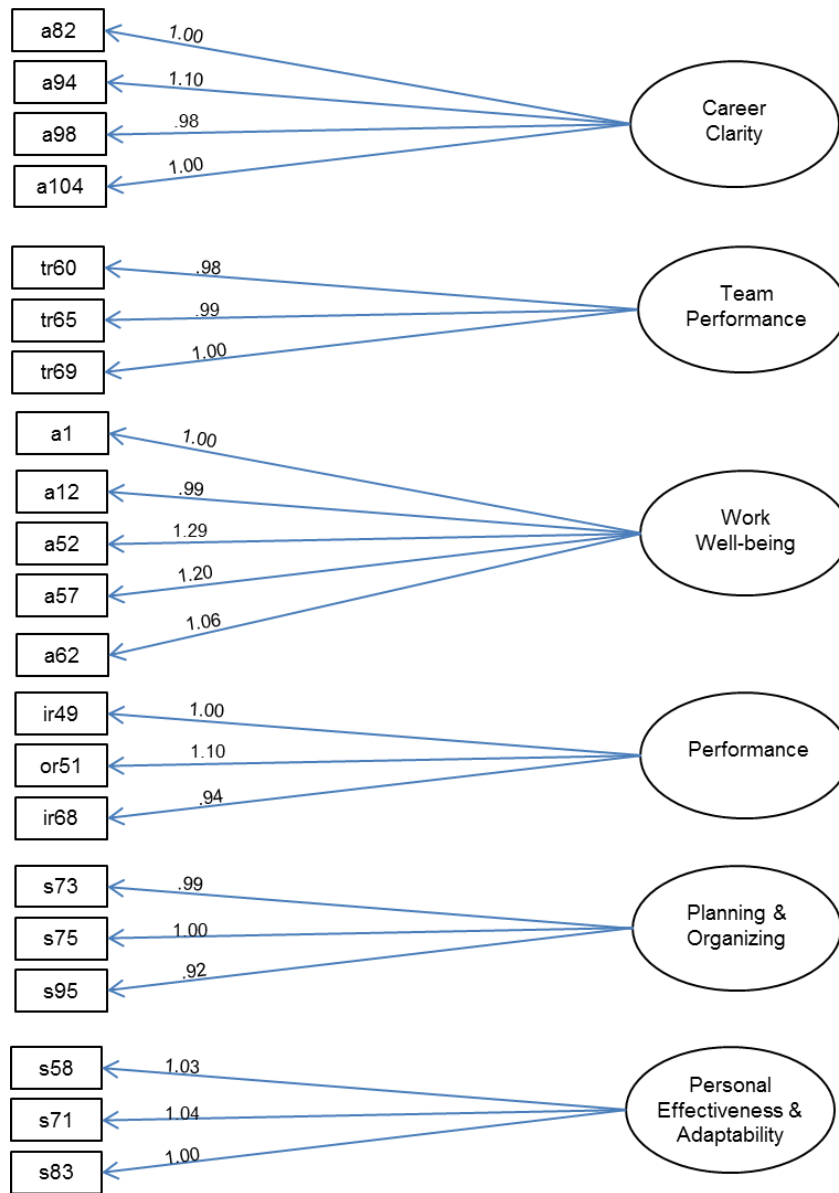
**Figure 5.9:** Proposed six factor model of perceived coaching effectiveness

**Discussion: Study 2c**

The questionnaire administration and scale validation process resulted in two competing models for the perceived coaching effectiveness scale: a nine factor scale consisting of 27 items or a six factor scale consisting of 21 items. The results from the confirmatory factor analysis and the inter-correlations suggest that the six factor model provides the most statistically robust model for perceived coaching effectiveness. These six factors were named: career clarity; team performance; work well-being; performance; planning and organizing and personal effectiveness and adaptability.

**General Discussion**

Self-report questionnaires are an important tool in evaluating the effectiveness of training, learning and development interventions such as coaching. In order to be confident that the intervention being evaluated has produced the desired outcomes it is imperative to assess the construct validity of the measurement tools being utilised. To-date, this has been an under researched area with a noticeable absence of any such valid self-report measure of coaching outcomes. In response to this gap in the literature, a pilot study has been conducted which started the scale development process and provided some initial confirmation of content, construct, convergent and discriminant validity. The model provides a fine-grained analysis of the specific outcomes that coachees perceive to occur as a result of coaching. While the perceived coaching effectiveness scale is only able to assess the coachees' perceived outcomes from coaching, it is a step in the right direction to begin the process of building a 'toolbox' of measurement methods that can be used by organizations, coaches and researchers when evaluating coaching outcomes.

**Limitations.** A number of limitations in the methodological approach followed in this study can be identified.

Firstly, the aim of this study was to adopt a deductive start-point from which the perceived coaching effectiveness scale could be developed. This deductive start-point was achieved, however changes in the factors throughout the scale development process meant that the development became highly data driven and consequently superseded the underlying theory. DeVellis (2012) asserts the importance of grounding scale development in theory as without this, the content of the scale could easily drift into unintended domains. The subsequent highly data-driven approach in this study meant that one cannot be confident that the final scale is measuring the original intended phenomena.

With respect to the questionnaire administration stage during the factor analysis, Hinkin's (1998) guidance of a minimum of 200 participants was applied. However, alternative recommendations such as Bryant and Yarnold (1995) and MacCallum, Widaman, Zhang, and Hong (1999) suggest that a minimum ratio of participants to items is 5:1. If this ratio were applied to the present study, a minimum sample of 550 participants would be required, substantially higher than the sample of 201 utilised.

In addition to recommending a higher participant to item ratio than provided in this study, best practice guidelines recommend utilising multiple independent samples for different stages of

exploratory and confirmatory factor analysis (Hinkin, 1998). A challenge in this study was that only participants who had received coaching could participate in the questionnaire administration stage; this posed significant challenges in participant recruitment. Further research should aim to examine the scale with the required analysis on multiple, independent, large-scale samples.

Finally, convergent and divergent checks were conducted in accordance with guidance from DeVellis (2012), however it could be argued that this approach is too light to achieve a truly robust scale. Future research should seek to more comprehensively examine convergent and divergent validity. As a minimum, Fornell and Larcker's (1981) average variance extracted analysis should be applied. In average variance extracted analysis (AVE), the square root of every AVE value belonging to each latent construct is tested to see whether it is larger than any correlation among any pair of latent constructs. When comparing AVE with the correlation coefficient, divergent validity is confirmed if the items of the construct explain more variance than do the items of the other constructs. Convergent validity is confirmed if the level of variance captured by the construct is greater than the level due to measurement error with values of 0.5 viewed as acceptable and 0.7 considered very good. Additionally, the discriminant validity of the perceived coaching effectiveness scale could have been explored by including the results from other similar scales during the analysis. Unfortunately, no other suitable scales could be identified to form a comparison for establishing discriminant validity however future research should seek to explore this further. For example, future research could seek to collect data from other sources on the constructs measured in the scale in order to establish greater confidence in the validity of the scale and also to ameliorate the common source concerns when all data is collected from a single source (Hinkin, 1998).

**Implications for research and future directions.** Future research should seek to address the limitations in this development highlighted above. Primarily, future research should seek to administer the full list of scale items to multiple, independent, large samples in order to conduct further iterations of exploratory factor analysis and assess the factor structure utilising confirmatory factor analysis on an independent sample. Furthermore, convergent and divergent validity should be explored more comprehensively in future samples utilising Fornell and Larcker's (1981) approach described above. Finally, discriminant validity could be established by administering the scale alongside independent scales assessing similar constructs. This process would provide further confidence in the reliability and validity of the perceived coaching effectiveness scale.

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**Conclusion**

In response to a significant gap in the literature regarding reliable and valid methods of measuring coaching outcomes, a deductive approach with a multi-stage development process was adopted to conduct this pilot study aimed at starting the process of developing the perceived coaching effectiveness scale. This process resulted in a 21 item scale with six factors: career clarity; team performance; work well-being; performance; planning and organizing and personal effectiveness and adaptability. The key contribution of this scale is that it is a step in the right direction in the process of the creation of a theoretically driven measure that has been empirically tested, and can be used in practice and research to effectively evaluate the coachees' perceived outcomes of coaching. Future research is now needed to extend this development process and further validate the scale with multiple, independent samples of participants. The next chapter presents the intervention study in which the question 'For whom is coaching most suited?' will be addressed. As part of this intervention study, the scale developed and presented in this chapter will be utilised as one of the outcomes measured.

# CHAPTER SIX

## Do Individual Differences Impact on Coaching Effectiveness in an Organizational Context?

### Chapter Summary

This chapter presents the final study of this thesis in which the impact of coaching was evaluated and the conceptual model presented in chapter three was tested with an organizational sample. 53 participants were provided with four coaching sessions and compared to a control group of 31 participants who received no coaching. Data was collected before coaching commenced, directly after coaching had been completed and again after a three month time lag. A further 352 employees provided data on the participant's performance at the same three time points. Analysis suggested that the coaching intervention had a significant impact on self and others-ratings of performance, however only self-ratings remained significant when compared to the control group. Significant interaction was found for enthusiasm, intellect and orderliness, providing support for the predication that coaching has a greater impact on outcomes for some individuals based on their personality traits. The data indicated that participants perceived the coaching to have had a positive impact on all six of the perceived coaching effectiveness factors. Regression analysis suggested that perceived coaching effectiveness was significantly associated with self-ratings of performance, intrinsic and extrinsic job satisfaction and organizational commitment. Exploration of the theoretical model indicated that a number of mediating relationships were present as predicted. Assertiveness, enthusiasm, industriousness and intellect had an indirect effect on outcomes, mediated by BAS drive, mastery and performance approach goal orientation and perceived coaching effectiveness. The study presented in this chapter addresses two of the research aims for this thesis. Firstly, by conducting a longitudinal field experiment, the effectiveness of coaching in an organizational context is explored. Secondly, by testing the conceptual model presented in chapter three, this study provides an examination of the effects of individual differences on coaching outcomes, addressing the question 'For whom is coaching most suited?'

### Introduction

In chapter two, a framework outlining the types of outcomes that coaching may produce was proposed. The meta-analysis presented in chapter four provided evidence that coaching has a significantly positive impact on a range of workplace outcomes and also gave an indication of

some of the practice moderators that are likely to impact on coaching outcomes (use of multi-source feedback and type of coach). In chapter five, a conceptually driven, reliable and valid scale to measure perceived coaching effectiveness was presented. This chapter integrates the findings of these chapters and also addresses the final research aim of this thesis by attempting to answer the question 'For whom is coaching most suited?'

Following a discussion of the relevant theoretical literature in chapter three, a conceptual model of individual differences and coaching effectiveness was presented. This model is depicted in Figure 6.1. In order to provide the first exploration of this model, this chapter describes an intervention study where coaching was provided to an organizational sample.
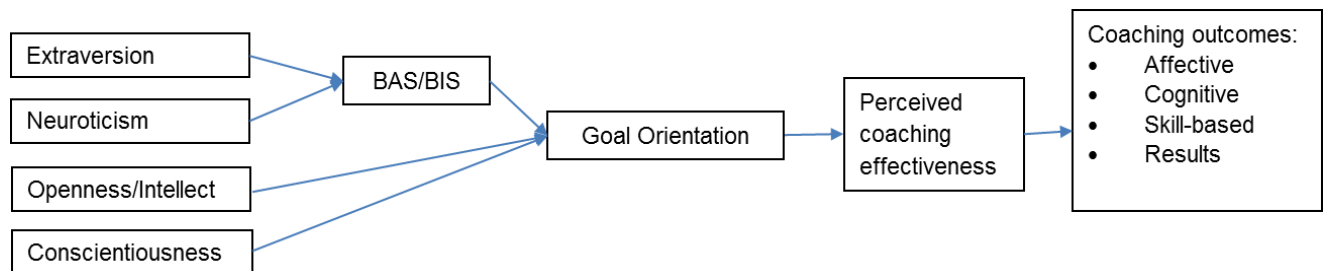


**Figure 6.1**: Model of individual differences and coaching effectiveness
Note: BIS – behavioural inhibition system; BAS – behavioural activation system

**Hypotheses development.** Based on the literature presented in chapter three, a series of hypotheses are detailed below that will be examined in this study.

In chapter four, the findings of the meta-analysis on coaching effectiveness were presented. Despite the mixed evidence on coaching outcomes shown in the primary studies, the meta-analysis suggested that coaching has a positive impact on overall outcomes as well as at the affective, skill-based and individual results levels. Based on this evidence, it is predicted that the coaching provided to the participants in this intervention study will have a positive impact on outcomes. Therefore it is predicted that:

**H6.1:** The coaching intervention will significantly improve coaching outcomes when the experimental group is compared to the control group across the three time points.

The literature has demonstrated that dispositional constructs such as the five factor model of personality have considerable predictive validity regarding a variety of performance criteria

(Ones, Dilchert, Viswesvaran & Judge, 2007), as described in detail in chapter three. The empirical evidence suggests that individual differences are related to performance in training, therefore it is anticipated that the disposition of the coachee will influence how effective coaching is. The anticipated influence of the facets of the big five on coaching outcomes was explored in detail in chapter three. Based on this evidence, the following predictions are made:

**H6.2a:** The impact of coaching will be greater for people who are high on enthusiasm and assertiveness

**H6.2b:** The impact of coaching will be greater for people who are high on industriousness and orderliness

**H6.2c:** The impact of coaching will be greater for people who are low on withdrawal and volatility

**H6.2d:** The impact of coaching will be greater for people who are high on intellect

In chapter five, the case was presented that there is a significant gap in the literature regarding reliable and valid methodology for measuring coaching outcomes. In response to this gap, a theoretically driven scale was developed that measured six factors of perceived coaching effectiveness (career clarity, team performance, work well-being, performance, planning and organizing and personal effectiveness and adaptability). In the discussion section of chapter five, it was highlighted that the next stage in the development of the scale is to ascertain its predictive validity. One way this could be achieved is to correlate the scores on the perceived coaching effectiveness scale with other potential outcomes of coaching such as multi-source feedback; job satisfaction; goal achievement and financial performance. By exploring potential relationships between perceived coaching effectiveness and other coaching outcomes, it may be possible to establish whether the perceived coaching effectiveness scale is a proxy indicator for actual coaching outcomes. Utilising perceptions of effectiveness as an indicator of actual outcomes is an approach which has been adopted in the wider learning and development literature. Research in training and mentoring have previously utilised participant's perceptions of the effectiveness of the intervention as an indicator of actual effectiveness (Allen, Eby, & Lentz, 2006; Facteau, Dobbins, Russell, Ladd & Kudisch, 1995; Lim & Morris, 2006; Sahinidis & Bouris, 2007).

Consequently, the next set of analyses will explore the relationships between the perceived coaching effectiveness factors and the coaching outcomes measured in this study. It is

anticipated that participant's perceptions of the impact of coaching, as indicated by scores on the perceived coaching effectiveness scale, will be positively related to outcomes. Therefore it is predicted that:

**H6.3:** Perceived coaching effectiveness scores will be positively associated with coaching outcomes (self and others-ratings of performance; intrinsic and extrinsic job satisfaction and organizational commitment).

Hypothesis one predicts that the coaching intervention will significantly improve coaching outcomes when the coaching group is compared to the control group. Hypothesis two predicts that the impact of coaching will be greater for people who are high on facets of extraversion, conscientiousness and openness and low on facets of neuroticism. Hypothesis three predicts that perceived coaching effectiveness scores will be significantly associated with scores on coaching outcomes. Therefore, based on the logic of the arguments presented so far, it is anticipated that the individual differences variables will be significantly associated with the perceived coaching effectiveness factors to reflect the proposed differences in the impact of coaching for participants based on differing dispositions. Therefore it is predicted that:

**H6.4a:** Enthusiasm, assertiveness, industriousness, orderliness and intellect will be positively associated with perceived coaching effectiveness
**H6.4b:** Withdrawal and volatility will be negatively associated with perceived coaching effectiveness

Hypothesis two predicts that there will be a significant difference in the impact of coaching based on the coachee's disposition. The theoretical model depicted in Figure 6.1 proposes an explanation for these differences with the approach/avoidance motivation (BIS/BAS) framework and goal orientation predicted as having a mediating influence on coaching outcomes. In chapter three, approach/avoidance motivation and goal orientation were outlined as the underlying mechanisms which explain why individual differences will impact on coaching outcomes. The specific, predicted associations between BIS, the sub-scales of BAS, goal orientation and the facets of the big five were explored in chapter three. Based on this, it is predicted that:

**H6.5a:** Assertiveness will indirectly influence coaching outcomes via BAS fun-seeking, BAS drive, mastery and performance approach goal orientation and perceived coaching effectiveness.

**H6.5b:** Enthusiasm will indirectly influence coaching outcomes via BAS fun-seeking, BAS drive, BAS reward responsiveness, mastery and performance approach goal orientation and perceived coaching effectiveness.

**H6.5c:** Industriousness will indirectly influence coaching outcomes via mastery goal orientation and perceived coaching effectiveness.

**H6.5d:** Orderliness will indirectly influence coaching outcomes via mastery goal orientation and perceived coaching effectiveness.

**H6.5e:** Withdrawal will indirectly influence coaching outcomes via BIS, performance avoidance goal orientation and perceived coaching effectiveness.

**H6.5f:** Volatility will indirectly influence coaching outcomes via BIS, performance avoidance goal orientation and perceived coaching effectiveness.

**H6.5g:** Intellect will indirectly influence coaching outcomes via mastery goal orientation and perceived coaching effectiveness.

**Method**

**Research design.** A longitudinal field experimental design was used for this study. This design was deemed most suitable as it allowed for the impact of coaching to be evaluated on the participants across a longitudinal period in addition to allowing comparisons to be drawn with a control group who received no coaching. By conducting the research within the field, in this instance the participants' employing organization, the impact of the intervention could be evaluated in a real-life setting (Christensen, 2007). Furthermore, by collecting data at three time points, before the intervention was provided (time one – pre-measure) immediately after the intervention (time two – post measure) and three months after the intervention (time three – follow-up), any delayed impact of the coaching intervention or additional changes over time could also be assessed. The research design is summarised in Figure 6.2.

|                      | T1  |     | T2  |     | T3  |
|----------------------|-----|-----|-----|-----|-----|
| **Experimental Group** | O   | X   | O   |     | O   |
| **Control Group**    | O   |     | O   |     | O   |

**Figure 6.2:** Illustration of research design
Note: O = data collection point, X = Intervention

**Study setting.** The research was conducting within a UK non-profit distributing organization. The organization provides housing, care and community services across England and Scotland. As a non-profit distributing organization, any surplus income is re-distributed across the services and reinvested into business growth rather than distributed to shareholders. The organization is structured with a parent company maintaining overall control of the subsidiary companies that run each of the organization's business functions. Within this parent company, a group board comprising of up to seven non-executive members, the chief executive and up to three co-opted members, oversee all activities undertaken by the organization. The group board delegates all day-to-day management activities to the chief executive who works alongside a further five executives to ensure that the organization meets the groups objectives and targets. Under the company executive sits a traditional hierarchical structure with various levels of management supporting the different business functions. The organization's revenue for 2014 was £592.3m (£474m for 2013) and the organization employees approximately 11,000 individuals. These employees are split between roughly 1,100 based within their head office and the rest spread around the housing, care and community services throughout England and Scotland.

**Access and ethics.** Following a successful application to the University research and ethics committee, the research proposal was discussed with a personal contact of the doctoral researcher who worked within the study organization. Following this, a meeting was organized between the researcher and a member of the executive to discuss the research proposal. A written proposal was then submitted to the board of executives which outlined the research procedure and the benefits to the organization. Realistic time frames and ethical assurances regarding confidentiality were provided. Following approval from the board of executives to proceed with the study, two pilot coaching sessions were conducted with employees identified by the HR team within the organization in order to confirm the alignment of the researcher's coaching approach and the organization's approach to personnel development. Following successful completion of the pilot coaching sessions the project was given full approval. A

contact within the learning and development team was assigned to the researcher in order to provide access to any information that was needed to successfully complete the research.

**Procedure.** In order to effectively manage who would be invited to participate in the coaching intervention project from the organization's 11,000 employees, it was decided by the organization that the coaching would be introduced to employees following completion of one of the organization's training sessions (such as their leadership development programme).

The researcher provided a brief, five minute presentation during the training sessions to introduce the study to the employees and invite them to participate. The researcher was supplied with a list of the names and email addresses of the delegates at the training session and employees were sent a follow-up email the day after the presentation to ask them to confirm whether they would like to sign up to the programme and to receive coaching. Each training cohort had between 10 to 15 delegates, therefore, in order to achieve the desired sample, multiple training sessions were attended by the researcher. Referrals could also be made by managers directly to the researcher for staff they felt would benefit from coaching. Participants were assigned a group number based on referral to the research project (i.e. training session, direct referral). This enabled the researcher to manage different cohorts of participants progressing through different stages of the research project at different times.

When employees replied to the email invitation to participate in the study, they were added to the participant list, provided with a participant number, randomly assigned to either the coaching group or the waiting list control group and sent the electronic link to the online time one measure. A copy of the time one questionnaire with informed consent form used in this study can be found in Appendix C. Participants were also asked to provide the names and email addresses of three individuals who could be contacted to provide feedback on the participants' performance. These individuals were the participant's supervisor, a colleague and a direct report. For those participants who did not have any direct reports as they were not currently in a supervisory role, a second colleague was provided. Once these three names were obtained, these feedback contacts were also assigned a unique participant number that linked them to the intervention participant and emailed a link to the questionnaire. A copy of the email invitation sent to feedback participants, the informed consent form and questionnaire can be found in Appendix D. All participants were given a maximum of two weeks to complete this pre-measure before the start of the intervention. If towards the end of this two week period the questionnaire

had not been completed the participant was emailed with a reminder to prompt them to complete the questionnaire within the deadline. Once the questionnaires had been completed, all participants assigned to the coaching group where sent an email asking them to contact the researcher to book in their first coaching session. Coaching sessions were booked on an individual basis directly with the researcher. Participants were offered time slots during the working day or in the evening. Once a time and date had been confirmed for the coaching session, a confirmation email with the information sheet and goal assessment was sent to the participant confirming the necessary details for the coaching session (see Appendix E).

Participants were all provided with four, one hour coaching sessions. These coaching sessions were generally spread over a monthly period, however depending on the participant's schedule and particular issues being discussed, the interval between coaching sessions did vary. The minimum gap between coaching sessions was one week and the maximum gap was 19 weeks. The most frequent gap between coaching sessions was four weeks. The coaching sessions were all conducted by telephone. The decision to conduct the coaching by telephone was a result of the findings of the meta-analysis reported in chapter four that demonstrated that coaching format does not significantly moderate the impact of coaching. Furthermore, by providing the coaching by telephone meant that participation in the intervention was not restricted based on geographic location and could therefore be offered to all employees working within the organization regardless of where they were located.

After completing all four coaching sessions, participants were emailed the time two questionnaire and once again given a period of two weeks to complete the questionnaire (Appendix C). The feedback contacts were also emailed the time two questionnaire. Occasionally, new feedback contacts were added or replaced due to changes in personnel over the course of the intervention. The feedback questionnaires at time two were the same as those used at time one (Appendix D). If questionnaires had not been completed close to the deadline date then an email reminder was sent to prompt completion of the questionnaire. The final questionnaire was emailed out to participants and feedback contacts three months after the end of the intervention. For all participants, the time three questionnaire was the same as the time two questionnaire. Once again, a two week time period was provided to allow participants to complete the questionnaires and a reminder email was sent if necessary to prompt completion. When conducting longitudinal research, it is important to consider the time lag between data collection points to ensure that the timeframes chosen are theoretically meaningful (George &

Jones, 2001; Mitchell & James, 2001). The time two data collection point was dictated by the end of the intervention, however the time three data collection point needed to be sufficiently long enough from time two in order for any longer-term or delayed changes in outcomes to be recorded. Previous longitudinal research in training, learning and development has used lags from 10 weeks to 24 months (Grant, 2003; Green, Oades & Grant, 2006; Libri & Kemp, 2006; Miller, Yahne, Moyers, Martinez & Pirritano, 2004; Zumrah, Boyle & Fein, 2013). A meta-analysis on transfer of training by Blume, Ford, Baldwin and Huang (2010) found that the mean time lag in field studies between training and measure of transfer was 15 weeks. For the present research, it was felt that the three month time lag between time two and time three would be sufficient enough to allow any significant impact of the coaching to occur.

Participants assigned to the control group were sent an email after they had completed the time one questionnaire to notify them that they had randomly been assigned to the waiting list, to reiterate the rough timings of the further two questionnaires and to explain that they would be contacted again after the final questionnaire had been completed at time three to have their coaching sessions scheduled. Participants in the control group were sent their time two questionnaire when all of the participants in the experimental group in their cohort had completed the four coaching sessions. The time three questionnaires were sent out three months after the time two questionnaires. Time two and time three questionnaires were the same for the control group participants and can be found in Appendix C. There was no further contact between the participants in the control group and the researcher.

Participants were recruited from April 2013 until April 2014 and consisted of a total of 26 separate cohorts of participants. Coaching started with the first cohort in May 2013 and the final coaching session with participants in the experimental group in the last cohort was completed in September 2014. Coaching was provided to participants in the control group once all data had been collected for their cohort. This control group coaching did not form part of the research project however was provided to ensure that all participants had equal opportunity to receive the coaching intervention therefore ensuring that no individual would be at a disadvantage.

**Study sample.** A total of 157 employees expressed an interest in participating in the coaching project. Of this sample, a total of 138 questionnaires were completed at time one, representing a response rate of 87.90%. Each of these participants was asked to nominate three colleagues

who could complete a feedback questionnaire. A total of 394 feedback questionnaires were sent out at time one and 352 were successfully completed, representing a response rate of 89.34%.

At time two a total of 102 questionnaires were sent out to coachee participants. The decrease in the number of questionnaires sent out at this time point compared to the number completed at time one ($n = 138$) was due to attrition of participants in the experimental group. Only participants in the experimental group who had successfully completed all four coaching sessions were sent a time two questionnaire. Therefore 53 participants in the experimental group were sent a time two questionnaire and 100% of questionnaires were completed successfully. All participants assigned to the control group at time one were sent a time two questionnaire ($n = 49$) with 31 control group questionnaires being successfully completed at time two. This represents a response rate of 63.27%. At time two, for the experimental group a total of 154 feedback questionnaires were sent out and 116 were successfully completed (a response rate of 75.32%). For the control group, a total of 148 feedback questionnaires were sent out and 91 were successfully completed (a response rate of 61.49%).

At time three a total of 82 questionnaires were sent out to participants. The decrease in the number of questionnaires sent out at this time point compared to the number completed at time two ($n = 84$) is due to the attrition of two participants in the experimental group who were known to have left the organization with no forwarding address. Therefore 51 participants in the experimental group were sent a time three questionnaire and 43 questionnaires were successfully completed, representing a response rate of 84.31%. Only participants in the control group who had completed a time two questionnaire were sent a time three questionnaire ($n = 31$) with 27 control group questionnaires being successfully completed at time three. This represents a response rate of 87.10%. At time three, for the experimental group a total of 150 feedback questionnaires were sent out and 96 were successfully completed (a response rate of 64%). For the control group, a total of 109 feedback questionnaires were sent out and 70 were successfully completed (a response rate of 64.22%).

Therefore, a total of 53 participants completed the coaching intervention and the questionnaires at time one and time two and 43 participants completed the coaching intervention and the questionnaires at all three time points. For the control group, a total of 31 participants completed questionnaires at time one and time two and 27 participants completed questionnaires at all three time points. A degree of attrition was expected due to the longitudinal design of this study

and the response rates for this study are still above the average of 52.7% for organizational research reported by Baruch and Holtom (2008).

The demographics of the coachee participants were 69% female; the ethnicity was split between 89.3% white; 2.4% mixed – white and black Caribbean; 1.2% white and black African; 1.2% Indian; 1.2% Pakistani; 2.4% African; 1.2% Caribbean and 1.2% of participants specified 'other'. For highest levels of education, 2.4% of participants had no formal qualifications; 11.9% specified secondary school (GCSE's, O levels or equivalent); 20.2% specified sixth form college, A levels or equivalent; 41.7% specified undergraduate degree and 23.8% specified postgraduate degree. The mean age of participants was 36.79 ($s.d$ = 11.02), the mean number of months participants had worked in their current role was 34.18 ($s.d$ = 43.30), the mean number of months participants had worked for the organization was 50.08 ($s.d$ = 51.22), and the mean number of hours worked a week was 38.66 ($s.d$ = 5.02). The demographics of the feedback participants were 72.5% female; the ethnicity was split between 92.7% white; 1.7% mixed – white and black Caribbean; 1.7% Indian; 0.4% Pakistani; 0.9% African; 0.9% Caribbean; 0.4% specified 'other' and 1.3% of participants did not specific their ethnicity. For highest level of education, 3.9% had no formal qualifications; 15.5% specified secondary school (GCSE's, O Levels or equivalent); 22.4% specified sixth form, college, A levels or equivalent; 36.2% specified undergraduate degree; 21.6% specified postgraduate degree and 0.4% left this question blank. The average age of feedback participants was 38 ($s.d$ = 10.90), the mean number of months participants had worked in their current role was 37.47 ($s.d$ = 45.61), the mean number of months participants had worked for the organization was 56.23 ($s.d$ = 55.07), and the mean number of hours worked a week was 37.98 ($s.d$ = 6.46).

**Intervention.** The coaching intervention consisted of four, hour long telephone coaching sessions, spread roughly over a four month period (although the gap between coaching sessions varied as detailed earlier in the procedure section of this chapter). The doctoral researcher provided the coaching for all participants. In the field of coaching research, the lead researcher or members of the research team often take on the role of coach (e.g. Cerni, Curtis & Colmar, 2010; Kochanowski, Seifert & Yukl, 2009). To ensure competence in providing coaching, in addition to undergraduate and postgraduate degrees in psychology, the researcher also completed a tertiary qualification in coaching psychology. For the coaching, a systematic technique based on a cognitive behavioural approach was used in all of the coaching sessions. This technique also incorporated the key aspects outlined in chapter three as being critical for

coaching success: goal setting, experiential learning and psychological fidelity. The process outlined below provides a detailed account of the procedure used in each coaching session and explains how these key aspects were incorporated.

The underlying framework utilised to structure the coaching sessions was Whitmore's GROW (i.e. Goals, Reality, Options, Will) model (1992). GROW is one of the most popular coaching approaches (Edgerton & Palmer, 2005) and has been used in a number of empirical coaching studies (for example Grant et al., 2010; Green, Grant & Rynsaardt, 2007; Spence, Cavanagh & Grant, 2008). The GROW model works by providing a structured approach to the coaching conversation which allows the coachee to gain an increased awareness of their aspirations, a greater understanding of their current situation, understand the possibilities open to them and the actions they need to take in order to progress towards achieving their aspirations.

Before the first coaching session, the coaching information sheet and the coaching goal assessment (provided in Appendix E) were sent to each participant electronically. The purpose of the coaching information sheet was to build credibility of the researcher as a coach and also to guide the participants' expectations and dispel any anxiety about the coaching. The coaching goal assessment encouraged the participant to start reflecting on factors that are important to them, the issues they wish to work on and any obstacles or barriers that they perceive stand in their way before the coaching session. The completed coaching goal assessment was returned to the researcher before the coaching session so that it could be reviewed in preparation for the session. These pre-coaching activities helped to encourage the participant's engagement with the coaching process by preparing them for the session and activating their thought process in relation to their goals, consequently making the first coaching session more productive.

The conditions for the telephone coaching sessions were carefully controlled. All participants were asked in the confirmation email to ensure that they arranged to take the coaching call in a quiet, confidential and private space where they could talk without fear of being overheard (see Appendix E). It was also ensured that the researcher made the coaching call from a private office which was free from disturbances. For each session, the researcher had a note pad and pen, a copy of the prepared goal assessment (Appendix E) and a blank coaching contract (Appendix F). For sessions two, three and four, the researcher also ensured that the notes of the previous session(s) were available. In preparation for all coaching sessions, the researcher reviewed the notes and coaching contract with coaching objectives before the start of the call.

A systematic approach was taken to the coaching sessions with the same structure being followed for all participants. Firstly, a brief overview of the structure of the coaching intervention was provided. This included explaining the number of sessions that would be provided; the length of each session; explaining that notes would be taken for reference (to be used for the subsequent coaching sessions) and that these would be stored securely and did not form part of the research. Participants were also reminded that the sessions were completely confidential. The coaching contract was introduced, explaining that the objectives to be worked on in the coaching session would be discussed and the outcome measures for the objectives would be decided in order to measure if the participant had achieved the objectives. Finally, the time lag between the sessions was outlined. Much of this information had already been provided to the participant in the coaching information sheet, however it was useful to reiterate and it also provided a good introduction to the session to allow the participant to relax.

The next stage in the coaching sessions involved asking the participant to provide an overview of their current situation. In this study, that meant that the participant described their current job role and provided the context for the coaching session. The participant was then asked to describe what they enjoyed about their job role and anything they found particularly challenging, frustrating or that they disliked. Specific areas of interest would then be picked out from these answers and the participant asked to elaborate. For example, participants may be asked to expand on or provide examples of any issues they had mentioned that they found particularly challenging. By the end of this stage, a picture had started to form regarding what the participant's current situation was at work and what some of the key development opportunities were.

The next stage involved the participant explaining and elaborating on their responses to the coaching goal assessment. This section forms the G in the GROW model: ascertaining the goal as well as overlapping with the R stage: exploring the reality. Once the coaching goal assessment had been discussed, the next stage was to complete the coaching contract together (Appendix F). From the discussion so far, the researcher would work with the participant to formulate SMART objective(s) (Specific, Measurable, Achievable, Realistic and Time bound). Once the objective had been written in the coaching contract, the next stage was to record outcome measures for each objective. To do this, the participant would be asked: "How could you measure if this objective has been achieved? What would be different? What

would this look like?" Types of outcomes provided by participants may have been vague (such as 'I will feel more confident') as well as specific ('I will ensure that I hold a team meeting at least once a week'). It was important to record as many different outcomes as possible. This is a critical stage in the coaching session as it conceptualises why that goal or objective is important. It clearly states why the participant should bother exerting the additional effort it will require to achieve that objective. This relates to the first key theory in relation to the theory of coaching effectiveness: goal setting. Goal setting theory has clearly established that specific and challenging goals increase performance (Locke & Latham, 2002). Goal setting theory has also established that these goals need to be meaningful. The outcome measures demonstrate to the participant how that objective is meaningful. These outcome measures should relate to the areas the participant identified as important to them in the goal assessment. For example if the participant identified that they want to improve their delegation skills because that will allow them to free up some time to spend on strategic planning, then the outcome measures should illustrate how (even if in a small way) achieving the specific objectives will contribute to achieving this overall goal, reflecting what is important in the participants life (i.e. this will allow me to perform better in my job as I need to work more strategically and less operationally). A copy of the coaching contract was emailed to the participant at the end of the session and a copy was retained by the researcher.

Once the coaching contract had been completed, the next stage was to ask the participant to select which objective (if there was more than one) that they would like to tackle first. This objective should be the one that will have had the greatest immediate impact or was concerning the participant the most at that moment in time. Once the objective had been selected, using the GROW model as a framework, the 'Reality' of the situation was explored. Utilising open questioning, the participant would be asked to describe this issue in more detail. They would be asked to give (ideally recent) examples that illustrate the impact of the issue. Probing, Socratic (i.e. how do you know this? what do you mean by? what are you assuming?) and hypothetical questioning (i.e. what would happen if....? what does the best case scenario look like? what does the worst case scenario look like? what would life be like if you achieved this?) would then be used to explore the issue in greater detail. The aim of this stage was to paint a picture in relation to what the real, underlying issue was with the objective. For example, was it emotional, practical or a combination of the two? The aim of this stage was also to encourage the participant to fully reflect on the issue and their current situation. This stage in the coaching process relates to the second key theory in the theory of coaching effectiveness outlined in

chapter three: experiential learning theory. Kolb's (1984) experiential learning theory is a useful model that can explain why coaching is effective at producing workplace outcomes. Kolb's (1984) learning cycle consists of four stages: concrete experience, reflective observation, abstract conceptualization, and active experimentation. During the coaching process, participants are encouraged to engage in two of these stages: reflective observation and developing abstract hypotheses: abstract conceptualisation. The probing questions challenge the participant to reflect on what the current reality is in relation to their goal. The hypothetical questioning encourages the participant to generate abstract hypotheses about potential alternative outcomes. This stage of the experiential learning cycle is developed further in the next stage (options) of the coaching process.

Once the reality has been adequately explored, the nature of the coaching session tended to vary depending on the issues the participant presented with. The two main themes of issues were either emotional or practical and the method of addressing them in coaching varies. Practical issues will be discussed first.

During the goal assessment and coaching contract discussion, the participant may have identified only practical rather than emotion-based obstacles to achieving their goal. This may be because either an emotional obstacle was not present or the participant did not wish to acknowledge or address the obstacle at the emotional level. With the practical issues/obstacles, the structure of the coaching session sticks very closely to the traditional GROW format, therefore the next stage was to explore the options in greater detail. The participant would be asked to identify what all of their options were in relation to improving this area. A list of potential options would then be created. If the participant was struggling to think of options then they would be encouraged by asking them to think creatively: no idea was too crazy or unrealistic. It would be emphasised at this stage that the participant is not expected to act on these options at this stage; the purpose is to simply think of any possible option. Once a rough list had been generated, the advantages and disadvantages of each option could be explored. The participant would be asked to explore how realistic each option was. For example, was it achievable and what were the blocks that may have stood in their way? When blocks were identified, the GROW process was repeated with these blocks (i.e. what was the reality, what were the options of overcoming the blocks). At the end of this process, the participant would have a list of ideas of actions to be taken and some indication of which ideas were preferred and most realistic.

With emotional issues, when appropriate, the SPACE technique was used. This model is based on the cognitive-behavioural approach and proposes that all behaviour is linked to underlying thoughts and feelings (Edgerton & Palmer, 2005). The assumption with this approach is that it is faulty thoughts and feelings that can stand in the way of the achievement of goals and only by addressing these faulty thoughts and feelings and realigning them to reflect the reality of the situation can an individual's goals be achieved. The SPACE model involves drawing out the SPACE diagram with the participant (see Figure 6.3). The S represents the situation: a sentence describing the issue. This works best if it is a specific and recent example (see the note below on psychological fidelity). The P is the physiological outcomes the participant experiences when they are in that situation. The A is the actions that they take (i.e. how do they behave). The E is the emotions they are experiencing and the C is the cognitions (i.e. what are they thinking). The emphasis in completing this diagram is to illustrate how each of the sections link together. For example, an individual feels nervous and anxious about giving a presentation (emotional reaction), they start to get butterflies in their tummy, their hands shake and they perspire (physiological reaction). This means that when they are speaking they forget what they wanted to say, they stutter and may read from their notes (their actions). Each element of the SPACE model influences the other elements. However the most important element, according to this approach, is the cognitions. When working through this process, the participant usually reveals that the cognitions: their 'self-talk' is very negative and almost always inaccurate or exaggerated. To return to the presentation example, the participant's self-talk may be 'I am no good at presentations', 'I am going to mess this up', 'they will laugh at me' or 'they will think that I am stupid'.

Once these cognitions have been identified, it is important to challenge them and realign the cognitions to thoughts that are more helpful and less performance inhibiting. To achieve this, hypothetical questioning should be used to encourage the participant to think about what these thoughts mean by taking them to the next level. For example, 'so what if they think that you are stupid?' When questioned, participants should start to provide their underlying reasoning. In this presentation example this might be 'if they think that I am stupid then it probably is because I am stupid. I don't deserve to be here presenting to them. I am not capable of this and I will probably fail'. Once these underlying thoughts have been identified they can start to be challenged one by one. So for example the participant may be asked 'what evidence is there that you are stupid?' The aim is to start to build a case, built on reality not assumptions, which challenge the participant's faulty cognitions. Once these have been gathered, the participant

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should be asked to transform their faulty cognitions into reality based ones. For example 'I know that I am not stupid as I have performed well in the past throughout my education' or 'I know that I am capable in this job as they would not have hired me otherwise and I have received positive feedback from my manager'. It is important to keep these new cognitive statements grounded in reality. Therefore it is best to challenge statements that evidence can be used to challenge with. For example, it is more difficult to challenge the cognition 'they will think I am stupid' as the participant does not know what their colleagues are thinking. It is still possible to challenge this by exploring the 'mind-reading' that the participant is engaging in (i.e. 'I do not know what my colleagues are thinking unless I ask them'). Once the SPACE model has been worked through and the faulty cognitions challenged, the participant will be left with a diagram with a list of new cognitions that they can use and refer to if they feel that they are slipping back into old habits. They can also apply this technique to other emotion based challenges that they may face.

For emotional issues, where the SPACE model was utilised, the process of challenging the faulty cognitions with new, performance enhancing cognitions forms the O (options) stage in the GROW model. For both emotional and practical issues, once the options stage has been completed, the final stage of the GROW model can be achieved: the Will (to change). In this stage, it is important to return to the participant's goal and to emphasise to the participant why it is important to carry out the actions they agreed to in the proceeding stage. In this stage, the challenging nature of changing behaviour would be discussed and the recognition that only persistence could help the participant to succeed. Participants would be encouraged to maintain a clear focus on why the goal is important to them in order to help maintain persistence. During this stage the participant would also commit to dates in which they would implement the agreed options.
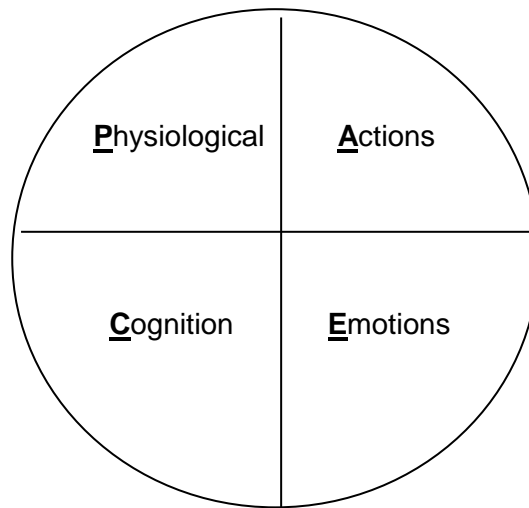
**Figure 6.3:** Illustration of SPACE model (Edgerton & Palmer, 2005)

Before the end of the coaching session, the date of the next session with the participant would be confirmed. By agreeing on a date during the session, it encouraged the participant to commit to the action. On the day of each coaching session a reminder email was sent to the participant to confirm that they were still free to participate in the coaching session at the agreed time. Apart from these reminder emails, no further contact between the researcher and the participants took place between coaching sessions. Coaching sessions two and three followed the same format. These sessions would commence with an update on progress towards the coaching objectives and in particular a discussion of whether any action points had been completed. Following these, the coaching objectives would continue to be worked on using either the GROW or SPACE models as described above.

In the final coaching session, after a general update had been provided by the participant, the coaching contract was revisited in detail. It would be explained to the participant that it is important to take stock of where the participant is now with the coaching objectives in relation to where they were at the start of the process. The objective(s) would then be read out to the participant along with the outcome measures agreed upon. The participant would be asked to report where they feel they are now with this objective. The participant would be encouraged and appropriately probed to discuss the implications of any changes or lack of progress. The participant would then be asked what steps they feel they need to take now to continue to work on this objective (if appropriate). This process was repeated for all objectives. After discussing the coaching contract, the next data collection stage would be outlined with the participant and

finally the coaching relationship would be formally closed. The participant would be thanked for their time and engagement in the coaching process.

It is important to note how this coaching process fits in with the final element of the theory of coaching effectiveness outlined in chapter three: psychological fidelity. A strength of coaching is its extremely high psychological fidelity to the workplace as the participant brings with them to the coaching meeting their unique workplace issues and challenges which can be discussed. This specific focus on their own objectives and their own workplace means that any actions agreed upon can easily be transferred into the workplace. The participant does not have to infer how the solutions discussed are applicable to them. They are directly applicable as it is their own unique issues that have been discussed. High psychological fidelity is embedded in the coaching intervention when it is performed using the approach detailed above.

**Data collection**

**Choice and adaption of items to suit sample and setting.** To test the theoretical model depicted in Figure 6.1, a number of scales were completed by the participants at three time points. For the most part, established measures were used and no adaption of items was needed as all of the established measures that were utilised were originally designed for a working sample. The measures used are described below. At time one, coachee participants completed the big five aspect scales; self-ratings of performance; BIS/BAS scales to measure approach/avoidance motivation; the achievement goal scale to measure goal orientation; job satisfaction and organizational commitment. Demographic data was also collected at time one. At time two and three, the coachee participants completed slightly different surveys depending on whether they were in the experimental group (so had received and completed the coaching intervention) or where in the control group. Experimental group participants provided self-ratings of performance; job satisfaction; organizational commitment; demographics and the perceived coaching effectiveness scale. There was also an opportunity for the participants to provide any qualitative comments on the coaching if they wished. Control group participants provided self-ratings of performance; job satisfaction; organizational commitment and demographics. For the feedback participants, the questionnaires were the same for all three time points. These questionnaires involved rating the coachee participant's performance on the feedback scale. Feedback participants also provided demographic data. Copies of the full questionnaires can be found in Appendices C (coachee participants) and D (feedback participants).

**Measures.** Guided by the theoretical model reported in chapter three and depicted in Figure 6.1, the predictor and outcome variables for this research study are described next. Participants completed all measures online.

***The big five aspect scales.*** Personality was measured using DeYoung, Quilty and Peterson's (2007) big five aspect scales. The big five aspect scales measure the personality traits in the five factor model, however each of the five factors has been further divided into two sub-traits that capture key aspects of the dimension. These aspects were derived empirically from factor analysis by De Young et al. (2007) of facet level scales from two major five factor instruments: the NEO PI-R (Costa & McCrae, 1992) and the AB5C-IPIP (Goldberg, 1999). The big five aspect scales consist of 100-items measuring the 10 facets of the big five (10 items for each scale). For this study the facets openness, compassion and politeness were not utilised as discussed in chapter three. The facets measured were: volatility ($\alpha$ = .77); withdrawal ($\alpha$ = .81); industriousness ($\alpha$ = .81); orderliness ($\alpha$ = .80); enthusiasm ($\alpha$ = .82); assertiveness ($\alpha$ = .88); and intellect ($\alpha$ = .75). Responses are measured on a five-point Likert scale with responses ranging from 1 (very inaccurate) to 5 (very accurate). Example items from the scale are: 'get angry easily' (neuroticism volatility); 'am filled with doubts about things' (neuroticism withdrawal); 'carry out my plans' (conscientiousness industriousness); 'like order' (conscientiousness orderliness); 'make friends easily' (extraversion enthusiasm); 'take charge' (extraversion assertiveness) and 'am quick to understand things' (openness/intellect intellect). Coachee participants completed this scale at time one.

***BIS/BAS scales.*** Carver & White's (1994) scales were used to measure approach/avoidance motivation. The 20 item scale assesses participant's behavioural inhibition with seven items ($\alpha$ = .84) and behavioural activation systems with behavioural activation consisting of three related scales: five reward responsiveness items ($\alpha$ = .71); four drive items ($\alpha$ = .82) and four fun-seeking items ($\alpha$ = .73). Participants rated their level of agreement on a four-point Likert scale with response ranging from 1 (strongly agree) to 4 (strongly disagree). Example items from the scale are: 'I worry about making mistakes' (behavioural inhibition system); 'When I get something I want, I feel excited and energized' (behavioural activation system: reward responsiveness); 'When I want something, I usually go all-out to get it' (behavioural activation system: drive) and 'I will often do things for no other reason than that they might be fun' (behavioural activation system: fun-seeking). Coachee participants completed this scale at time one.

***Goal orientation.*** Goal orientation was measured using Elliot and Church's (1997) achievement goal scale. This scale measured whether participants were mastery ($\alpha$ = .79), performance approach ($\alpha$ = .86) or performance avoidance ($\alpha$ = .79) goal oriented. This 18 item scale measured responses on a seven-point Likert scale with responses ranging from 1 (strongly disagree) to 7 (strongly agree). Example items from the scale are: 'I want to learn as much as possible in my current role' (mastery); 'It is important to me to do better than the other employees' (performance approach) and 'I worry about the possibility of getting a bad performance appraisal at work' (performance avoidance).

***Perceived coaching effectiveness.*** The scale developed in chapter five of this thesis was used to measure perceived coaching effectiveness. The scale consists of 21 items and six factors: career clarity ($\alpha$ = .86); team performance ($\alpha$ = .84); work well-being ($\alpha$ = .90); performance ($\alpha$ = .70); planning and organizing ($\alpha$ = .92) and personal effectiveness and adaptability ($\alpha$ = .79). Responses are measured on a five-point Likert scale with responses ranging from 1 (strongly disagree) to 5 (strongly agree). Example items include 'coaching has made me more focused on my intentions' (career clarity); 'my team works at a more consistent level' (team performance); 'I feel happier in my role' (work well-being); 'I work more efficiently, saving the organization money' (performance); 'I am able to plan more effectively' (planning & organising) and 'I am more flexible in the way I work to meet organizational objectives' (personal effectiveness and adaptability).

***Ratings of performance.*** Self and others-ratings of performance were gathered using the multi-source feedback survey used in the study by Smither et al. (2003). This survey was completed by both coachee participants' and feedback participants' at all three time points. Responses were measured on a five-point Likert scale with responses ranging from 1 (outstanding) to 5 (unsatisfactory). Example items include 'Makes tough choices and decisions in a timely fashion' and 'Provides clear goals'. The alpha reliability coefficient for this scale was $\alpha$ = .96.

For time one, 79.76% of coachee participants had all three feedback questionnaires returned, 17.86% of coachee participants had two feedback questionnaires completed and 2.38% of coachee participants had just one feedback questionnaire returned. For time two, 45.24% of coachee participants had all three feedback questionnaires returned, 34.52% of coachee participants had two questionnaires returned, 15.48% of coachee participants had one

questionnaire returned and 4.76% of coachee participants had no feedback questionnaires returned for time two. For time three, 31.43% of coachee participants had all three feedback questionnaires returned, 37.14% of participants had 2 feedback questionnaires returned, 24.29% of participants had one feedback questionnaire returned and 7.14% had no feedback questionnaires returned.

For the purpose of analysis, the average feedback participants' ratings of performance was calculated for each coachee participant. With regards to empirically justifying the aggregation of this data, it is necessary to demonstrate that more variance exists between the ratings of performance for the coachee participants than within the ratings of performance for the same participant by different colleagues, thus suggesting that responses can be attributed to actual reflections of the coachee participant's performance. ICC(1) estimates the extent to which individual level variability can be explained by the higher level unit (i.e. actual variance in coachee participants performance), whereas ICC(2) provides an estimate of the reliability of group means (Bliese, 2000). Evidence for discriminate validity is indicated if ICC(1) index has F-ratios greater than 1 (Klein et al., 2000) and ICC(2) values of above .50 are indicative of acceptable discriminate validity. Results for others-ratings of performance at the three data collection points are shown in Table 6.1. The ICC (1) indices for each time point were significant and above the recommended level of unity. The ICC (2) index for time three confirmed that there was greater variance between coachee participants on others-ratings of performance than within coachee participants. However, the ICC (2) indices for time one and time two were slightly below the recommended .50. Regardless of these slightly low ICC (2) values, researchers often conclude that aggregation is justified when the *F* test for these values is significant, which is the case here (Klein & Kozlowski, 2000).

|  | ICC(1) | ICC(2) | *F-Value* |
|---|---|---|---|
| Others-ratings of performance T1 | .98 | .42 | 1.74** |
| Others-ratings of performance T2 | .97 | .29 | 1.42* |
| Others-ratings of performance T3 | .99 | .51 | 2.02*** |

**Table 6.1:** Indices of discriminant validity for others-ratings of performance
Note: * $p < 0.05$; ** p<0.01; *** $p < 0.001$; T1 $n = 352$; T2 $n = 207$; T3 $n = 166$

*Job satisfaction.* Job satisfaction was measured using Warr, Cook and Wall's (1979) scale. This scale measures the degree to which an individual reports satisfaction with intrinsic (α = .83, 8 items) and extrinsic features (α = .80, 7 items) of their job. This 15 item scale measured responses on a 7-point Likert scale ranging from 1 (I'm extremely dissatisfied) to 7 (I am

extremely satisfied). An example items from the scale are 'The freedom to choose your own method of working' (intrinsic job satisfaction) and 'The recognition you get for good work' (extrinsic job satisfaction).

***Organizational commitment.*** Organizational commitment was measured using Mowday, Steers and Porter's (1979) organizational commitment questionnaire (OCQ). This scale measures the individual's identification with and involvement in their employing organization. The short version of the scale was used, consisting of nine items with responses measured on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). An example item from the scale is 'I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful'. The alpha reliability coefficient for this sample was α =.93.

**Results**

**Qualitative results.** A small amount of qualitative data was collected from participants in the coaching group. Participants were able to provide any further comments at the end of the time two and time three surveys. At time two, 18 of the 53 participants left additional comments (33.96%). At time three, nine of the 43 participants left additional comments (20.93%).

At time two, the majority of comments were from participants stating that they found the coaching beneficial or useful. For example:

*"Definitely beneficial and would be worth making this more widely available within this and other organisations"*

*"I have found the sessions incredibly useful and would strongly recommend it"*

*"The coaching has benefited me in the way that I understand what I have to do and because of the verbal contract between us, I get the tasks done. This is because I know someone is at the end of the phone on a particular day and the thought of explaining why I haven't done what I said is a good motivator to achieve".*

A couple of comments were made specifically about the value of the confidential nature of the coaching sessions with a coach who was external to the organizations:

*"It was nice to have someone to talk to in complete confidence"*

*"It was really beneficial for me to have someone so supportive and encouraging to talk to, independent of the organisation I work for"*

A few participants commented directly on the expertise of the coach:

*"Coach was great to work with - flexible and knowledgeable"*

*"…… (my coach)… was a great coach - she presented some really effective suggestions for dealing with challenging situations"*

Some participants provided some explanation as to why they felt their responses in the questionnaires may not have reflected the true benefit of the coaching:

*"I believe that coaching would have had a greater impact against the objectives set if it wasn't for organisational change. I have valued the sessions"*

*"Whilst I have put disagree in some of my answers, this is because nothing changed re this subject heading following the coaching - this may be because it wasn't an issue before and isn't now. I don't want it to appear that the coaching I received was ineffective because that isn't the case"*

Finally, a number of participants made comments regarding specific outcomes they felt that the coaching had for them. These linked to areas such as the ability to set clear goals and objectives:

*"I now have clear goals to work towards"*

*"I found it particularly useful to carry out coaching in order to understand how to identify objectives and targets and also to think about ways in which to achieve them"*

The impact on developing self-belief and confidence:

*"I am pleased to see how much of an impact coaching has had on my confidence and belief in myself"*

*"I got some positive feedback on my ways of working which I don't usually get from my manager that often, so that was welcomed and gave me more confidence"*

The impact on efficiency and ability to prioritise:

*"I feel that the coaching has allowed me to focus more effectively on the tasks in hand and allowed me to prioritise in a clearer way"*

*"The coaching shaped the way I carry out tasks - making me more efficient and respecting the environment I now work in"*

Finally, the impact on overall performance:

*"I'm able to clearly see the impact my actions have on others as well as the influence I hold within my team. I feel an overwhelming sense of gratitude for the time and effort spent and believe coaching has improved my overall performance".*

At time three, similar themes were identified in the comments left by participants. Primarily, a couple of participants wanted to provide further explanations for some of their responses:

*"The only reason that my feedback on the effect of coaching is neutral is due to changing in the business that prevented the agreed objectives being relevant or possible to progress"*

However, the main theme was to reiterate some of the benefits. For example:

*"Through the coaching, I was able to establish that my potential is being under valued in (the organization). Having realized that, I decided to take a new job in a new organisation, where I was more valued and well remunerated"*

*"Even though I am currently seconded to another role, I continue to manage some elements of my previous role. I feel my ability to do this has been helped by the coaching"*

*"Coaching has been perfect for me - young professional wanted to be taken more seriously. I am now more respectful of work ethic and overcome frustrations to do with my age in a confident and proactive way - helping to meet targets and secure job promotion"*

The qualitative responses suggest that participants perceived the coaching to be a positive experience with a variety of benefits. The next stage of analysis was to identify whether the quantitative data supported these comments.

**Descriptive results.** Before proceeding to the hypothesis testing, the descriptive statistics of the experimental group and control group were explored to ensure that they were demographically similar. To assess this, Pearson chi-square was used to assess the differences in the categorical variables (gender, ethnicity and education) and independent-samples t-tests were used to assess the differences in the continuous variables (age, tenure in job role, tenure in organization and weekly hours worked). Both the t-test and chi-square test showed no significant differences between the experimental group and the control group in terms of gender, ethnicity, education (i.e. highest level of qualification), age, tenure in job role, tenure in organization and number of weekly hours worked. The results of the chi-square and t-test are shown in Table 6.2. The means, standard deviations and Pearson's correlation coefficients were also calculated between all variables in order to provide an initial understanding of the variables involved in the research. These correlations are displayed in Table 6.3. The cronbach's alpha for all scales are also reported on the diagonal in parenthesis and these all exceed .70.

| | Experimental group | Control group | |
|---|---|---|---|
| Pearson chi-square | mean *(s.d)* | mean *(s.d)* | $\chi^2$ |
| Gender | | | .20 (ns) |
| Ethnicity | | | 4.35 (ns) |
| Education | | | 4.01 (ns) |
| Independent t-test | | | t-value |
| Age | 35.72 (11.33) | 38.61 (10.58) | -1.16 (ns) |
| Tenure in job role | 33.26 (45.51) | 35.74 (40.69) | -.25 (ns) |
| Tenure in organization | 44.25 (42.25) | 60.06 (63.63) | -1.37 (ns) |
| Weekly hours worked | 38.31 (4.72) | 39.26 (5.59) | -.83 (ns) |

**Table 6.2:** Chi-square and t-tests for experimental group and control group
Note: $n = 84$ (experimental group $n = 53$; control group $n = 31$), ethnicity = white; Irish traveller; mixed – white and black Caribbean; mixed – white and black African; mixed – white and Asian; Chinese; Indian; Pakistani; Bangladeshi; African; Caribbean; Arab; Asian; other, education = no formal qualification; secondary school (GCSE's, O Levels or equivalent); sixth form, college, A levels or equivalent; undergraduate degree; postgraduate degree or doctoral degree.

**Data checking.** Prior to statistical analysis the skewness and kurtosis of the variables were assessed in order to screen for data normality (DeCarlo, 1997; Nunnally, 1978). Screening continuous variables for normality is a key step in statistical analysis. Skewness indicates the degree of symmetry in the data, therefore a skewed variable is a variable whose mean is not in the center of the distribution. Kurtosis indicates the degree of 'peakedness' of the distribution, therefore a distribution can either be too peaked or too flat (Field, 2013; Tabachnick & Fidell, 2013). When a distribution is normal, the skewness and kurtosis are zero. Most of the data did not demonstrated excessive skewness or kurtosis therefore transformation of data was not necessary (see Table 6.4).

| Variable | Mean (s.d) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. NV | 2.53 (.59) | (.77) | | | | | | | | | | | | | | | | | | | | |
| 2. NW | 2.77 (.72) | .55** | (.81) | | | | | | | | | | | | | | | | | | | |
| 3. CI | 3.78 (.57) | -.41** | -.57** | (.81) | | | | | | | | | | | | | | | | | | |
| 4. CO | 3.84 (.58) | .14 | .16 | .37** | (.80) | | | | | | | | | | | | | | | | | |
| 5. EE | 3.62 (.70) | .06 | -.40** | .08 | -.22* | (.82) | | | | | | | | | | | | | | | | |
| 6. EA | 3.53 (.71) | -.23* | -.70** | .49** | .00 | .44** | (.88) | | | | | | | | | | | | | | | |
| 7. OI | 3.89 (.52) | -.30** | -.35** | .48** | -.02 | .11 | .42** | (.75) | | | | | | | | | | | | | | |
| 8. BIS | 2.95 (.54) | .54** | .79** | -.35* | .23 | -.19 | -.67** | -.36** | (.84) | | | | | | | | | | | | | |
| 9. BAS Reward | 3.19 (.38) | .02 | -.07 | -.03 | -.15 | .35** | .05 | -.14 | .08 | (.71) | | | | | | | | | | | | |
| 10. BAS Drive | 2.64 (.50) | .10 | -.32* | .14 | -.05 | .44** | .48** | .13 | -.15 | .36** | (.82) | | | | | | | | | | | |
| 11. BAS Fun | 2.59 (.48) | -.04 | -.14 | -.08 | -.36** | .51** | .18 | .06 | -.12 | .27** | .37** | (.73) | | | | | | | | | | |
| 12. Self-ratings T1 | 2.31 (.35)[1] | -.41** | -.56** | .52** | .05 | .33** | .72** | .37** | -.62** | .11 | .41** | .21 | (.92) | | | | | | | | | |
| 13. Other-ratings T1 | 2.07 (.34)[1] | -.06 | -.19 | .10 | .16 | .14 | .21 | .02 | -.23 | .16 | .29* | .11 | .17 | (.97) | | | | | | | | |
| 14. Intrinsic JS T1 | 5.30 (.79) | -.12 | -.17 | .18 | -01 | .24* | .10 | -.09 | -.06 | .45** | .00 | .07 | .12 | .30** | (.83) | | | | | | | |
| 15. Extrinsic JS T1 | 5.02 (.85) | -.04 | -.18 | .06 | -.14 | .26* | .09 | -.06 | -.04 | .37* | .18 | .16 | .12 | .32** | .76** | (.80) | | | | | | |
| 16. OC T1 | 5.20 (1.19) | -.02 | -.15 | .22* | .06 | .19 | .28* | .19 | -.31* | .28 | .39** | .16 | .42** | .17 | .43** | .45** | (.93) | | | | | |
| 17. Self-ratings T2 | 2.15 (.31)[1] | -.13 | -.21 | .25* | .12 | .26* | .36** | .22* | -.16 | .15 | .29* | .20 | .53** | .20 | .04 | .03 | .05 | (.92) | | | | |
| 18. Other-ratings T2 | 1.89 (.32)[1] | -.08 | -.10 | .20 | .18 | -.09 | .09 | .03 | -.17 | .14 | .17 | -.03 | .12 | .59** | .23* | .17 | .17 | .11 | (.96) | | | |
| 19. Intrinsic JS T2 | 5.38 (.70) | .12 | -.11 | .09 | .06 | .25* | .14 | -.16 | -.07 | .43** | .20 | .21 | .16 | .27* | .65** | .55** | .42** | .26* | .20 | (.80) | | |
| 20. Extrinsic JS T2 | 5.04 (.86) | .09 | -.07 | .11 | -.02 | .21 | .09 | -.03 | .06 | .36** | .22 | .10 | .13 | .24* | .61** | .67** | .42** | .16 | .17 | .82** | (.81) | |
| 21. OC T2 | 5.32 (1.14) | .14 | -.10 | .10 | .00 | .24* | .18 | -.04 | -.09 | .38** | .23 | .21 | .27* | .13 | .54** | .48** | .70** | .18 | .11 | .71** | .70** | (.93) |
| 22. Self-ratings T3 | 2.08 (.34)[1] | -.22 | -.38** | .33** | .09 | .37** | .38** | .43** | -.25 | .03 | .26 | .08 | .55** | .18 | .06 | .06 | .21 | .63** | .02 | .10 | .02 | .12 |
| 23. Other-ratings T3 | 1.83 (.34)[1] | -.07 | -.06 | .12 | .12 | -.15 | .15 | .10 | -.19 | .02 | .03 | -.06 | .16 | .60** | .29* | .25* | .20 | .30* | .76** | .29* | .29* | .19 |
| 24. Intrinsic JS T3 | 5.40 (.81) | .02 | -.05 | .11 | .02 | .15 | .01 | -.06 | .01 | .30 | .14 | -.14 | .14 | .18 | .60** | .56** | .51** | .15 | .24 | .62** | .63** | .62** |
| 25. Extrinsic JS T3 | 5.01 (.92) | -.03 | -.02 | .01 | -.06 | .06 | -.04 | -.06 | .00 | .24 | .20 | -.14 | .02 | .21 | .55** | .66** | .52** | .03 | .29* | .52** | .67** | .56** |
| 26. OC T3 | 5.22 (1.20) | .12 | .15 | .02 | .13 | -.04 | -.07 | .06 | .12 | .11 | .00 | -.08 | .06 | .15 | .47** | .45** | .66** | .06 | .27* | .48** | .53** | .72** |
| 27. PCE CC | 3.81 (.60) | .11 | .18 | .06 | .06 | -.11 | .14 | .09 | .15 | .22 | .33* | .04 | .24 | .00 | -.09 | -.14 | .06 | .43** | -.04 | .04 | .03 | .12 |
| 28. PCE TP | 3.26 (.46) | -.22 | -.12 | .18 | .08 | .20 | .25 | .32* | -.19 | -.17 | .17 | .20 | .35* | .14 | -.03 | -.08 | .23 | .34 | .05 | -.01 | -.05 | .13 |
| 29. PCE WW | 3.63 (.70) | .07 | .08 | .14 | .12 | -.01 | .11 | .10 | .16 | .30* | .18 | .07 | .25 | .01 | .36** | .21 | .31* | .42** | -.07 | .45** | .53** | .55** |
| 30. PCE PER | 3.46 (.53) | -.08 | .02 | -.01 | .10 | -.08 | .03 | .11 | -.02 | -.11 | .10 | .02 | .07 | .15 | -.18 | -.16 | .04 | .21 | -.16 | -.14 | -.18 | -.03 |
| 31. PCE PO | 3.80 (.60) | .14 | .25 | -.25 | -.09 | -.03 | -.08 | -.00 | .24 | .25 | .11 | .03 | 11 | -.03 | .01 | -.02 | .02 | .20 | -.12 | .07 | .06 | .06 |
| 32. PCE PEA | 3.68 (.55) | -.07 | .14 | -.07 | .01 | -.16 | .09 | .15 | .10 | .16 | .17 | -.04 | -.17 | .00 | -.10 | -.13 | .01 | .36** | -.13 | -.04 | -.03 | .04 |

| Variable | Mean (s.d) | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22. Self-ratings T3 | 2.08 (.34)[1] | (.93) | | | | | | | | | | |
| 23. Other-ratings T3 | 1.83 (.34)[1] | .10 | (.97) | | | | | | | | | |
| 24. Intrinsic JS T3 | 5.40 (.81) | .13 | .30* | (.88) | | | | | | | | |
| 25. Extrinsic JS T3 | 5.01 (.92) | .03 | .32** | .88** | (.85) | | | | | | | |
| 26. OC T3 | 5.22 (1.20) | .12 | .41** | .72** | .71** | (.95) | | | | | | |
| 27. PCE CC | 3.81 (.60) | .25 | .03 | -.03 | -.08 | .18 | (.86) | | | | | |
| 28. PCE TP | 3.26 (.46) | .48** | .06 | .00 | .01 | .21 | .43** | (.84) | | | | |
| 29. PCE WW | 3.63 (.70) | .16 | .05 | .44** | .30* | .44** | .54** | .28* | (.90) | | | |
| 30. PCE PER | 3.46 (.53) | .21 | -.14 | -.23 | -.16 | .08 | .52 | .53** | .22 | (.70) | | |
| 31. PCE PO | 3.80 (.60) | .11 | -.13 | .10 | .12 | .23 | .58** | .38** | .44** | .43** | (.92) | |
| 32. PCE PEA | 3.68 (.55) | .28 | -.03 | -.10 | -.11 | .14 | .81** | .48** | .54** | .55** | .62** | (.79) |

**Table 6.3:** Means, standard deviations, correlations and Cronbach's alpha for variables measured.

Note: Time 1 total coachee $n$ = 84, total feedback $n$ = 233, total $n$ = 317. Time 2 experimental group $n$ = 53, control group $n$ = 31, total coachee $n$ = 84, experimental group feedback $n$ = 119, control group feedback $n$ = 68, total feedback $n$ = 187, total $n$ = 271. Time 3 experimental group $n$ = 43, control group $n$ = 27, total coachee $n$ = 70, experimental group feedback $n$ = 94, control group feedback $n$ = 60, total feedback $n$ = 154, total $n$ = 224. * $p$ < .05, ** $p$ < .01. Cronbach's alpha on the diagonal in the parenthesis. NV – neuroticism volatility; NW – neuroticism withdrawal; CI – conscientiousness industriousness; CO – conscientiousness orderliness; EE – extraversion enthusiasm; EA – extraversion assertiveness; OI – openness intellect; BIS – behavioural inhibition system; BAS Reward – behavioural activation system – reward responsiveness; BAS Drive - behavioural activation system – drive; BAS Fun - behavioural activation system – fun-seeking; Self-ratings T1 – self-ratings of performance at time 1; Other-ratings T1 – others ratings of performance at time 1; Intrinsic JS T1 – intrinsic job satisfaction at time 1; Extrinsic JS T1 – extrinsic job satisfaction at time 1; OC T1 – organizational commitment at time 1; Self-ratings T2 – self-ratings of performance at time 2; Other-ratings T2 – others ratings of performance at time 2; Intrinsic JS T2 – intrinsic job satisfaction at time 2; Extrinsic JS T2 – extrinsic job satisfaction at time 2; OC T2 – organizational commitment at time 2; Self-ratings T3 – self-ratings of performance at time 3; Other-ratings T3 – others ratings of performance at time 3; Intrinsic JS T3 – intrinsic job satisfaction at time 3; Extrinsic JS T3 – extrinsic job satisfaction at time3; OC T3 – organizational commitment at time 3. PCE CC = career clarity factor of perceived coaching effectiveness; PCE TP = team performance factor of perceived coaching effectiveness; PCE WW = work well-being factor of perceived coaching effectiveness; PCE PEA = personal effectiveness & adaptability factor of perceived coaching effectiveness; PCE PER = performance factor of perceived coaching effectiveness; PCE PO = planning & organizing factor of perceived coaching effectiveness. Time two perceived coaching effectiveness reported.
[1]low score = high performance

| Variable | Skewness | Kurtosis |
|---|---|---|
| Neuroticism volatility | .16 | -.48 |
| Neuroticism withdrawal | .31 | -.39 |
| Conscientiousness industriousness | -.18 | -.66 |
| Conscientiousness orderliness | -.46 | -.09 |
| Extraversion enthusiasm | -.43 | -.45 |
| Extraversion assertiveness | -.37 | -.21 |
| Openness intellect | -.27 | -.21 |
| Behavioural inhibition system | .32 | -.91 |
| Behavioural activation system – reward | .26 | -.13 |
| Behavioural activation system – drive | .60 | .94 |
| Behavioural activation system – fun-seeking | -.28 | 1.10 |
| Self-ratings of performance at time one | -.08 | -.56 |
| Other-ratings of performance at time one | .36 | .64 |
| Intrinsic job satisfaction at time one | -1.30 | 2.79 |
| Extrinsic job satisfaction at time one | -.52 | .19 |
| Organizational commitment at time one | -.73 | -.31 |
| Self-ratings of performance at time two | .32 | .50 |
| Other-ratings of performance at time two | -.01 | .25 |
| Intrinsic job satisfaction at time two | -.57 | .38 |
| Extrinsic job satisfaction at time two | -.78 | .85 |
| Organizational commitment at time two | -1.15 | 1.73 |
| Self-ratings of performance at time three | .15 | -.12 |
| Other-ratings of performance at time three | .14 | .46 |
| Intrinsic job satisfaction at time three | -1.86 | 6.21 |
| Extrinsic job satisfaction at time three | -1.45 | 3.00 |
| Organizational commitment at time three | -1.17 | .82 |
| PCE career clarity | .06 | .01 |
| PCE team performance | .74 | -.33 |
| PCE work well-being | -.89 | 1.86 |
| PCE performance | -.39 | 1.71 |
| PCE planning & organizing | .05 | .08 |
| PCE personal effectiveness & adaptability | .18 | -.46 |

**Table 6.4:** Skewness and kurtosis values for each of the variables.
Note: PCE – perceived coaching effectiveness; coachee participants total T1 & T2 $n$ = 84; coachee participants total T3 $n$ = 70; feedback participants T1 $n$ = 352; feedback participants T2 $n$ = 207; feedback participants T3 $n$ = 166. Time two perceived coaching effectiveness reported.

**Hypothesis testing.** The intention of this study was to test the theoretical model, shown in Figure 6.1 in an organizational context. A series of predictions were made at the start of this chapter in relation to the anticipated results of this study. These predictions and the methods of analysis, are summarised in Table 6.5. The following sections will explore the results for each hypothesis tested.

| Hypothesis | Prediction | Analysis |
|---|---|---|
| H6.1 | The coaching intervention will significantly improve outcomes when the experimental group is compared to the control group across the three time points | Mixed design ANOVA |
| H6.2a | The impact of coaching will be greater for people who are high on enthusiasm and assertiveness | Mixed design ANOVA |
| H6.2b | The impact of coaching will be greater for people who are high on industriousness and orderliness | Mixed design ANOVA |
| H6.2c | The impact of coaching will be greater for people who are low on withdrawal and volatility | Mixed design ANOVA |
| H6.2d | The impact of coaching will be greater for people who are high on intellect | Mixed design ANOVA |
| H6.3 | Perceived coaching effectiveness scores will be significantly associated with outcomes | Multiple regression |
| H6.4a | Enthusiasm, assertiveness, industriousness, orderliness and intellect will be positively associated with perceived coaching effectiveness | Multiple regression |
| H6.4b | Withdrawal and volatility will be negatively associated with perceived coaching effectiveness | Multiple regression |
| H6.5a | Assertiveness will indirectly influence coaching outcomes via BAS fun-seeking, BAS drive, mastery and performance approach goal orientation and perceived coaching effectiveness. | Mediation analysis |
| H6.5b | Enthusiasm will indirectly influence coaching outcomes via BAS fun-seeking, BAS drive, BAS reward responsiveness, mastery and performance approach goal orientation and perceived coaching effectiveness. | Mediation analysis |
| H6.5c | Industriousness will indirectly influence coaching outcomes via mastery goal orientation and perceived coaching effectiveness. | Mediation analysis |
| H6.5d | Orderliness will indirectly influence coaching outcomes via mastery goal orientation and perceived coaching effectiveness. | Mediation analysis |
| H6.5e | Withdrawal will indirectly influence coaching outcomes via BIS, performance avoidance goal orientation and perceived coaching effectiveness | Mediation analysis |
| H6.5f | Volatility will indirectly influence coaching outcomes via BIS, performance avoidance goal orientation and perceived coaching effectiveness. | Mediation analysis |
| H6.5g | Intellect will indirectly influence coaching outcomes via mastery goal orientation and perceived coaching effectiveness. | Mediation analysis |

**Table 6.5:** Summary of hypotheses
Note: BIS – behavioural inhibition systems; BAS – behavioural activation systems.

**Hypotheses 6.1 and 6.2.** This stage of hypothesis testing explored whether there was a main effect of coaching on the outcomes measured and whether the personality variables influenced outcomes in the manner expected. In order to empirically assess this, the experimental and control group measures were compared at time one, time two and time three. In order to assess

for the impact of the coaching intervention on outcomes, self-ratings of performance; others-ratings of performance; job satisfaction (intrinsic & extrinsic) and organizational commitment were compared between time one, time two and time three and across the experimental and control groups. To define groups based on individual differences, enthusiasm, assertiveness, industriousness, orderliness, withdrawal, volatility and intellect were split at the median.

To test for the effect of coaching on outcomes, a mixed design ANOVA was conducted, with time as the within-subjects variable (three levels – time one, time two and time three) and group (experimental of control group) and individual differences (low or high) as the between-subjects variables. Each of the outcome variables will be presented separately. Due to the large number of interactions tested, the ANOVA results are summarized in tables and only the significant results are explored in detail. Firstly, the results for self-ratings of performance will be discussed.

| | Time 1 | | | | Time 2 | | Time 3 | | | |
| | Experimental | | Control | | Experimental | Control | Experimental | | Control | |
| | n | Mean (*s.d*) | n | Mean (*s.d*) | Mean (*s.d*) | Mean (*s.d*) | n | Mean (*s.d*) | n | Mean (*s.d*) |
|---|---|---|---|---|---|---|---|---|---|---|
| Low NV | 25 | 2.19 (.33) | 19 | 2.23 (.30) | 2.04 (.33) | 2.20 (.34) | 20 | 2.00 (.30) | 15 | 2.04 (.33) |
| High NV | 28 | 2.44 (.39) | 12 | 2.38 (.22) | 2.11 (.23) | 2.37 (.28) | 23 | 2.05 (.34) | 9 | 2.38 (.33) |
| Low NW | 29 | 2.12 (.32) | 17 | 2.18 (.27) | 2.04 (.28) | 2.16 (.33) | 23 | 1.88 (.24) | 13 | 1.97 (.29) |
| High NW | 24 | 2.57 (.32) | 14 | 2.42 (.22) | 2.12 (.29) | 2.39 (.28) | 20 | 2.20 (.32) | 11 | 2.39 (.31) |
| Low EE | 27 | 2.45 (.37) | 16 | 2.36 (.26) | 2.12 (.33) | 2.33 (.33) | 22 | 2.11 (.32) | 11 | 2.35 (.29) |
| High EE | 26 | 2.19 (.36) | 15 | 2.21 (.28) | 2.04 (.22) | 2.19 (.32) | 21 | 1.94 (.30) | 13 | 2.00 (.35) |
| Low EA | 27 | 2.57 (.30) | 17 | 2.40 (.25) | 2.17 (.26) | 2.40 (.36) | 22 | 2.13 (.34) | 12 | 2.25 (.40) |
| High EA | 26 | 2.07 (.30) | 14 | 2.15 (.25) | 1.98 (.28) | 2.10 (.18) | 21 | 1.91 (.25) | 12 | 2.07 (.31) |
| Low CO | 26 | 2.34 (.37) | 19 | 2.30 (.29) | 2.11 (.29) | 2.33 (.35) | 22 | 2.11 (.32) | 13 | 2.20 (.43) |
| High CO | 27 | 2.31 (.41) | 12 | 2.27 (.27) | 2.05 (.28) | 2.15 (.26) | 21 | 1.94 (.30) | 11 | 2.12 (.27) |
| Low CI | 27 | 2.48 (.33) | 19 | 2.41 (.20) | 2.15 (.24) | 2.34 (.33) | 24 | 2.13 (.35) | 12 | 2.30 (.37) |
| High CI | 26 | 2.16 (.37) | 12 | 2.09 (.26) | 2.01 (.31) | 2.13 (.28) | 19 | 1.90 (.23) | 12 | 2.02 (.31) |
| Low OI | 25 | 2.41 (.39) | 20 | 2.32 (.26) | 2.15 (.25) | 2.26 (.30) | 20 | 2.12 (.37) | 14 | 2.30 (.30) |
| High OI | 28 | 2.24 (.38) | 11 | 2.23 (.31) | 2.01 (.29) | 2.26 (.38) | 23 | 1.95 (.25) | 10 | 1.98 (.38) |

**Table 6.6:** Means and standard deviations for self-ratings of performance for time one, time two and time three for the experimental and control group and split by individual differences

Note: A score of 1 indicates outstanding performance for this measure. NV – volatility; NW – withdrawal; EE – enthusiasm; EA – assertiveness; CO - orderliness; CI – industriousness; OI – intellect.

***Self-ratings of performance.*** The means and standard deviations for self-ratings of performance across the three time points, split by group (experimental or control) and individual differences (low or high) can be found in Table 6.6. To ensure that a mixed design ANOVA was appropriate the assumptions tests were analyzed. In order to be suitable for a mixed design ANOVA the distribution of the dependent variable should be approximately normally distributed. Examination of the Mauchly's test suggests normality as this is non-significant ($p = .59$) therefore the data was deemed suitable for analysis using ANOVA. The ANOVA results can be found in Table 6.7.

*Main effect of time.* The test of within subjects effects suggests that there was a significant difference in self-ratings of performance across time ($F(2, 126) = 17.38$, $p = .00$, partial $\eta^2 = .22$). Figure 6.4 shows a plot of the means for the experimental and control groups across the three time points. This graph shows that self-ratings of performance increase across time (a rating of 1 indicates high performance). Contrasts revealed that self-ratings of performance at time one were significantly different to self-ratings of performance at time two ($F(1, 63) = 27.38$, $p = .00$, partial $\eta^2 = .30$). However there was no significant difference between self-ratings of performance at time two compared to time three ($F(1, 63) = 1.07$, $p = .30$, partial $\eta^2 = .02$).

*The interaction between group and time.* There was a significant interaction effect between time when self-ratings of performance were provided and the group the participant was in ($F(2, 126) = 9.87$, $p = .00$, partial $\eta^2 = .14$). This effect indicates that the self-ratings of performance differed for the experimental and control group. The interaction graph in Figure 6.4 shows that the experimental groups self-ratings of performance increase sharply (a score of 1 indicates high performance) between time one and time two whereas the control group scores increase only slightly between time one and time two. Between time two and time three, both groups appear to increase at a similar rate. To explore this interaction, contrasts compared each time point across both groups. These contrasts supported the conclusions drawn from Figure 6.4 as they revealed significant interactions when comparing the experimental group and the control group scores on self-ratings of performance at time one and time three ($F(1, 63) = 13.25$, $p = .00$, partial $\eta^2 = .17$) however the interaction was not significant when comparing the groups scores on self-ratings of performance at time two and time three ($F(1, 63) = .00$, $p = .99$, partial $\eta^2 = .00$).

| Effect/Interaction | *df* | *F* | *p* | Partial *η²* |
|---|---|---|---|---|
| *Self-ratings of performance* | | | | |
| Main effect of group | 1, 63 | .59 | .45 | .01 |
| Main effect of time | 2, 126 | 17.38 | .00** | .22 |
| **Interaction between group and time** | **2, 126** | **9.87** | **.00**** | **.14** |
| Main effect of neuroticism volatility | 1, 63 | 5.54 | .02* | .08 |
| Interaction between volatility and time | 2, 126 | .72 | .49 | .01 |
| Interaction between volatility and group | 1, 63 | 1.57 | .21 | .02 |
| Interaction between volatility, time and group | 2, 126 | 1.63 | .20 | .03 |
| Main effect of neuroticism withdrawal | 1, 63 | 26.71 | .00** | .30 |
| Interaction between withdrawal and time | 2, 126 | 4.23 | .02* | .06 |
| Interaction between withdrawal and group | 1, 63 | .60 | .44 | .01 |
| Interaction between withdrawal, time and group | 2, 126 | 1.78 | .17 | .03 |
| Main effect of extraversion enthusiasm | 1, 63 | 7.36 | .01* | .11 |
| Interaction between enthusiasm and time | 2, 126 | 1.72 | .18 | .03 |
| Interaction between enthusiasm and group | 1, 63 | .02 | .89 | .00 |
| Interaction between enthusiasm, time and group | 2, 126 | 2.57 | .08 | .04 |
| **Time*group*ee – time 1 versus time 3** | **1, 63** | **4.86** | **.03*** | **.07** |
| Main effect of extraversion assertiveness | 1, 63 | 15.21 | .00** | .19 |
| Interaction between assertiveness and time | 2, 126 | 1.41 | .25 | .02 |
| Interaction between assertiveness and group | 1, 63 | .56 | .46 | .01 |
| Interaction between assertiveness, time and group | 2, 126 | 1.75 | .18 | .03 |
| Main effect of conscientiousness industriousness | 1, 63 | 13.22 | .00** | .17 |
| Interaction between industriousness and time | 2, 126 | 2.04 | .13 | .03 |
| Interaction between industriousness and group | 1, 63 | .05 | .83 | .00 |
| Interaction between industriousness, time and group | 2, 126 | .06 | .94 | .00 |
| Main effect of conscientiousness orderliness | 1, 63 | 1.25 | .27 | .02 |
| Interaction between orderliness and time | 2, 126 | 1.11 | .33 | .02 |
| Interaction between orderliness and group | 1, 63 | .15 | .70 | .00 |
| Interaction between orderliness, time and group | 2, 126 | .86 | .43 | .01 |
| Main effect of intellect | 1, 63 | 5.05 | .03* | .07 |
| Interaction between intellect and time | 2, 126 | 2.22 | .11 | .03 |
| Interaction between intellect and group | 1, 63 | .09 | .76 | .00 |
| Interaction between intellect, time and group | 2, 126 | 2.50 | .09 | .04 |
| **Time*group*oi time 2 versus time 3** | **1, 63** | **4.48** | **.04*** | **.07** |

**Table 6.7:** Summary of mixed design ANOVA results for self-ratings of performance
Note: * $p < 0.05$, ** $p < 0.01$; EE – enthusiasm; OI – intellect; T1 & T2 *n* = 84; T3 *n* = 70
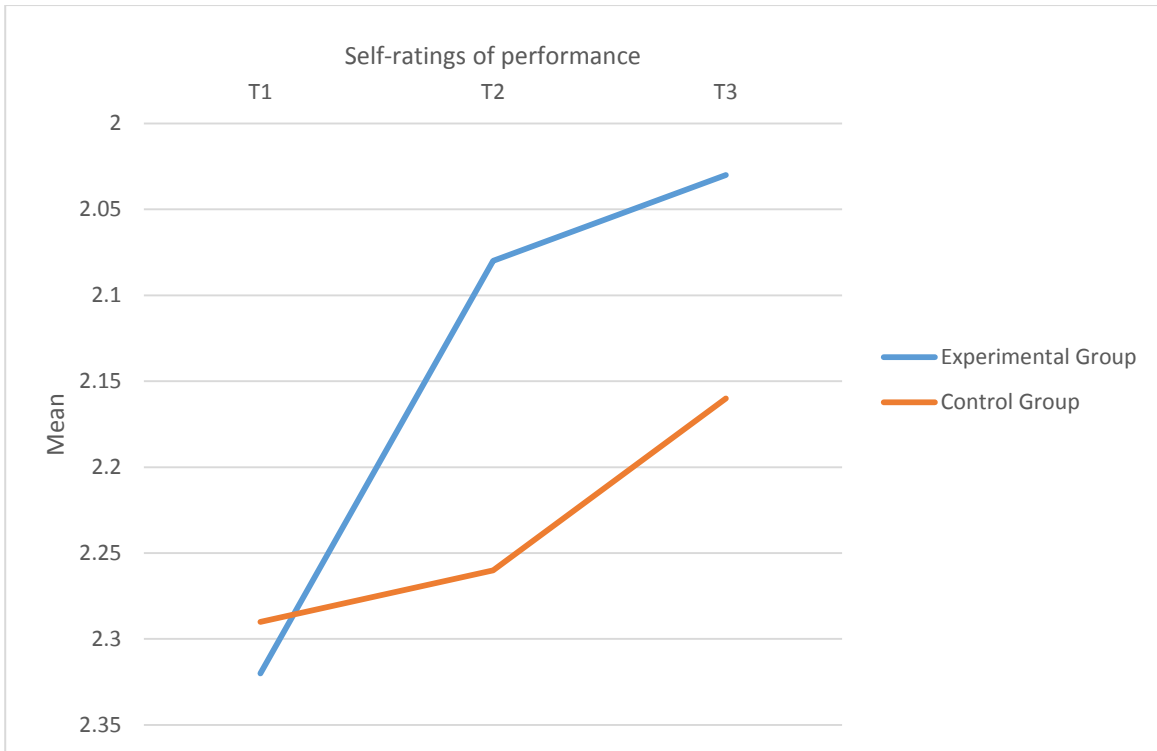
**Figure 6.4:** Plot of self-ratings of performance for time one, two and three split by experimental and control group.

*Main effect of neuroticism volatility.* The analysis showed that there was a significant effect of neuroticism volatility ($F$ (1, 63) = 5.54, $p$ = .02, partial $\eta^2$ = .08), indicating that there was a significant difference in self-ratings of performance for individuals who scored low or high on volatility. The plots depicted in Figure 6.5 show that for both the experimental group and the control group, individuals low in volatility had higher self-ratings of performance across all three time points, however the lack of a significant interaction between volatility, group and time indicates that this difference in self-ratings of performance was not as a result of the coaching intervention.
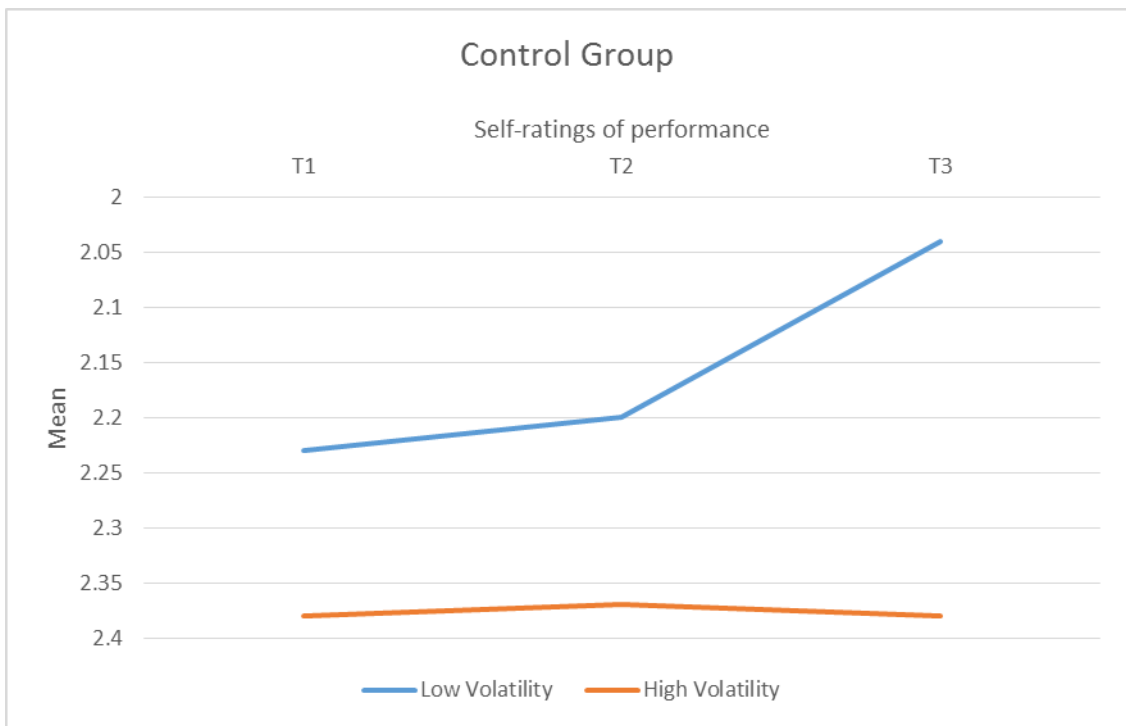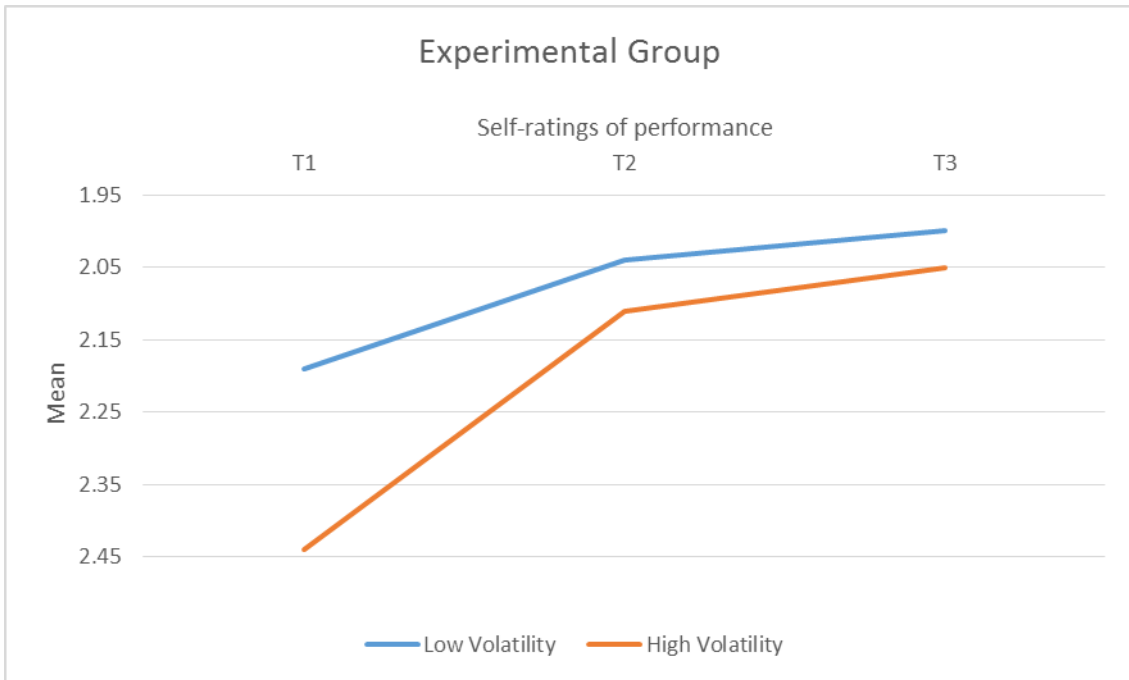
**Figure 6.5:** Plot of means of self-ratings of performance at time one, two and three split by high and low volatility and experimental or control group.

*Main effect of neuroticism withdrawal.* The analysis showed that there was a significant effect of neuroticism withdrawal ($F(1, 63) = 26.71$, $p = .00$, partial $\eta^2 = .30$), indicating that there was a significant difference in self-ratings of performance for individuals who scored low or high on withdrawal. The plots depicted in Figure 6.6 show that for both the experimental group and the control group, individuals low in withdrawal had higher self-ratings of performance across all three time points.
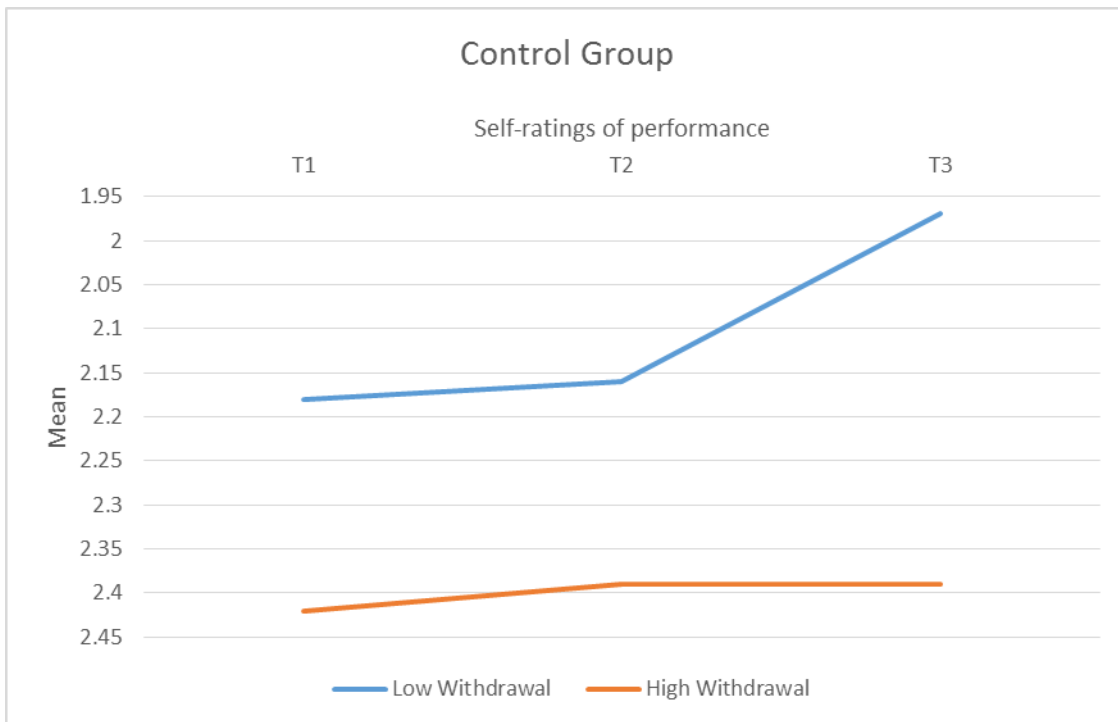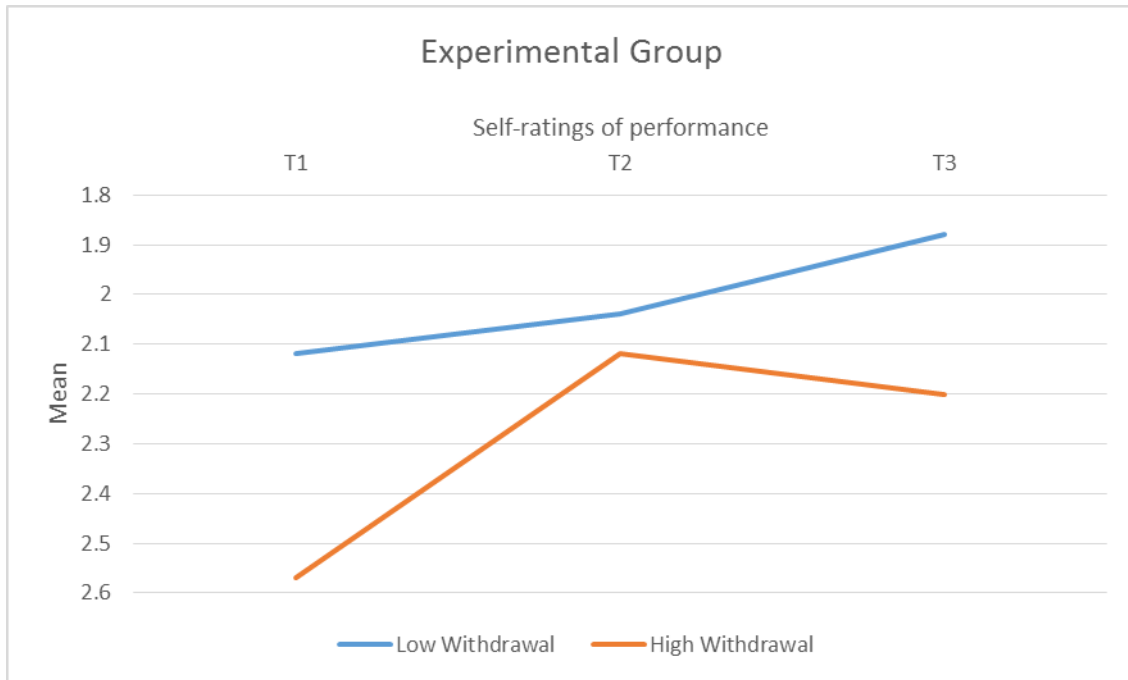
**Figure 6.6:** Plot of means of self-ratings of performance at time one, two and three split by high and low withdrawal and experimental or control group.

*The interaction effect between neuroticism withdrawal and time.* The interaction graph shown in Figure 6.6 indicates that individuals low in withdrawal in both the experimental and control group experienced very little change in self-ratings of performance between time one and time two and

then increased more sharply between time two and time three. Changes in self-ratings of performance for individuals high in withdrawal differed for the experimental and control group. In the control group there was very little change across the three time points whereas in the experimental group there was a sharp increase between time one and time two followed by a decrease between time two and time three. The analysis suggests that these differences across time points are significant ($F_{(2, 126)} = 4.23$, $p = .02$, partial $\eta^2 = .06$). However the lack of a significant interaction effect between withdrawal, time and group suggests that these differences across time points are not as a result of the coaching intervention.

*Main effect of enthusiasm.* The analysis showed that there was a significant effect of enthusiasm ($F_{(1, 63)} = 7.36$, $p = .01$, partial $\eta^2 = .11$), indicating that there was a significant difference in self-ratings of performance for individuals who scored either low or high enthusiasm. The interaction graphs shown in Figure 6.7 show that for both the experimental and control groups, individuals high in enthusiasm had higher self-ratings of performance across all three time points.
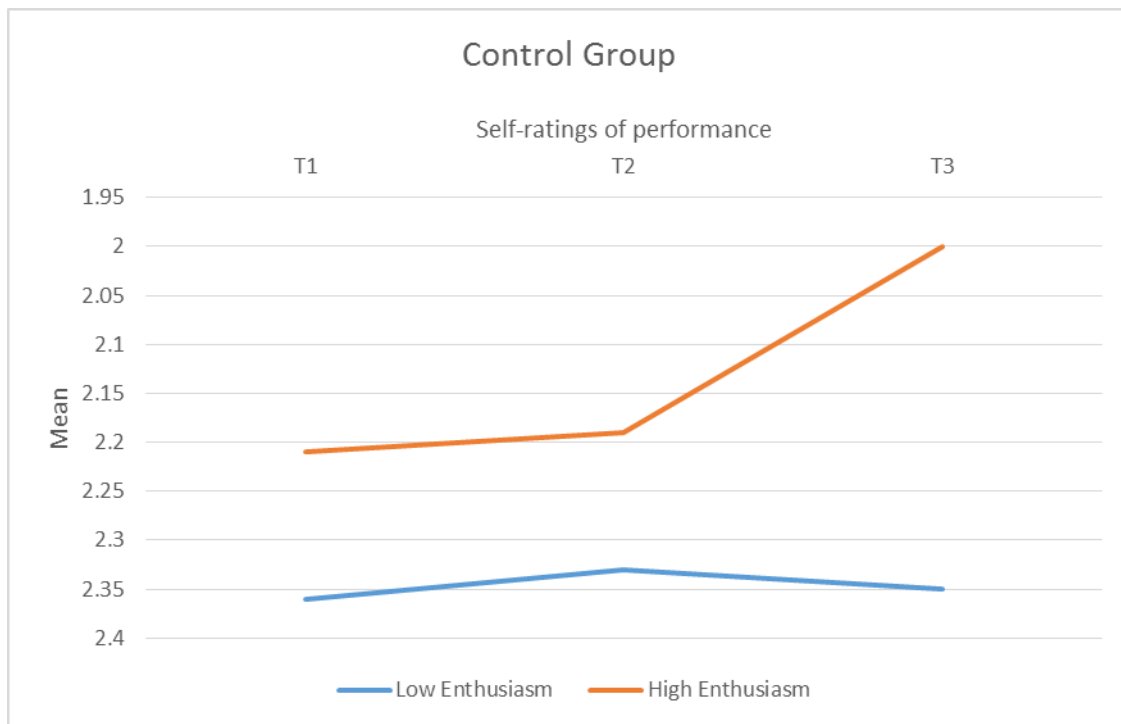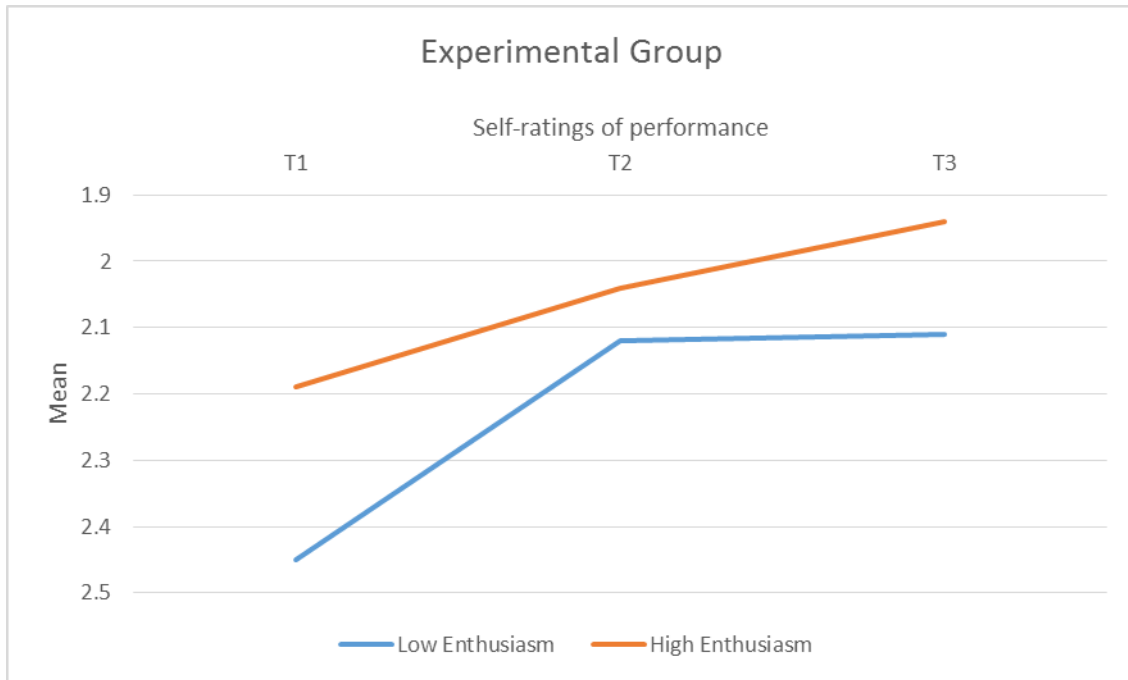
**Figure 6.7:** Plot of means of self-ratings of performance at time one, two and three split by high and low enthusiasm and experimental or control group.

*Interaction effect between enthusiasm and time and group.* The interaction graphs shown in Figure 6.7 indicate that in the coaching group, individuals who were high in enthusiasm increased steadily in self-ratings of performance across the three time points. Individuals low in

enthusiasm increased sharply in self-ratings of performance between time one and time two and then remained constant between time two and time three. For the waiting list, the interaction graph shows that individuals high in enthusiasm experienced a very small increase in self-ratings of performance from time one to time two and a sharp increase between time two to time three. Individuals low in enthusiasm also had a very small increase in self-ratings of performance between time one and time two and then a very small decrease between time two and time three. The analysis suggests that the differences between self-ratings of performance at time one compared to time three are significant ($F$ (1, 63) = 4.86, $p$ = .03, partial $\eta^2$ = .07). These findings indicate that the coaching intervention had a significant impact on self-ratings of performance, the means scores show that individuals low in enthusiasm saw a larger increase in self-ratings of performance between time one and time three than individuals high in enthusiasm.

*Main effect of assertiveness.* The analysis showed that there was a significant effect of assertiveness ($F$ (1, 63) = 15.21, $p$ = .00, partial $\eta^2$ = .19), indicating that there was a significant difference in self-ratings of performance for individuals who scored either low or high assertiveness. The plots shown in Figure 6.8 show that for both the experimental group and the control group, individuals high in assertiveness had higher self-ratings of performance across all three time points, however the lack of a significant interaction between assertiveness, group and time indicates that this difference in self-ratings of performance was not as a result of the coaching intervention.
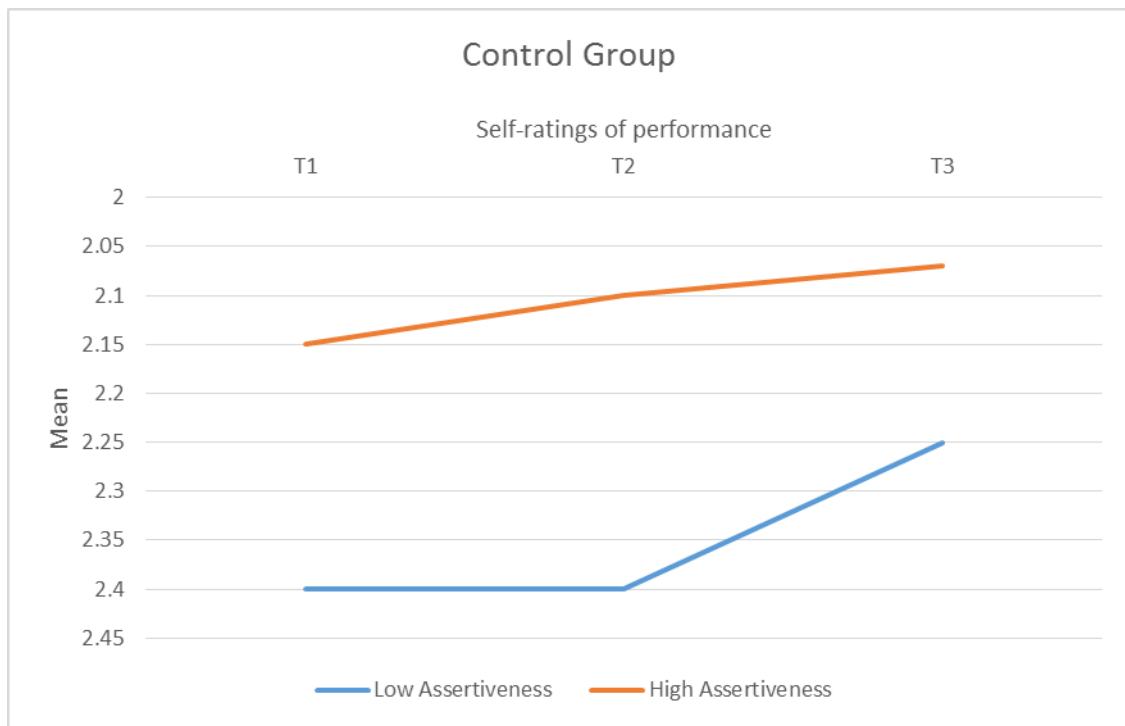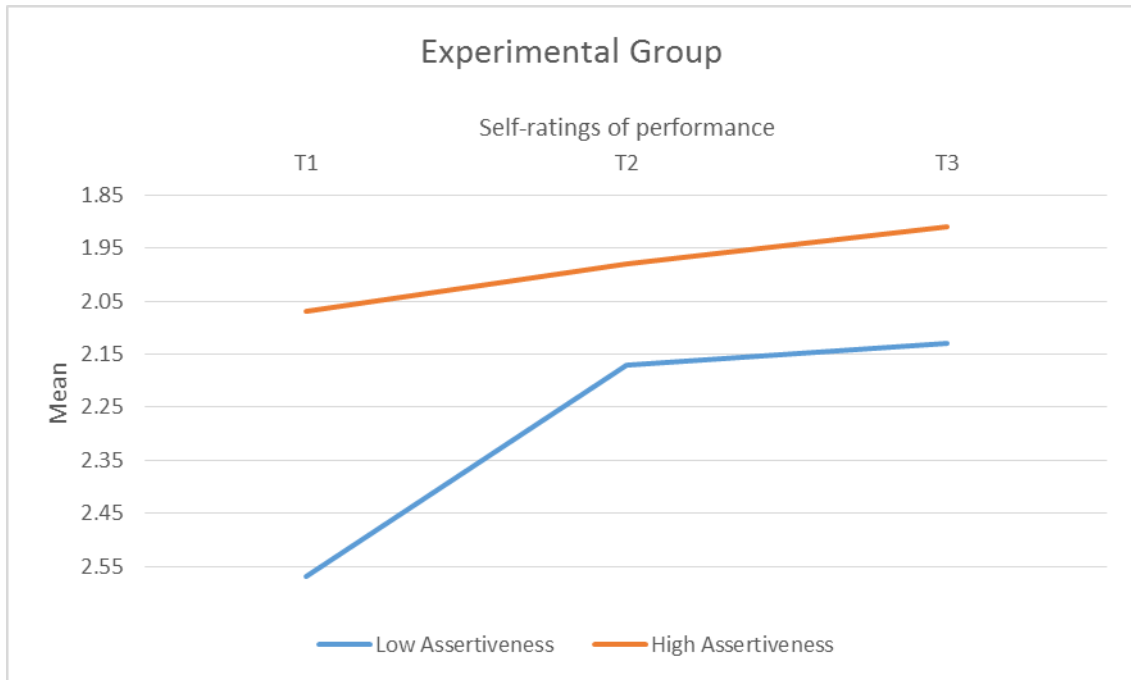
**Figure 6.8:** Plot of means of self-ratings of performance at time one, two and three split by high and low assertiveness and experimental or control group.

*Main effect of industriousness.* The analysis showed that there was a significant effect of industriousness ($F(1, 63) = 13.22$, $p = .00$, partial $\eta^2 = .17$), indicating that there was significant difference in self-ratings of performance for individuals who scored either low or high

industriousness. The plots shown in Figure 6.9 show that for both the experimental group and the control group, individuals high in industriousness had higher self-ratings of performance across all three time points, however the lack of a significant interaction between industriousness, group and time indicates that this difference in self-ratings of performance was not as a result of the coaching intervention.
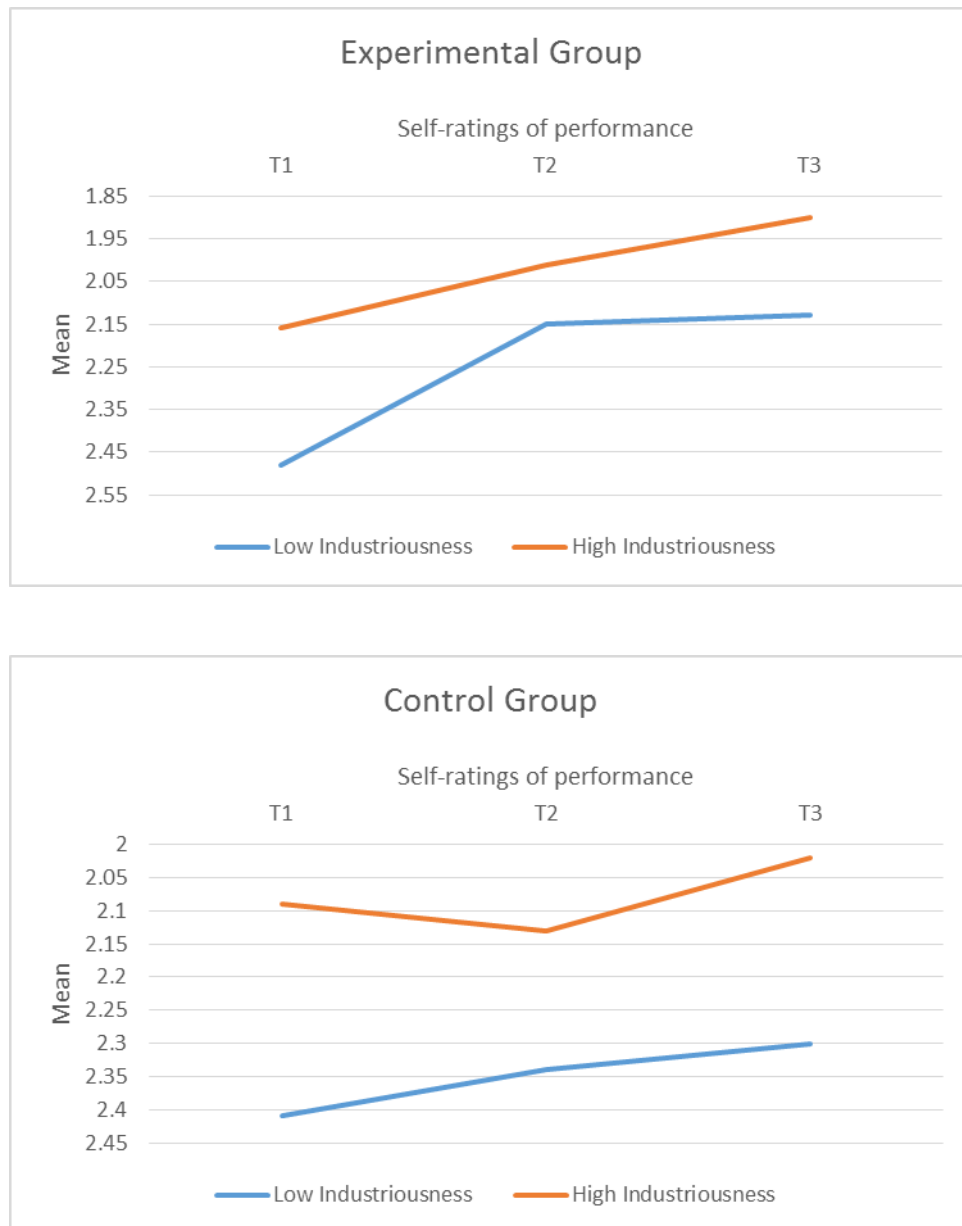


**Figure 6.9:** Plot of means of self-ratings of performance at time one, two and three split by high and low industriousness and experimental or control group.

*Main effect of openness intellect.* The analysis showed that there was a significant effect of openness intellect ($F_{(1, 63)} = 5.05$, $p = .03$, partial $\eta^2 = .07$), indicating that there was a significant difference in self-ratings of performance for individuals who scored either low or high openness intellect. The plots shown in Figure 6.10 show that for both the experimental group and the control group, individuals high in intellect had higher self-ratings of performance across all three time points.
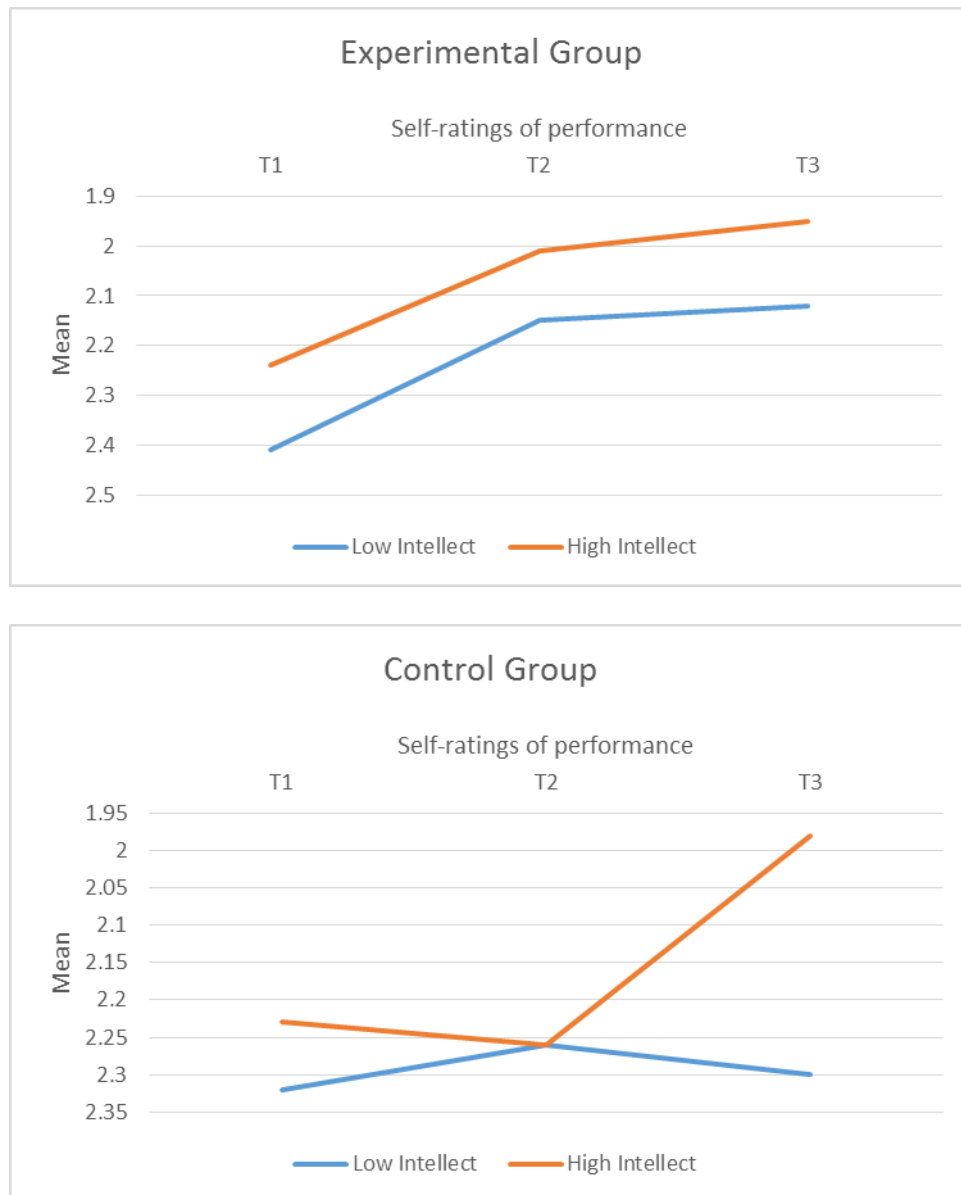




**Figure 6.10:** Plot of means of self-ratings of performance at time one, two and three split by high and low intellect and experimental or control group.

*Interaction effect between openness intellect and time and group.* The interaction graphs shown in Figure 6.10 indicate that in the coaching group, individuals who were low and high in

openness intellect showed a sharp increase in self-ratings of performance between time one and time two followed by a steadier increase in ratings between time two and time three. For the waiting list, the interaction graph shows that individuals low in openness intellect increased slightly in self-ratings of performance between time one and time two followed by a slight decrease between time two and time three. Individuals high in openness intellect showed a slight decrease in self-ratings of performance between time one and time two followed by a sharp increase between time two and time three. The analysis suggests that the differences between the control and experimental group are significant when comparing time two scores to time three ($F$ (1, 63) = 4.48, $p$ = .04, partial $\eta^2$ = .07).

***Others-ratings of performance.*** The means and standard deviations for others ratings of performance across the three time points, split by group (experimental or control) and individual differences (low or high) can be found in Table 6.8. To ensure that a mixed design ANOVA was appropriate the assumptions tests were analyzed. The Mauchly's test suggests normality as this is non-significant ($p$ = .09) therefore the data was deemed suitable for analysis using ANOVA. The ANOVA results can be found in Table 6.9.

*Main effect of time.* The test of within subjects effects suggests that there was a significant difference in others ratings of performance across time ($F$ (2, 122) = 22.53, $p$ = .00, partial $\eta^2$ = .27). Figure 6.11 shows a plot of the means of the experimental and control groups across the three time points. This graph shows that others ratings of performance increase across time (a rating of 1 indicates high performance). However, as there was no significant interaction between group and time, the findings suggest that the change in others-ratings of performance across the three time points was not as a consequence of the coaching intervention.

| | Time 1 | | | | Time 2 | | Time 3 | | | |
| | Experimental | | Control | | Experimental | Control | Experimental | | Control | |
| | *n* | Mean (*s.d*) | *n* | Mean (*s.d*) | Mean (s.d) | Mean (*s.d*) | *n* | Mean (*s.d*) | *n* | Mean (*s.d*) |
|---|---|---|---|---|---|---|---|---|---|---|
| Low NV | 25 | 2.02 (.33) | 19 | 2.05 (.27) | 1.86 (.33) | 1.90 (.28) | 19 | 1.82 (.35) | 15 | 1.87 (.32) |
| High NV | 28 | 2.12 (.39) | 12 | 2.06 (.31) | 1.91 (.31) | 1.84 (.39) | 22 | 1.83 (.31) | 9 | 1.81 (.46) |
| Low NW | 29 | 2.00 (.34) | 17 | 2.02 (.30) | 1.85 (.34) | 1.93 (.29) | 22 | 1.79 (.37) | 13 | 1.88 (.34) |
| High NW | 24 | 2.16 (.37) | 14 | 2.08 (.32) | 1.93 (.30) | 1.81 (.36) | 19 | 1.87 (.26) | 11 | 1.81 (.41) |
| Low EE | 27 | 2.12 (.39) | 16 | 2.04 (.32) | 1.90 (.30) | 1.85 (.29) | 21 | 1.78 (.30) | 11 | 1.85 (.40) |
| High EE | 26 | 2.02 (.32) | 15 | 2.06 (.31) | 1.88 (.34) | 1.91 (.36) | 20 | 1.87 (.35) | 13 | 1.85 (.36) |
| Low EA | 27 | 2.11 (.38) | 17 | 2.14 (.28) | 1.92 (.29) | 1.93 (.27) | 20 | 1.93 (.30) | 12 | 1.88 (.34) |
| High EA | 26 | 2.03 (.34) | 14 | 1.95 (.32) | 1.86 (.35) | 1.82 (.37) | 21 | 1.72 (.32) | 12 | 1.82 (.41) |
| Low CO | 26 | 2.09 (.32) | 19 | 2.13 (.31) | 1.92 (.33) | 1.96 (.37) | 20 | 1.89 (.33) | 13 | 1.90 (.46) |
| High CO | 27 | 2.05 (.40) | 12 | 1.93 (.27) | 1.86 (.31) | 1.77 (.18) | 21 | 1.76 (.32) | 11 | 1.79 (.24) |
| Low CI | 27 | 2.07 (.33) | 19 | 2.06 (.30) | 1.94 (.31) | 1.87 (.33) | 22 | 1.89 (.29) | 12 | 1.84 (.40) |
| High CI | 26 | 2.07 (.40) | 12 | 2.03 (.33) | 1.84 (.33) | 1.89 (.32) | 19 | 1.74 (.35) | 12 | 1.87 (.35) |
| Low OI | 25 | 2.00 (.37) | 20 | 1.98 (.26) | 1.86 (.28) | 1.82 (.31) | 18 | 1.81 (.26) | 14 | 1.74 (.37) |
| High OI | 28 | 2.14 (.35) | 11 | 2.18 (.35) | 1.91 (.35) | 1.99 (.32) | 23 | 1.84 (.37) | 10 | 2.01 (.33) |

**Table 6.8:** Means and standard deviations for others-ratings of performance across time one, time two and time three for the experimental group and control group and split by individual differences

Note: A score of 1 indicates outstanding performance for this measure. NV – volatility; NW – withdrawal; EE – enthusiasm; EA – assertiveness; CO - orderliness; CI – industriousness; OI – intellect.

| Effect/Interaction | df | F | p | Partial $\eta^2$ |
|---|---|---|---|---|
| *Others-ratings of performance* | | | | |
| Main effect of group | 1, 61 | .24 | .63 | .00 |
| Main effect of time | 2, 122 | 22.53 | .00** | .27 |
| Interaction between group and time | 2, 122 | .39 | .68 | .01 |
| Main effect of neuroticism volatility | 1, 61 | .06 | .82 | .00 |
| Interaction between volatility and time | 2, 122 | 1.06 | .35 | .02 |
| Interaction between volatility and group | 1, 61 | .97 | .33 | .02 |
| Interaction between volatility, time and group | 2, 122 | .74 | .48 | .01 |
| Main effect of neuroticism withdrawal | 1, 61 | .07 | .79 | .00 |
| Interaction between withdrawal and time | 2, 122 | 2.32 | .10 | .04 |
| Interaction between withdrawal and group | 1, 61 | 1.35 | .25 | .02 |
| Interaction between withdrawal, time and group | 2, 122 | .12 | .89 | .00 |
| Main effect of extraversion enthusiasm | 1, 61 | .14 | .72 | .00 |
| Interaction between enthusiasm and time | 2, 122 | 1.24 | .29 | .02 |
| Interaction between enthusiasm and group | 1, 61 | .03 | .86 | .00 |
| Interaction between enthusiasm, time and group | 2, 122 | .70 | .50 | .01 |
| Main effect of extraversion assertiveness | 1, 61 | 2.58 | .11 | .04 |
| Interaction between assertiveness and time | 2, 122 | .62 | .54 | .01 |
| Interaction between assertiveness and group | 1, 61 | .01 | .91 | .00 |
| Interaction between assertiveness, time and group | 2, 122 | 1.85 | .16 | .03 |
| Main effect of conscientiousness industriousness | 1, 61 | .39 | .54 | .01 |
| Interaction between industriousness and time | 2, 122 | .19 | .83 | .00 |
| Interaction between industriousness and group | 1, 61 | .61 | .44 | .01 |
| Interaction between industriousness, time and group | 2, 122 | .44 | .65 | .01 |
| Main effect of conscientiousness orderliness | 1, 61 | 3.52 | .07 | .06 |
| Interaction between orderliness and time | 2, 122 | .07 | .93 | .00 |
| Interaction between orderliness and group | 1, 61 | .23 | .63 | .00 |
| Interaction between orderliness, time and group | 2, 122 | .70 | .50 | .01 |
| Main effect of intellect | 1, 61 | 3.27 | .08 | .05 |
| Interaction between intellect and time | 2, 122 | .08 | .92 | .00 |
| Interaction between intellect and group | 1, 61 | 1.42 | .24 | .02 |
| Interaction between intellect, time and group | 2, 122 | .35 | .71 | .01 |

**Table 6.9:** Summary of mixed design ANOVA results for others-ratings of performance for study four.

Note: ** $p < 0.01$; T1 & T2 $n = 84$; T3 $n = 70$
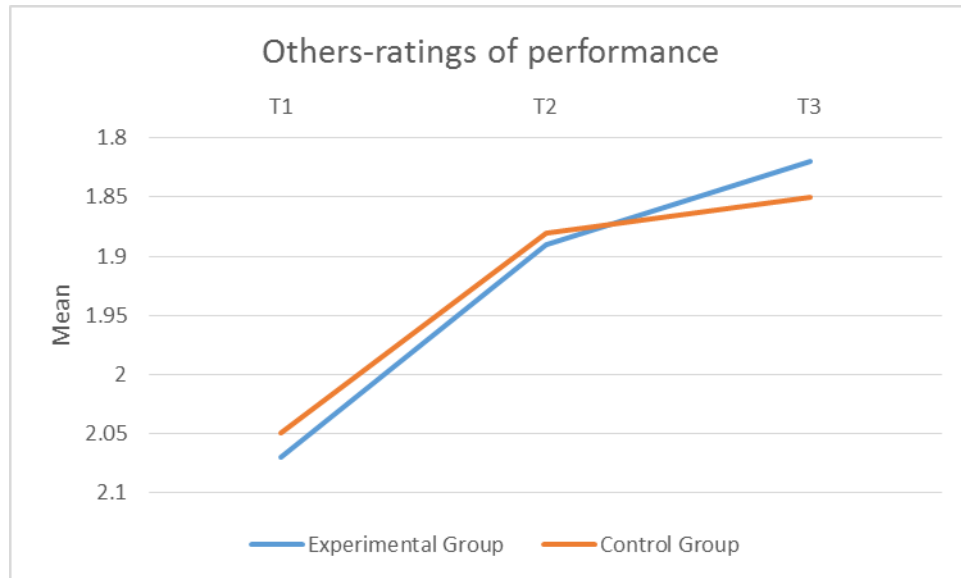
**Figure 6.11:** Plot of others-ratings of performance for time one, two and three split by experimental and control group.

*Intrinsic job satisfaction.* The means and standard deviations for intrinsic job satisfaction across the three time points, split by group (experimental or control) and individual differences (low or high) can be found in Table 6.10. To ensure that a mixed design ANOVA was appropriate the assumptions tests were analyzed. The Mauchly's test suggests normality as this is non-significant ($p = .72$) therefore the data was deemed suitable for analysis using ANOVA. The ANOVA results can be found in Table 6.11.

| | Time 1 | | | | Time 2 | | Time 3 | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Experimental | | Control | | Experimental | Control | Experimental | | Control | |
| | *n* | Mean (*s.d*) | *n* | Mean (*s.d*) | Mean (*s.d*) | Mean (*s.d*) | *n* | Mean (*s.d*) | *n* | Mean (*s.d*) |
| Low NV | 25 | 5.19 | 19 | 5.49 | 5.32 | 5.22 | 20 | 5.38 | 15 | 5.38 |
| High NV | 28 | 5.28 | 12 | 5.26 | 5.51 | 5.44 | 23 | 5.45 | 10 | 5.34 |
| Low NW | 29 | 5.29 | 17 | 5.49 | 5.47 | 5.26 | 23 | 5.42 | 13 | 5.32 |
| High NW | 24 | 5.17 | 14 | 5.30 | 5.36 | 5.36 | 20 | 5.42 | 12 | 5.41 |
| Low EE | 27 | 4.92 | 16 | 5.34 | 5.16 | 5.16 | 22 | 5.25 | 12 | 5.12 |
| High EE | 26 | 5.56 | 15 | 5.47 | 5.69 | 5.46 | 21 | 5.60 | 13 | 5.59 |
| Low EA | 27 | 5.10 | 17 | 5.47 | 5.31 | 5.24 | 22 | 5.26 | 13 | 5.47 |
| High EA | 26 | 5.38 | 14 | 5.32 | 5.53 | 5.38 | 21 | 5.59 | 12 | 5.24 |
| Low CO | 26 | 5.22 | 19 | 5.42 | 5.42 | 5.29 | 22 | 5.22 | 14 | 5.42 |
| High CO | 27 | 5.25 | 12 | 5.37 | 5.41 | 5.34 | 21 | 5.63 | 11 | 5.29 |
| Low CI | 27 | 5.08 | 19 | 5.27 | 5.27 | 5.40 | 24 | 5.27 | 13 | 5.15 |
| High CI | 26 | 5.40 | 12 | 5.62 | 5.57 | 5.16 | 19 | 5.60 | 12 | 5.20 |
| Low OI | 25 | 5.30 | 20 | 5.48 | 5.48 | 5.50 | 20 | 5.45 | 15 | 5.44 |
| High OI | 28 | 5.18 | 11 | 5.25 | 5.36 | 4.94 | 23 | 5.39 | 10 | 5.24 |

**Table 6.10:** Means and standard deviations for intrinsic job satisfaction across time one, time two and time three for the experimental group and control group and split by individual differences

Note: NV – volatility; NW – withdrawal; EE – enthusiasm; EA – assertiveness; CO - orderliness; CI – industriousness; OI – intellect.

| Effect/Interaction | df | F | p | Partial $\eta^2$ |
|---|---|---|---|---|
| *Intrinsic job satisfaction* | | | | |
| Main effect of group | 1, 64 | .20 | .65 | .00 |
| Main effect of time | 2, 128 | .36 | .70 | .01 |
| Interaction between group and time | 2, 128 | 1.60 | .21 | .02 |
| Main effect of neuroticism volatility | 1, 64 | .18 | .68 | .00 |
| Interaction between volatility and time | 2, 128 | 1.68 | .19 | .03 |
| Interaction between volatility and group | 1, 64 | .02 | .90 | .00 |
| Interaction between volatility, time and group | 2, 128 | .44 | .65 | .01 |
| Main effect of neuroticism withdrawal | 1, 64 | .00 | .95 | .00 |
| Interaction between withdrawal and time | 2, 128 | .58 | .56 | .01 |
| Interaction between withdrawal and group | 1, 64 | .06 | .80 | .00 |
| Interaction between withdrawal, time and group | 2, 128 | .21 | .81 | .00 |
| Main effect of extraversion enthusiasm | 1, 64 | 4.45 | .04* | .07 |
| Interaction between enthusiasm and time | 2, 128 | .44 | .64 | .01 |
| Interaction between enthusiasm and group | 1, 64 | 1.19 | .28 | .02 |
| **Interaction between enthusiasm, time and group** | **2, 128** | **3.55** | **.03*** | **.05** |
| **Time*group*ee time 1 versus time 3** | **1, 64** | **6.90** | **.01**** | **.10** |
| Main effect of extraversion assertiveness | 1, 64 | .35 | .56 | .01 |
| Interaction between assertiveness and time | 2, 128 | .44 | .64 | .01 |
| Interaction between assertiveness and group | 1, 64 | 1.97 | .17 | .03 |
| Interaction between assertiveness, time and group | 2, 128 | 1.62 | .20 | .03 |
| Main effect of conscientiousness industriousness | 1, 64 | .26 | .61 | .00 |
| Interaction between industriousness and time | 2, 128 | 3.04 | .05* | .05 |
| Interaction between industriousness and group | 1, 64 | 2.92 | .09 | .04 |
| Interaction between industriousness, time and group | 2, 128 | 1.71 | .19 | .03 |
| Main effect of conscientiousness orderliness | 1, 64 | .02 | .89 | .00 |
| Interaction between orderliness and time | 2, 128 | .88 | .42 | .01 |
| Interaction between orderliness and group | 1, 64 | .32 | .57 | .01 |
| Interaction between orderliness, time and group | 2, 128 | 2.13 | .12 | .03 |
| **Time*group*co time 2 versus time 3** | **1, 64** | **4.46** | **.04*** | **.07** |
| Main effect of intellect | 1, 64 | 1.13 | .29 | .02 |
| Interaction between intellect and time | 2, 128 | 1.44 | .24 | .02 |
| Interaction between intellect and group | 1, 64 | .61 | .44 | .01 |
| Interaction between intellect, time and group | 2, 128 | .82 | .44 | .01 |

**Table 6.11:** Summary of mixed design ANOVA results for intrinsic job satisfaction of performance.

Note: * $p < 0.05$; ** $p < 0.01$; EE – enthusiasm; CO - orderliness; T1 & T2 $n = 84$; T3 $n = 70$.

*Main effect of enthusiasm.* The analysis showed that there was a significant effect of enthusiasm ($F(1, 64) = 4.45$, $p = .04$, partial $\eta^2 = .07$), indicating that there was a significant difference in intrinsic job satisfaction for individuals who scored either low or high enthusiasm. The plots depicted in Figure 6.12 show that for both the experimental and control group, individuals high in enthusiasm had higher ratings of intrinsic job satisfaction across all three time points.

**Figure 6.12:** Plot of means of intrinsic job satisfaction at time one, two and three split by high and low enthusiasm and experimental or control group.

*Interaction effect between enthusiasm and time and group.* The interaction graphs shown in Figure 6.12 indicate that in the experimental group, individuals who were low in enthusiasm increased in intrinsic job satisfaction between time one and time three. Individuals high in enthusiasm saw an increase in intrinsic job satisfaction between time one and time two followed by a decrease between time two and time three. For the control, the interaction graph shows that individuals low in enthusiasm experienced a decrease in intrinsic job satisfaction between time one and time three. Individuals high in enthusiasm showed very little change in intrinsic job

satisfaction between time one and time two followed by a decrease between time two and time three. The analysis suggests that these differences are significant ($F$ (2, 128) = 3.55, $p$ = .03, partial $\eta^2$ = .05). Exploration of the planned contrasts shows that the interaction between time one and time three scores is also significant ($F$ (1, 64) = 6.90, $p$ = .01, partial $\eta^2$ = .10).

*The interaction effect between industriousness and time.* The interaction graph shown in Figure 6.13 indicates that intrinsic job satisfaction changed in a similar way for participants in the experimental group for individuals low and high in industriousness, with an increase in intrinsic job satisfaction between time one and time two and very little change between time two and time three. For the control group, intrinsic job satisfaction scores increased steadily across the three time points for individuals low in industriousness whereas for individuals high in industriousness there was a sharp decrease in intrinsic job satisfaction between time one and time two followed by a very slight increase between time two and time three. The analysis suggests that this interaction between industriousness and time is significant ($F$ (2, 128) = 3.04, $p$ = .05, partial $\eta^2$ = .05) however as the interaction effect between industriousness, time and group was not significant, it appears as though these differences are not as a result of the coaching intervention.
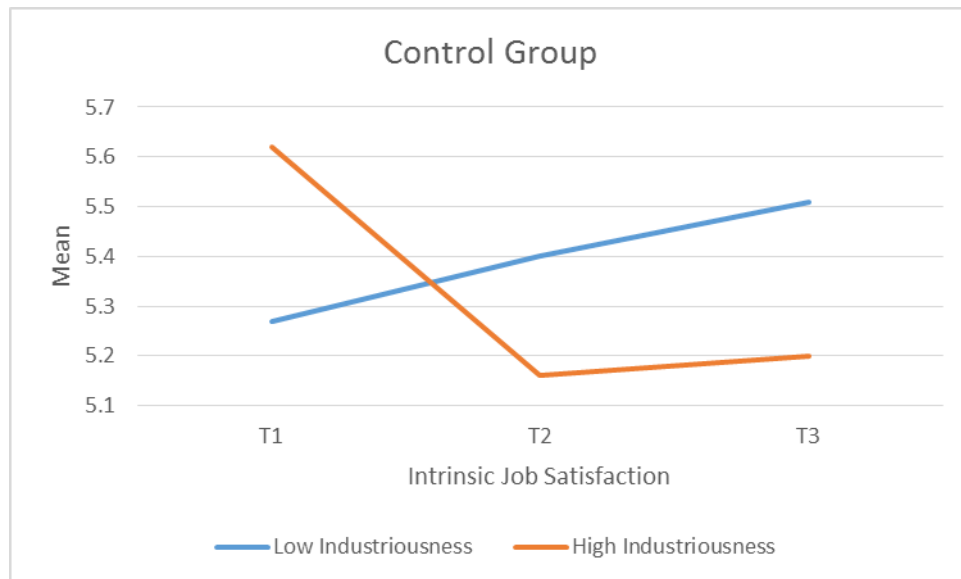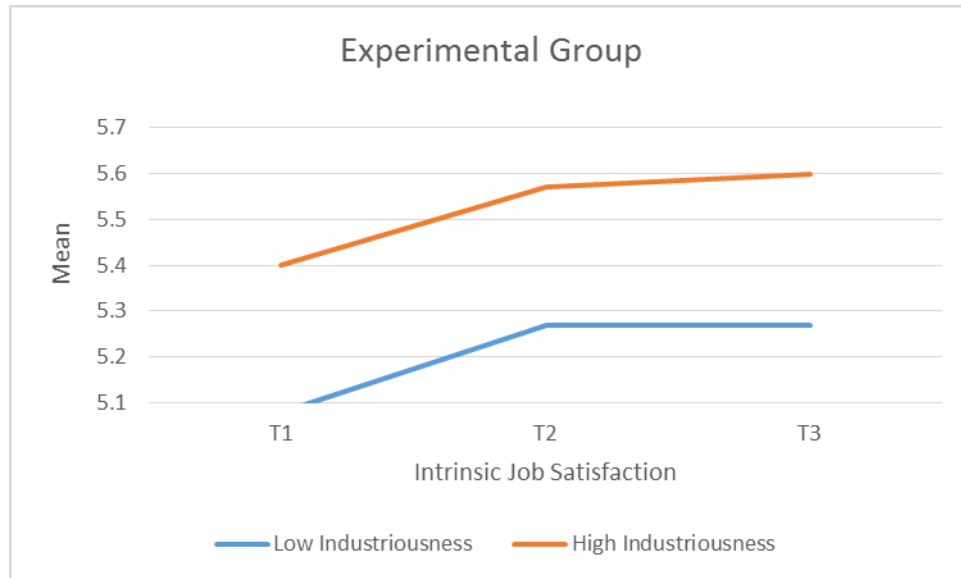
**Figure 6.13:** Plot of means of intrinsic job satisfaction at time one, two and three split by high and low industriousness and experimental or control group.

*Interaction effect between orderliness and time and group.* The interaction graphs shown in Figure 6.14 indicate that in the experimental group, individuals who were low and high in orderliness increased in intrinsic job satisfaction between time one and time two at the same rate. However, between time two and time three, individuals low in orderliness decreased in intrinsic job satisfaction whereas individuals high in orderliness continued to increase. For the control group, the interaction graph shows that individuals low in orderliness decreased in intrinsic job satisfaction between time one and time two and then increased between time two

and time three. Individuals high in orderliness decreased in intrinsic job satisfaction across all three time points. The analysis suggests that these differences are significant when comparing time two and time three scores only ($F$ (1, 64) = 4.46, $p$ = .04, partial $\eta^2$ = .07).
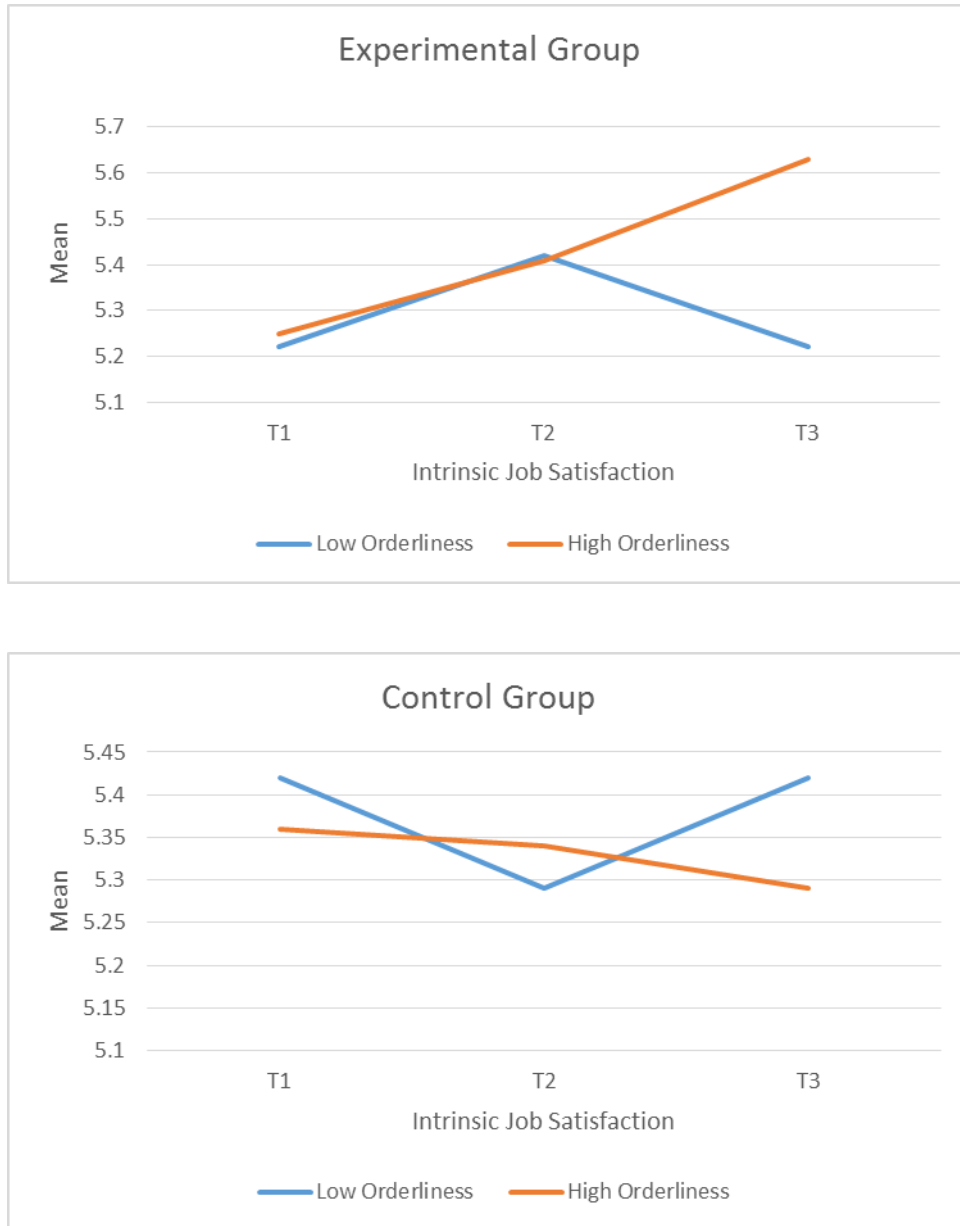




**Figure 6.14:** Plot of means of intrinsic job satisfaction at time one, two and three split by high and low orderliness and experimental or control group.

***Extrinsic job satisfaction.*** The means and standard deviations for extrinsic job satisfaction across the three time points, split by group (experimental or control) and individual differences (low or high) can be found in Table 6.12. To ensure that a mixed design ANOVA was appropriate the assumptions tests were analyzed. The Mauchly's test suggests normality as this is non-significant ($p = .77$) therefore the data was deemed suitable for analysis using ANOVA. The ANOVA results can be found in Table 6.13.

| | Time 1 | | | | Time 2 | | Time 3 | | | |
| | Experimental | | Control | | Experimental | Control | Experimental | | Control | |
| | *n* | Mean (*s.d*) | *n* | Mean (*s.d*) | Mean (*s.d*) | Mean (*s.d*) | *n* | Mean (*s.d*) | *n* | Mean (*s.d*) |
|---|---|---|---|---|---|---|---|---|---|---|
| Low NV | 25 | 4.95 | 19 | 5.13 | 4.90 | 4.87 | 20 | 5.06 | 15 | 4.94 |
| High NV | 28 | 4.97 | 12 | 5.11 | 5.23 | 5.13 | 23 | 5.04 | 10 | 4.91 |
| Low NW | 29 | 5.07 | 17 | 5.02 | 5.10 | 4.92 | 23 | 5.03 | 13 | 4.81 |
| High NW | 24 | 4.84 | 14 | 5.25 | 5.04 | 5.04 | 20 | 5.07 | 12 | 5.06 |
| Low EE | 27 | 4.66 | 16 | 5.07 | 4.76 | 4.97 | 22 | 4.90 | 12 | 4.94 |
| High EE | 26 | 5.28 | 15 | 5.17 | 5.40 | 4.97 | 21 | 5.20 | 13 | 4.92 |
| Low EA | 27 | 4.77 | 17 | 5.31 | 4.90 | 5.07 | 22 | 4.83 | 13 | 5.21 |
| High EA | 26 | 5.17 | 14 | 4.89 | 5.25 | 4.86 | 21 | 5.28 | 12 | 4.63 |
| Low CO | 26 | 4.93 | 19 | 5.37 | 5.06 | 5.06 | 22 | 4.84 | 14 | 5.05 |
| High CO | 27 | 5.00 | 12 | 4.73 | 5.08 | 4.83 | 21 | 5.27 | 11 | 4.78 |
| Low CI | 27 | 4.87 | 19 | 5.15 | 4.90 | 5.02 | 24 | 4.98 | 13 | 5.20 |
| High CI | 26 | 5.06 | 12 | 5.07 | 5.25 | 4.89 | 19 | 5.14 | 12 | 4.64 |
| Low OI | 25 | 5.02 | 20 | 5.23 | 5.00 | 5.18 | 20 | 5.09 | 15 | 5.14 |
| High OI | 28 | 4.91 | 11 | 4.92 | 5.14 | 4.60 | 23 | 5.01 | 10 | 4.61 |

**Table 6.12:** Means and standard deviations for extrinsic job satisfaction across time one, time two and time three for the experimental and control group and split by individual differences

Note: NV – volatility; NW – withdrawal; EE – enthusiasm; EA – assertiveness; CO - orderliness; CI – industriousness; OI – intellect.

| Effect/Interaction | df | F | p | Partial $\eta^2$ |
|---|---|---|---|---|
| *Extrinsic job satisfaction* | | | | |
| Main effect of group | 1, 64 | .05 | .82 | .00 |
| Main effect of time | 2, 128 | .73 | .49 | .01 |
| Interaction between group and time | 2, 128 | 1.65 | .20 | .03 |
| Main effect of neuroticism volatility | 1, 64 | .06 | .81 | .00 |
| Interaction between volatility and time | 2, 128 | 1.99 | .14 | .03 |
| Interaction between volatility and group | 1, 64 | .00 | .98 | .00 |
| Interaction between volatility, time and group | 2, 128 | .00 | 1.00 | .00 |
| Main effect of neuroticism withdrawal | 1, 64 | .03 | .87 | .00 |
| Interaction between withdrawal and time | 2, 128 | .63 | .53 | .01 |
| Interaction between withdrawal and group | 1, 64 | .49 | .49 | .01 |
| Interaction between withdrawal, time and group | 2, 128 | .65 | .53 | .01 |
| Main effect of extraversion enthusiasm | 1, 64 | 1.28 | .26 | .02 |
| Interaction between enthusiasm and time | 2, 128 | .47 | .63 | .01 |
| Interaction between enthusiasm and group | 1, 64 | 3.67 | .06 | .05 |
| Interaction between enthusiasm, time and group | 2, 128 | 1.95 | .15 | .03 |
| Main effect of extraversion assertiveness | 1, 64 | .07 | .79 | .00 |
| Interaction between assertiveness and time | 2, 128 | .73 | .49 | .01 |
| Interaction between assertiveness and group | 1, 64 | 6.67 | .01** | .09 |
| Interaction between assertiveness, time and group | 2, 128 | .92 | .40 | .01 |
| Main effect of conscientiousness industriousness | 1, 64 | .07 | .79 | .00 |
| Interaction between industriousness and time | 2, 128 | 1.02 | .36 | .02 |
| Interaction between industriousness and group | 1, 64 | 2.42 | .12 | .04 |
| Interaction between industriousness, time and group | 2, 128 | .34 | .71 | .01 |
| Main effect of conscientiousness orderliness | 1, 64 | .34 | .56 | .01 |
| Interaction between orderliness and time | 2, 128 | 3.26 | .04* | .05 |
| Interaction between orderliness and group | 1, 64 | 1.36 | .25 | .02 |
| Interaction between orderliness, time and group | 2, 128 | 1.79 | .17 | .03 |
| Main effect of intellect | 1, 64 | 1.39 | .24 | .02 |
| Interaction between intellect and time | 2, 128 | .37 | .69 | .01 |
| Interaction between intellect and group | 1, 64 | 2.06 | .16 | .03 |
| Interaction between intellect, time and group | 2, 128 | 1.00 | .37 | .02 |

**Table 6.13:** Summary of mixed design ANOVA results for extrinsic job satisfaction
Note: * $p < 0.05$; ** $p < 0.01$; T1 & T2 $n = 84$; T3 $n = 70$.

*Interaction effect between assertiveness and group.* The results for the test of between subjects effects suggest that there was a significant interaction between group and assertiveness ($F$ (1, 64) = 6.67, $p = .01$, partial $\eta^2 = .09$). The plots depicted in Figure 6.15 show that for the experimental group, individuals low and high in assertiveness both increased in extrinsic job satisfaction between time one and time two. Between time two and time three, individuals low in assertiveness decreased slightly in extrinsic job satisfaction whereas individuals high in assertiveness continued to increase in extrinsic job satisfaction. In the control group, individuals low in assertiveness decreased in extrinsic job satisfaction between time one and time two and then increased slightly between time two and time three. Individuals high in assertiveness had a

very slight decrease in extrinsic job satisfaction between time one and time two and then a sharper decrease between time two and time three. However, the lack of a significant interaction between assertiveness, group and time indicates that these differences in extrinsic job satisfaction are not as a result of the coaching intervention.
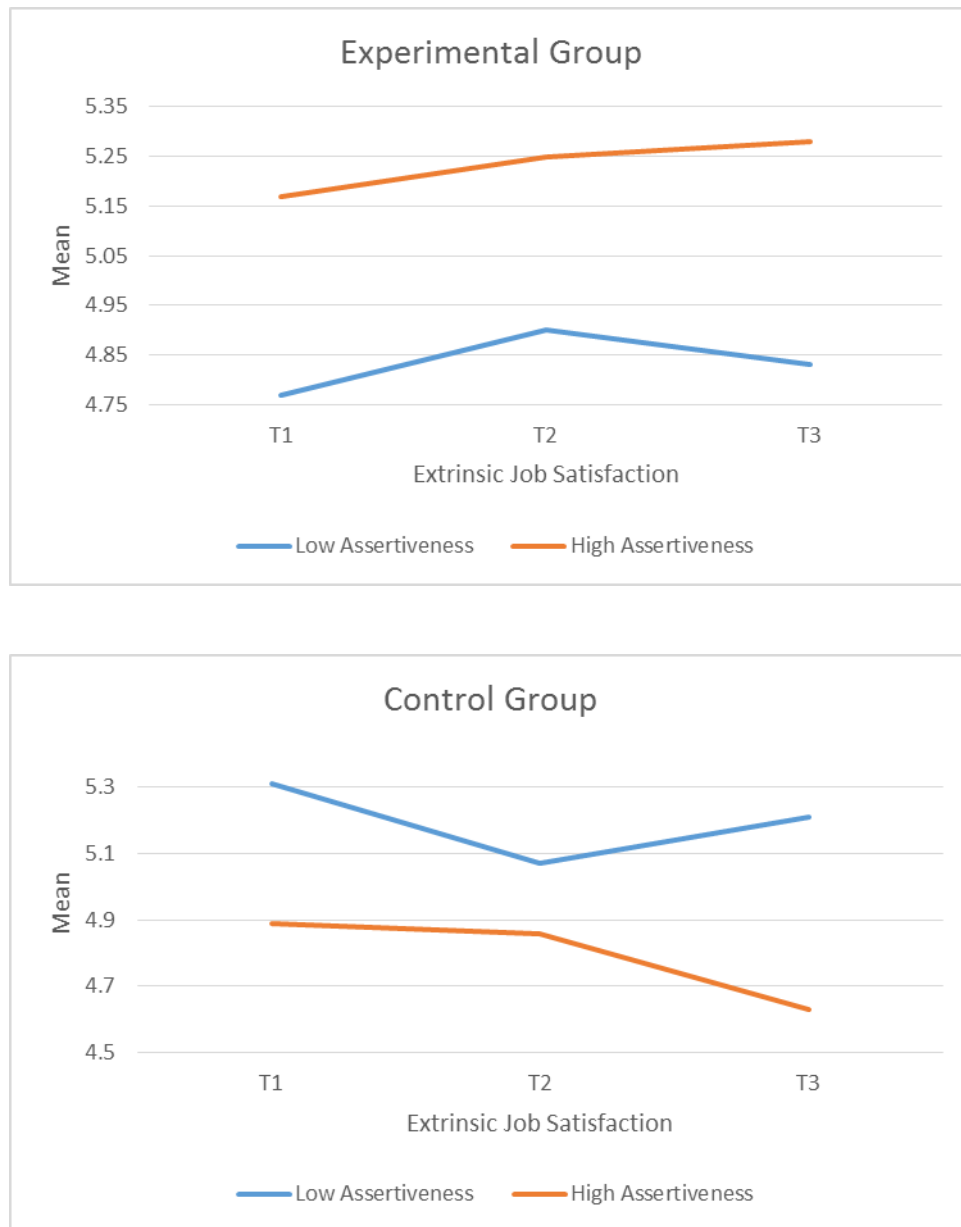


**Figure 6.15:** Plot of means of extrinsic job satisfaction at time one, two and three split by high and low assertiveness and experimental or control group.

*The interaction effect between orderliness and time.* The interaction graph shown in Figure 6.16 indicates that for the experimental group, extrinsic job satisfaction increased between time one

and time two for individuals low and high in orderliness. However, between time two and time three, individuals low in orderliness decreased in extrinsic job satisfaction whereas individuals high in orderliness continued to increase. For the control group, individuals low in orderliness decreased in extrinsic job satisfaction between time one and time two and then remained constant between time two and time three. For individuals' high in orderliness, extrinsic job satisfaction increased between time one and time two and then slightly decreased between time two and time three. The analysis suggests that there is was a significant interaction between orderliness and time ($F$ (2, 128) = 3.26, $p$ = .04, partial $\eta^2$ = .05). However, the lack of a significant interaction between orderliness, group and time indicates that these differences in extrinsic job satisfaction are not as a result of the coaching intervention.
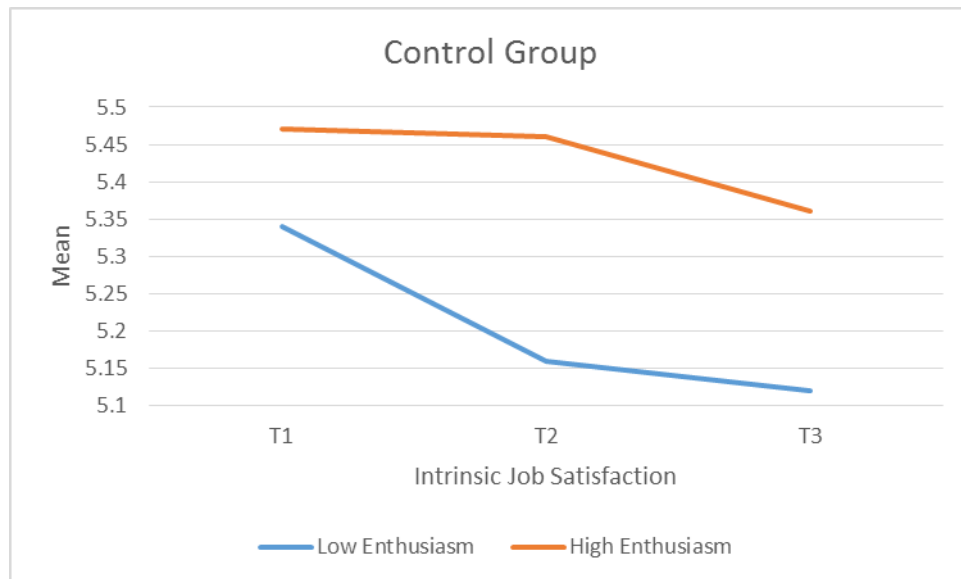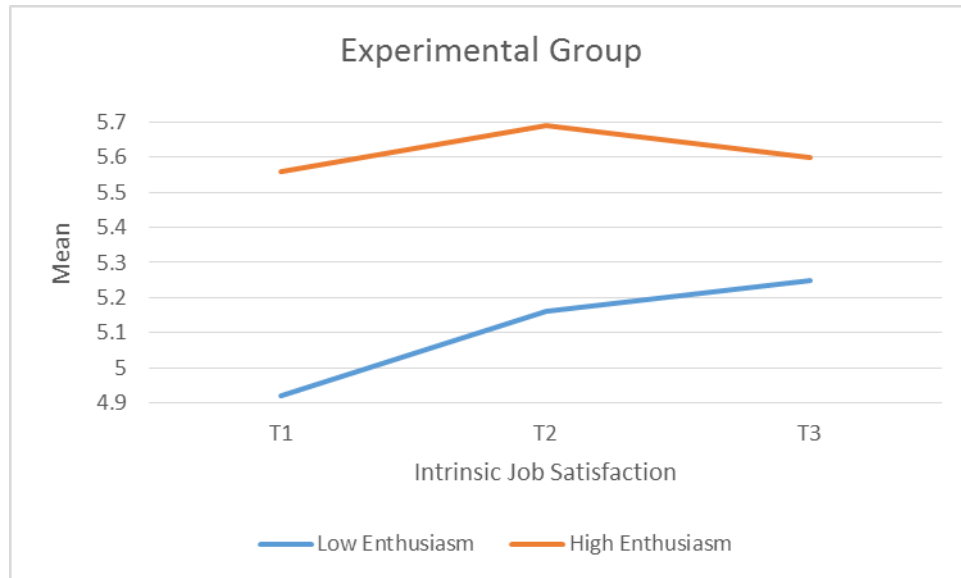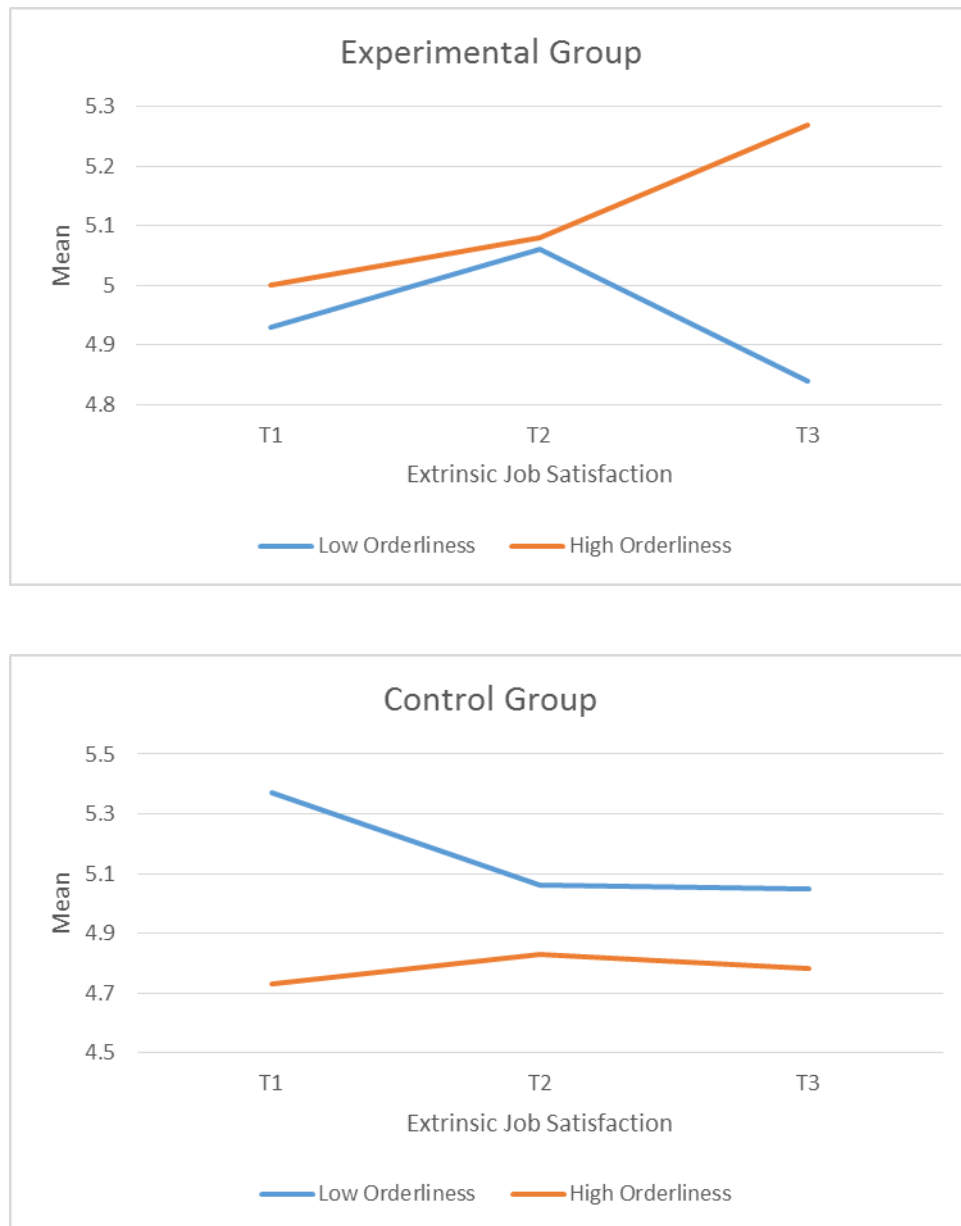
**Figure 6.16:** Plot of means of extrinsic job satisfaction at time one, two and three split by high and low orderliness and experimental or control group.

***Organizational commitment.*** The means and standard deviations for organizational commitment across the three time points, split by group (experimental or control) and individual differences (low or high) can be found in Table 6.14. To ensure that a mixed design ANOVA was appropriate the assumptions tests were analyzed. The Mauchly's test suggests normality as this is non-significant ($p = .51$) therefore the data was deemed suitable for analysis using ANOVA. The ANOVA results can be found in Table 6.15.

| | Time 1 | | | | Time 2 | | Time 3 | | | |
| | Experimental | | Control | | Experimental | Control | Experimental | | Control | |
| | $n$ | Mean (s.d) | $n$ | Mean (s.d) | Mean (s.d) | Mean (s.d) | $n$ | Mean (s.d) | $n$ | Mean (s.d) |
|---|---|---|---|---|---|---|---|---|---|---|
| Low NV | 25 | 5.10 | 19 | 5.19 | 5.05 | 5.16 | 20 | 4.86 | 15 | 5.14 |
| High NV | 28 | 5.27 | 12 | 5.44 | 5.59 | 5.52 | 23 | 5.42 | 10 | 5.60 |
| Low NW | 29 | 5.64 | 17 | 5.12 | 5.46 | 5.29 | 23 | 5.05 | 13 | 5.15 |
| High NW | 24 | 4.65 | 14 | 5.36 | 5.19 | 5.31 | 20 | 5.29 | 12 | 5.51 |
| Low EE | 27 | 4.65 | 16 | 5.25 | 4.86 | 5.20 | 22 | 5.04 | 12 | 5.20 |
| High EE | 26 | 5.76 | 15 | 5.20 | 5.82 | 5.41 | 21 | 5.29 | 13 | 5.44 |
| Low EA | 27 | 4.77 | 17 | 5.46 | 5.04 | 5.35 | 22 | 4.97 | 13 | 5.72 |
| High EA | 26 | 5.63 | 14 | 4.94 | 5.64 | 5.24 | 21 | 5.36 | 12 | 4.90 |
| Low CO | 26 | 5.10 | 19 | 5.48 | 5.30 | 5.43 | 22 | 4.82 | 14 | 5.55 |
| High CO | 27 | 5.28 | 12 | 4.81 | 5.37 | 5.10 | 21 | 5.51 | 11 | 5.04 |
| Low CI | 27 | 4.83 | 19 | 5.37 | 5.16 | 5.45 | 24 | 4.98 | 13 | 5.75 |
| High CI | 26 | 5.56 | 12 | 4.99 | 5.52 | 5.06 | 19 | 5.39 | 12 | 4.86 |
| Low OI | 25 | 5.02 | 20 | 5.37 | 5.28 | 5.48 | 20 | 5.21 | 15 | 5.58 |
| High OI | 28 | 5.34 | 11 | 4.97 | 5.39 | 4.97 | 23 | 5.12 | 10 | 4.94 |

**Table 6.14:** Means and standard deviations for organizational commitment across time one, time two and time three for the experimental and control group and split by individual differences

Note: NV – volatility; NW – withdrawal; EE – enthusiasm; EA – assertiveness; CO - orderliness; CI – industriousness; OI – intellect.

| Effect/Interaction | df | F | P | Partial $\eta^2$ |
|---|---|---|---|---|
| *Organizational Commitment* | | | | |
| Main effect of group | 1, 64 | .18 | .67 | .00 |
| Main effect of time | 2, 128 | .88 | .42 | .01 |
| Interaction between group and time | 2, 128 | .24 | .79 | .00 |
| Main effect of neuroticism volatility | 1, 64 | 3.09 | .08 | .05 |
| Interaction between volatility and time | 2, 128 | .21 | .81 | .00 |
| Interaction between volatility and group | 1, 64 | .18 | .68 | .00 |
| Interaction between volatility, time and group | 2, 128 | .24 | .79 | .00 |
| Main effect of neuroticism withdrawal | 1, 64 | .00 | .96 | .00 |
| Interaction between withdrawal and time | 2, 128 | 2.69 | .07 | .04 |
| Interaction between withdrawal and group | 1, 64 | .20 | .66 | .00 |
| Interaction between withdrawal, time and group | 2, 128 | 2.32 | .10 | .04 |
| Main effect of extraversion enthusiasm | 1, 64 | 1.91 | .17 | .03 |
| Interaction between enthusiasm and time | 2, 128 | .54 | .58 | .01 |
| Interaction between enthusiasm and group | 1, 64 | 1.41 | .24 | .02 |
| Interaction between enthusiasm, time and group | 2, 128 | 2.84 | .06 | .04 |
| **Time*group*ee time 1 versus time 3** | **1, 64** | **4.93** | **.03*** | **.07** |
| Main effect of extraversion assertiveness | 1, 64 | .14 | .71 | .00 |
| Interaction between assertiveness and time | 2, 128 | .98 | .38 | .02 |
| Interaction between assertiveness and group | 1, 64 | 4.21 | .04* | .06 |
| Interaction between assertiveness, time and group | 2, 128 | 1.15 | .32 | .02 |
| Main effect of conscientiousness industriousness | 1, 64 | .04 | .84 | .00 |
| Interaction between industriousness and time | 2, 128 | 1.37 | .26 | .02 |
| Interaction between industriousness and group | 1, 64 | 4.87 | .03* | .07 |
| Interaction between industriousness, time and group | 2, 128 | .35 | .71 | .01 |
| Main effect of conscientiousness orderliness | 1, 64 | .05 | .83 | .00 |
| Interaction between orderliness and time | 2, 128 | .67 | .52 | .01 |
| Interaction between orderliness and group | 1, 64 | 4.00 | .05* | .06 |
| Interaction between orderliness, time and group | 2, 128 | 1.37 | .26 | .02 |
| Main effect of intellect | 1, 64 | .77 | .38 | .01 |
| Interaction between intellect and time | 2, 128 | .60 | .55 | .01 |
| Interaction between intellect and group | 1, 64 | 1.56 | .22 | .02 |
| Interaction between intellect, time and group | 2, 128 | .10 | .90 | .00 |

**Table 6.15:** Summary of mixed design ANOVA results for organizational commitment
Note: * $p < 0.05$; EE – enthusiasm; T1 & T2 $n = 84$; T3 $n = 70$.

*Interaction effect between enthusiasm and time and group*. The interaction graphs shown in Figure 6.17 indicate that in the experimental group, individuals who were low in enthusiasm increased in organizational commitment across all three time points. Individuals high in enthusiasm increased slightly in organizational commitment between time one and time two with a decrease in organizational commitment between time two and time three. For the control group, the interaction graph shows that individuals low in enthusiasm decreased in organizational commitment between time one and time two and then remained constant between time two and time three. Individuals high in enthusiasm increased in organizational

commitment between time one and time three. The analysis suggests that the differences between time one and time three are significant ($F$ (1, 64) = 4.93, $p$ = .03, partial $\eta^2$ = .07).
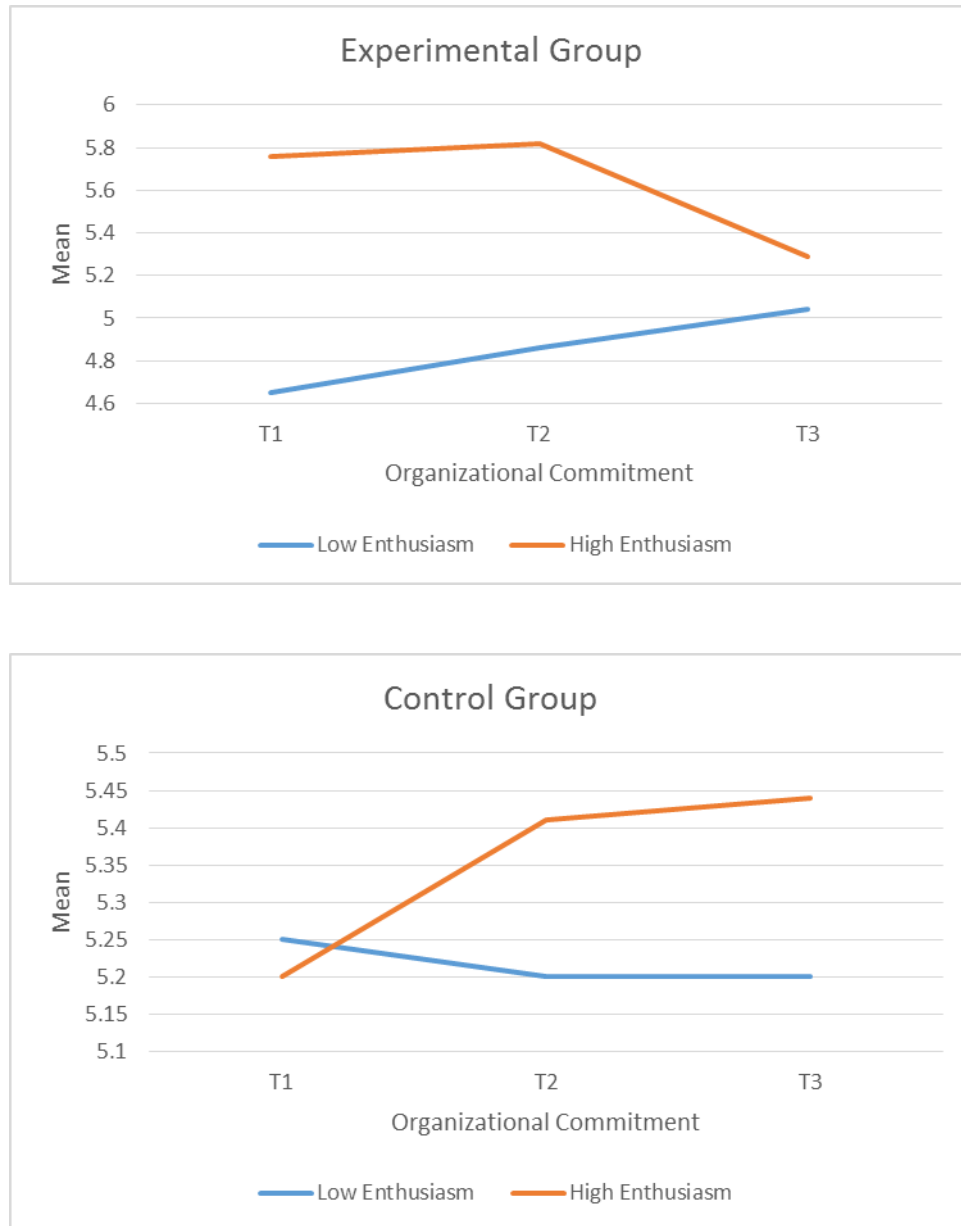


**Figure 6.17:** Plot of means of organizational commitment at time one, two and three split by high and low enthusiasm and experimental or control group.

*Interaction effect between assertiveness and group.* The results for the test of between subjects effects suggest that there was a significant interaction between groups and assertiveness ($F$ (1, 64) = 4.21, $p$ = .04, partial $\eta^2$ = .06). The interaction graphs shown in Figure 6.18 show that for the experimental group, individuals high in assertiveness had higher levels of organizational

commitment whereas in the control group, individuals low in assertiveness had higher levels of organizational commitment.
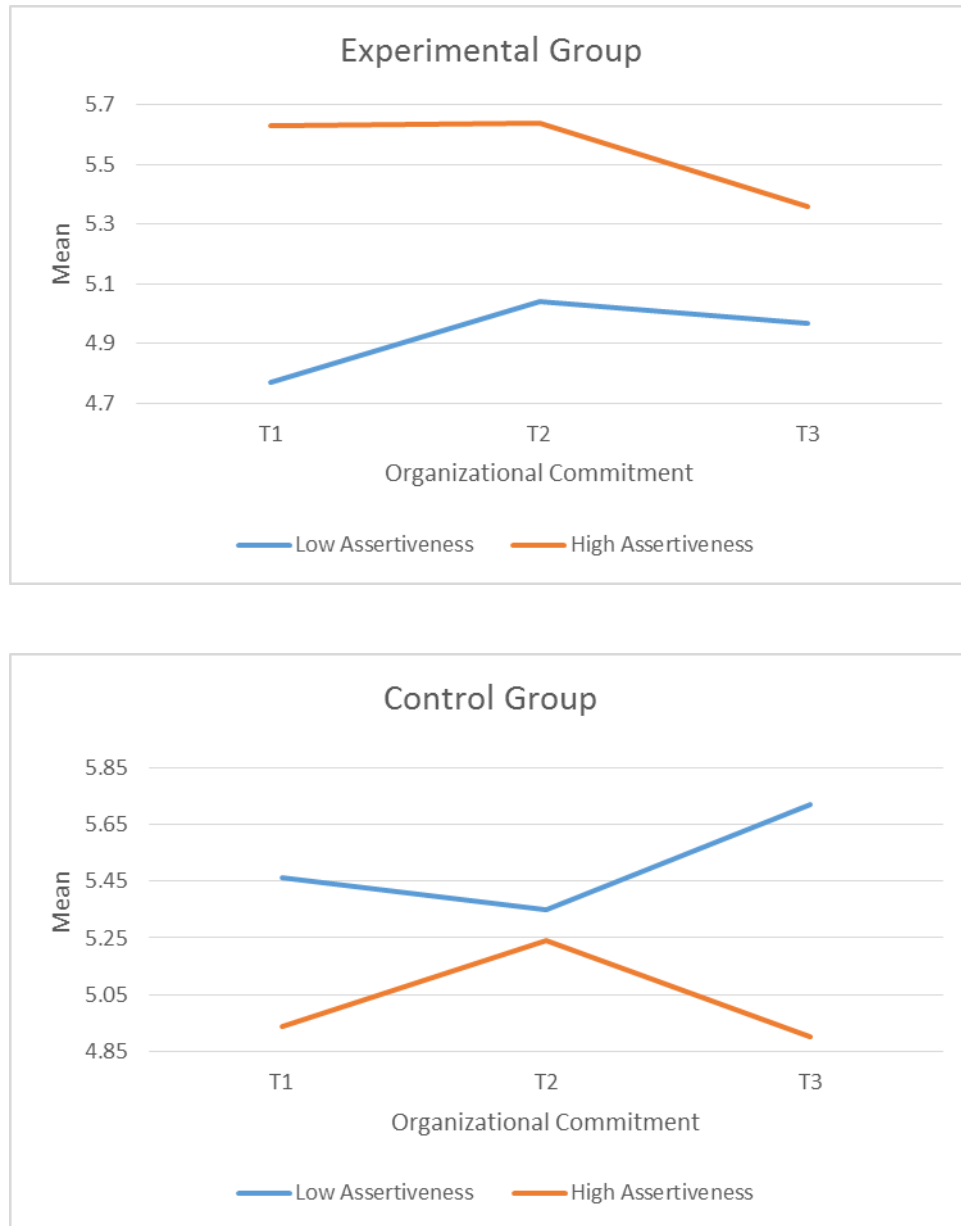


**Figure 6.18:** Plot of means of organizational commitment at time one, two and three split by high and low assertiveness and experimental or control group.

*Interaction effect between industriousness and group.* The results for the test of between subjects effects suggest that there was a significant interaction between groups and industriousness ($F_{(1, 64)} = 4.87$, $p = .03$, partial $\eta^2 = .07$). The interaction graphs shown in Figure 6.19 show that for the experimental group individuals high in industriousness had higher

levels of organizational commitment whereas for the control group individuals low in industriousness had higher levels of organizational commitment.
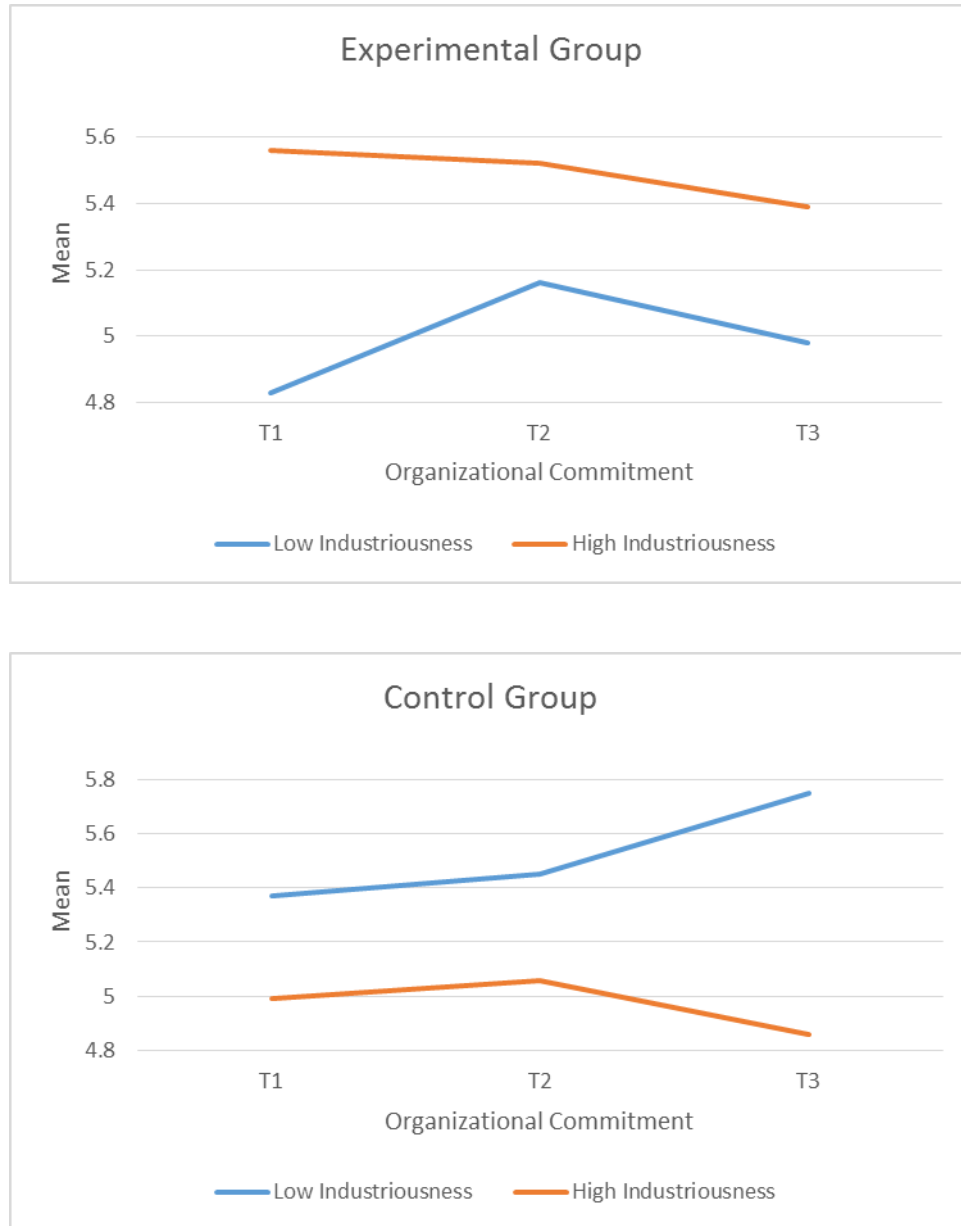


**Figure 6.19:** Plot of means of organizational commitment at time one, two and three split by high and low industriousness and experimental or control group.

*Interaction effect between orderliness and group.* The results for the test of between subjects effects suggest that there was a significant interaction between groups and orderliness ($F_{(1, 64)} = 4.00$, $p = .05$, partial $\eta^2 = .06$). The interaction graphs shown in Figure 6.20 show that for

the experimental group individuals high in orderliness had higher levels of organizational commitment whereas for the control group individuals low in orderliness had higher levels of organizational commitment.
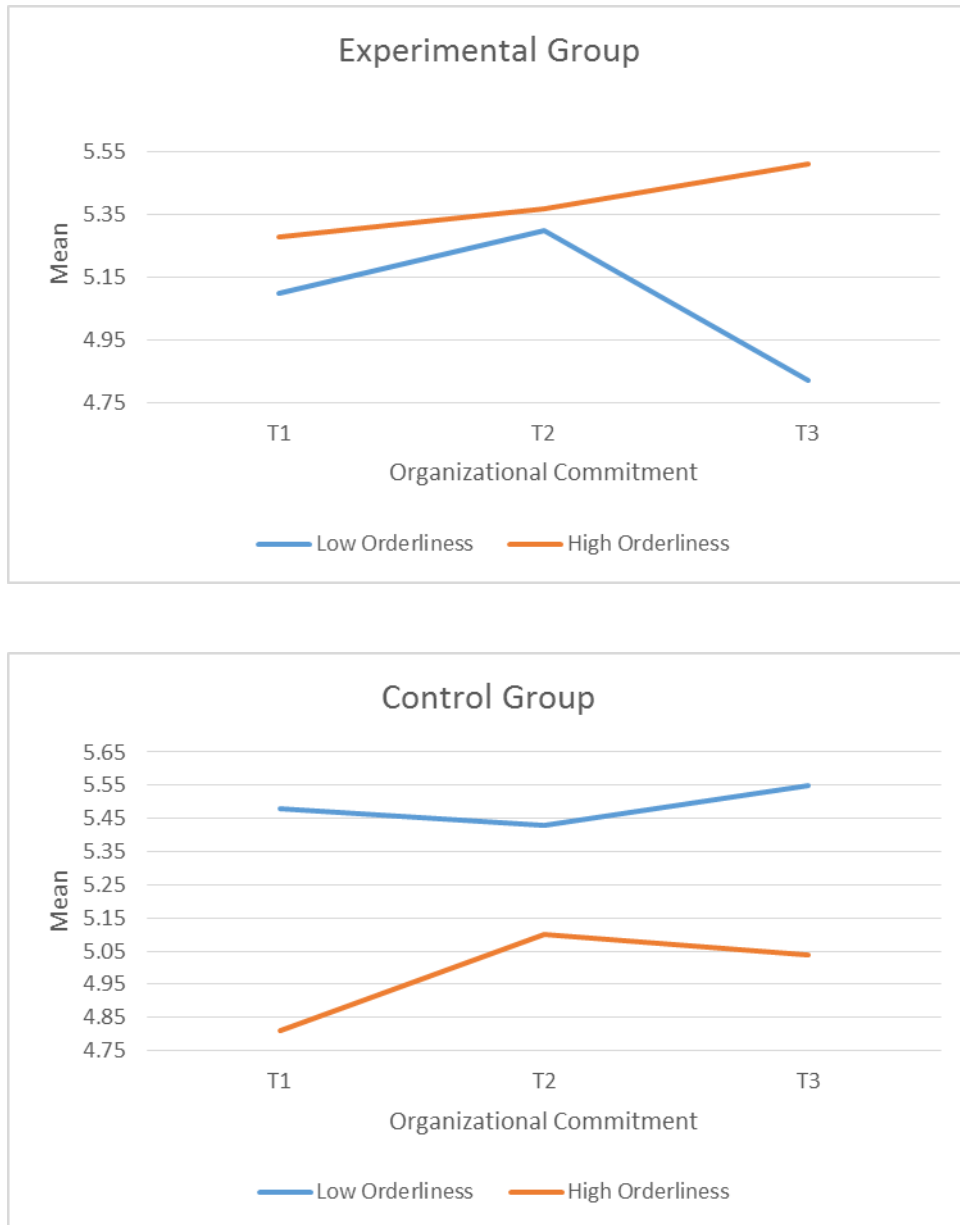


**Figure 6.20:** Plot of means of organizational commitment at time one, two and three split by high and low orderliness and experimental or control group.

**Hypotheses 6.1 and 6.2: results summary.** Based on the theoretical model shown in Figure 6.1, it was predicted that the coaching intervention would significantly improve outcomes when

the experimental group was compared to the control group across the three time points and that there would be a significant difference in the impact of coaching for participants who were high in enthusiasm, assertiveness, industriousness, orderliness and intellect and low in withdrawal and volatility. The analysis shows that these predictions were partially supported.

In relation to hypothesis 6.1, there was a significant difference when comparing self-ratings of performance for the experimental group and the control group across the three time points. Examining the mean scores shows that the experimental group showed a larger increase in self-ratings of performance than the control group. There was also a main effect of time for others-ratings of performance which indicates that others-ratings of performance increased across the three time points, however this increase was evident for both groups, therefore any change was not as a result of the coaching intervention. For the other outcomes measured (intrinsic and extrinsic job satisfaction and organizational commitment) there were no significant interactions.

For hypotheses 6.2a to 6.2d, the significant influence of individual differences was found for self-ratings of performance, intrinsic job satisfaction and organizational commitment. Of particular interest are the results that indicate that there was a significant interaction between individual differences, time and group, therefore suggesting that a greater change in the outcome was observed following the coaching intervention. The results indicate that for self-ratings of performance there was a significant interaction effect between enthusiasm and intellect, time and group. For enthusiasm, in the experimental group, the individuals high in enthusiasm had the highest self-ratings of performance across all three time points (see Figure 6.7), however individuals low in enthusiasm experienced the greatest increase in mean self-ratings of performance between time one and time three (see Table 6.6). For intellect, in the experimental group, the individuals high in intellect had the highest self-ratings of performance across all three time points (Figure 6.10), however the mean self-ratings of performance show that both groups (individuals' high and low in intellect) experienced the same degree of improvement in self-ratings of performance following the coaching intervention (see Table 6.6).

The results indicate that for intrinsic job satisfaction there was a significant interaction effect between enthusiasm and orderliness, time and group. For enthusiasm, in the experimental group, the individuals high in enthusiasm had the highest levels of intrinsic job satisfaction across all three time points (see Figure 6.12) and individuals high in enthusiasm experienced

the greatest increase in mean intrinsic job satisfaction between time one and time three (see Table 6.10). For orderliness, in the experimental group, individuals high in orderliness had the highest levels of intrinsic job satisfaction between time two and time three (see Figure 6.14) and individuals high in orderliness experienced the greatest increase in mean intrinsic job satisfaction between time two and time three (see Table 6.10).

The results indicate that for organizational commitment there was a significant interaction effect between enthusiasm, time and group. For enthusiasm, in the experimental group, the individuals high in enthusiasm had the highest levels of organizational commitment across all three time points (see Figure 6.17) however, individuals low in enthusiasm experienced the greatest increase in mean organizational commitment between time one and time three (see Table 6.14).

**Hypothesis 6.3.** The next stage of the hypothesis testing investigated whether perceived coaching effectiveness scores were significantly associated with outcomes (self and other-ratings of performance; intrinsic and extrinsic job satisfaction and organizational commitment) (experimental group only). Before testing this hypothesis, it is useful to examine the perceived coaching effectiveness scores in order to gain an understanding of the extent to which participants perceive the coaching to have impacting on each factor. The graph shown in Figure 6.21 shows that participants in this study perceived that the greatest impact of the coaching intervention was on the career clarity and planning and organizing factors, closely followed by personal effectiveness and adaptability and work well-being. All mean scores were above 3 indicating that, on average, participants perceived the coaching to have impacted positively on all six factors.
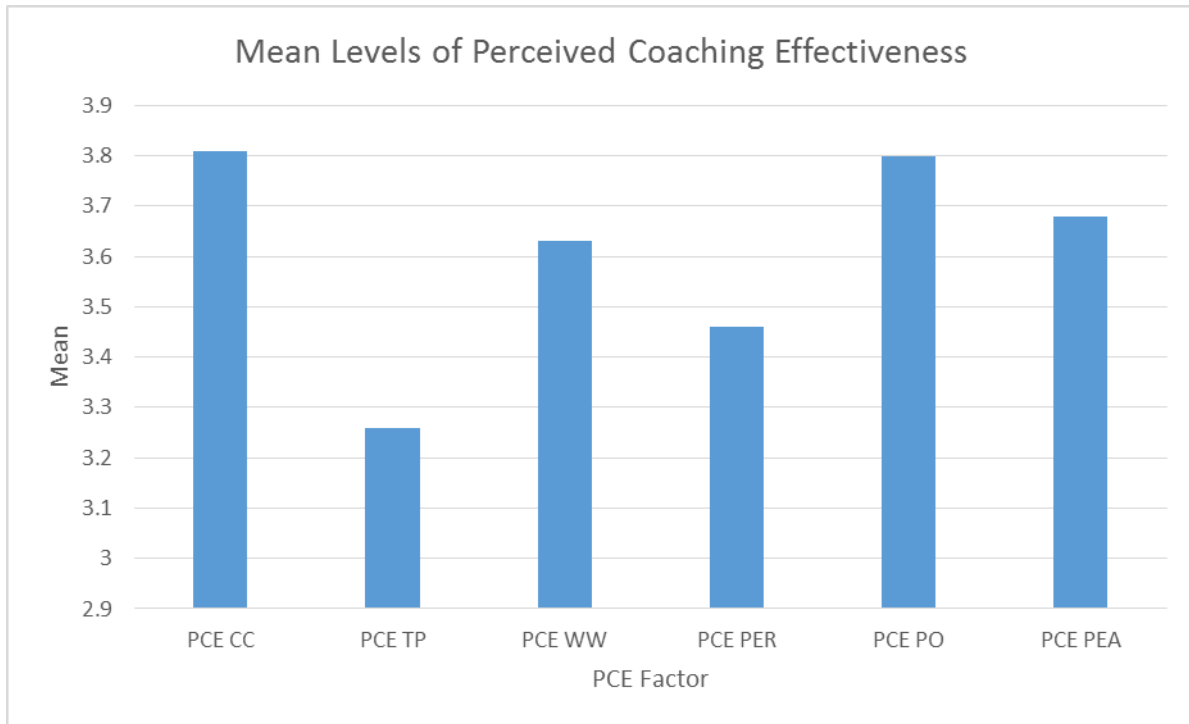
**Figure 6.21:** Graph of mean perceived coaching effectiveness scores.
Note: PCE – perceived coaching effectiveness; CC – career clarity; TP – team performance; WW – work well-being; PER – performance; PO – planning & organizing; PEA – personal effectiveness & adaptability; $n$ = 53.

To test hypothesis 6.3, the scores used for perceived coaching effectiveness were taken at time two, directly after coaching had completed. The six perceived coaching effectiveness factors (career clarity; team performance; work well-being; performance; planning and organizing and personal effectiveness and adaptability) were regressed onto the outcomes at time two and time three. Preliminary analysis was conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity. A standard multiple regression was conducted and the results are summarized in Table 6.16. It was predicted that perceived coaching effectiveness scores would significantly predict scores on the other coaching outcomes. The analysis indicates that this prediction was partially supported. The total variance explained by perceived coaching effectiveness was significant for self-ratings of performance at time two, intrinsic job satisfaction at time two and time three, extrinsic job satisfaction at time two and organizational commitment at time two. The total variance explained by the model was also marginally significant for self-ratings of performance at time three and extrinsic job satisfaction at time three.

In terms of statistically significant unique variance, the team performance factor was positively associated with self-ratings of performance ($B$ = .60, $p$ <.01); work well-being was positively

associated with intrinsic (T2 - $B$ = .64, $p$ <.00; T3 - $B$ = .62, $p$ <.00) and extrinsic job satisfaction (T2 - $B$ = .76, $p$ <.00; T3 - $B$ = .44, $p$ <.05) and organizational commitment (T2 - $B$ = .74, $p$ <.00; T3 - $B$ = .46, $p$ <.05). This indicates that higher perceptions of the impact of coaching on team performance was associated with higher self-ratings of performance and higher perceptions of the impact of coaching on work well-being was associated with higher intrinsic and extrinsic job satisfaction and organizational commitment. The association between work well-being and job satisfaction is not surprising given the nature of the items on the work well-being factor of the perceived coaching effectiveness scale. Individuals who experience higher levels of well-being and happiness at work because of coaching are likely to experience higher levels of satisfaction generally and also be more likely to be committed to their organization. Finally, the personal effectiveness and adaptability factor was negatively associated with intrinsic job satisfaction (T3 - $B$ = -.50, $p$ <.05). Therefore higher perceptions of the impact of coaching on personal effectiveness and adaptability were associated with lower ratings of intrinsic job satisfaction at time three. A potential explanation for this negative finding may relate to the potential discrepancy perceived by coachees as they improve following coaching in this area (they become more professional and more flexible in the way they work), however the recognition and responsibilities that they receive at work has not 'caught up'. Therefore the coachee perceives that they are working in a more effective way however the job conditions have remained the same, therefore they may perceive that they are now working at a higher level than their job role demands.

|  | Time Two | | | | Time Three | | | |
|---|---|---|---|---|---|---|---|---|
|  | $b$ | SE $B$ | $B$ | $p$ | $b$ | SE $B$ | $B$ | $P$ |
| **Self-ratings of performance** | | | | | | | | |
|  | $R^2 = .28$, $F(6, 46) = 2.96$, $p < .05$ | | | | $R^2 = .13$, $F(6, 42) = 2.08$, $p < .08$ | | | |
| Career clarity | 16 | .10 | .34 | .13 | .06 | .14 | .11 | .67 |
| Team performance | .13 | .09 | .22 | .17 | .40 | .14 | .60 | .01** |
| Work well-being | .11 | .06 | .27 | .09 | -.00 | .08 | -.01 | .97 |
| Performance | -.03 | .09 | -.05 | .76 | -.10 | .12 | -.18 | .38 |
| Planning & organizing | -.07 | .08 | -.15 | .36 | -.10 | .12 | -.13 | .51 |
| Personal effectiveness & adaptability | -.02 | .12 | -.04 | .86 | -.01 | .16 | -.01 | .97 |
| **Others-ratings of performance** | | | | | | | | |
|  | $R^2 = .08$, $F(6, 45) = .61$, $p < .72$ | | | | $R^2 = .11$, $F(6, 34) = .73$, $p < .63$ | | | |
| Career clarity | .12 | .14 | .22 | .39 | .14 | .15 | .26 | .37 |
| Team performance | .15 | .12 | .21 | .23 | .19 | .16 | .28 | .24 |
| Work well-being | -.01 | .10 | -.03 | .90 | .07 | .11 | .14 | .55 |
| Performance | -.13 | .12 | -.21 | .26 | -.19 | .13 | -.31 | .16 |
| Planning & organizing | -.04 | .10 | -.07 | .70 | -.13 | .12 | -.23 | .30 |
| Personal effectiveness & adaptability | -.13 | .16 | -.23 | .41 | -.13 | .18 | -.23 | .48 |
| **Intrinsic job satisfaction** | | | | | | | | |
|  | $R^2 = .33$, $F(6, 46) = 3.73$, $p < .01$ | | | | $R^2 = .40$, $F(6, 36) = 4.06$, $p < .00$ | | | |
| Career clarity | .02 | .26 | .02 | .94 | -.03 | .34 | -.02 | .94 |
| Team performance | .02 | .24 | .01 | .92 | .40 | .36 | .22 | .27 |
| Work well-being | .66 | .16 | .64 | .00*** | .74 | .19 | .62 | .00*** |
| Performance | -.16 | .22 | -.11 | .48 | -.47 | .29 | -.29 | .11 |
| Planning & organizing | .08 | .20 | .07 | .68 | .22 | .27 | .14 | .42 |
| Personal effectiveness & adaptability | -.51 | .31 | -.38 | .10 | -.78 | .39 | -.50 | .05* |

|  | Time Two | | | | Time Three | | | |
|  | *b* | SE *B* | *B* | *p* | *b* | SE *B* | *B* | *p* |
|---|---|---|---|---|---|---|---|---|
| **Extrinsic job satisfaction** | | | | | | | | |
| | $R^2 = .44$, $F_{(6, 46)} = 6.04$, $p < .00$ | | | | $R^2 = .25$, $F_{(6, 36)} = 2.03$, $p < .09$ | | | |
| Career clarity | -.08 | .29 | -.05 | .79 | -.21 | .41 | -.13 | .62 |
| Team performance | -.04 | .26 | -.02 | .88 | .42 | .44 | .20 | .35 |
| Work well-being | .98 | .17 | .76 | .00*** | .58 | .23 | .44 | .02* |
| Performance | -.25 | .25 | -.14 | .33 | -.36 | .35 | -.20 | .32 |
| Planning & organizing | .04 | .22 | .03 | .84 | .42 | .33 | .24 | .22 |
| Personal effectiveness & adaptability | -.53 | .34 | -.32 | .13 | -.74 | .48 | -.42 | .13 |
| | | | | | | | | |
| **Organizational commitment** | | | | | | | | |
| | $R^2 = .41$, $F_{(6, 46)} = 5.36$, $p < .00$ | | | | $R^2 = .23$, $F_{(6, 36)} = 1.82$, $p < .12$ | | | |
| Career clarity | .12 | .43 | .05 | .79 | .11 | .58 | .05 | .85 |
| Team performance | .38 | .39 | .14 | .33 | .59 | .62 | .20 | .35 |
| Work well-being | 1.37 | .26 | .74 | .00*** | .85 | .33 | .46 | .02* |
| Performance | -.07 | .36 | -.03 | .85 | -.12 | .50 | -.05 | .81 |
| Planning & organizing | -.17 | .32 | -.08 | .61 | .27 | .47 | .11 | .57 |
| Personal effectiveness & adaptability | -.95 | .50 | -.41 | .06 | -.79 | .67 | -.33 | .25 |

**Table 6.16:** Summary of multiple regression results for coaching outcomes and perceived coaching effectiveness.
Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.00$; T2 $n = 53$; T3 $n = 43$.

**Hypothesis 6.4.** The next stage of the analysis was to examine whether the individual difference variables were significantly associated with perceived coaching effectiveness. Preliminary analysis was conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity. The results are summarized in Table 6.17. In terms of statistically significant unique variance, intellect was positively associated with the team performance factor ($B = .32$, $p = <.05$), therefore higher intellect was associated with higher perceptions of the impact of coaching on team performance. The negative association between industriousness and planning and organizing was marginally significant ($B = -.26$, $p = <.09$), indicating that higher industriousness was associated with lower perceptions of the impact of coaching on the ability to plan and organize. This may be because individuals high on facets of conscientiousness do not perceive that planning and organizing is a development area for them, therefore they are unlikely to perceive coaching to have a positive impact in improvements in this area.

| | b | SE B | B | p |
|---|---|---|---|---|
| **Career clarity** | | | | |
| | $R^2 = .03$, $F(2,50) = .84$, $p < .44$ | | | |
| Volatility | .03 | .17 | .02 | .89 |
| Withdrawal | .13 | .13 | .17 | .31 |
| | $R^2 = .01$, $F(2, 50) = .12$, $p < .89$ | | | |
| Industriousness | .04 | .16 | .04 | .79 |
| Orderliness | .04 | .15 | .04 | .80 |
| | $R^2 = .05$, $F(2, 50) = 1.37$, $p < .26$ | | | |
| Enthusiasm | -.17 | .13 | -.20 | .19 |
| Assertiveness | .17 | .12 | .22 | .15 |
| | $R^2 = .01$, $F(1, 52) = .45$, $p < .51$ | | | |
| Intellect | .11 | .16 | .09 | .51 |
| **Team performance** | | | | |
| | $R^2 = .05$, $F(2, 50) = 1.24$, $p < .30$ | | | |
| Volatility | -.17 | .13 | -.21 | .20 |
| Withdrawal | -.01 | .10 | -.01 | .93 |
| | $R^2 = .03$, $F(2, 50) = .80$, $p < .45$ | | | |
| Industriousness | .14 | .12 | .17 | .27 |
| Orderliness | .01 | .11 | .01 | .95 |
| | $R^2 = .08$, $F(2, 50) = 2.03$, $p < .14$ | | | |
| Enthusiasm | .08 | .10 | .12 | .44 |
| Assertiveness | .12 | .09 | .20 | .18 |
| | $R^2 = .10$, $F(1, 51) = 5.86$, $p < .05$ | | | |
| Intellect | .29 | .12 | .32 | .02* |
| **Work well-being** | | | | |
| | $R^2 = .01$, $F(2, 50) = .17$, $p < .84$ | | | |
| Volatility | .05 | .20 | .04 | .81 |
| Withdrawal | .05 | .15 | .05 | .74 |
| | $R^2 = .03$, $F(2, 50) = .65$, $p < .53$ | | | |
| Industriousness | .13 | .18 | .11 | .47 |
| Orderliness | .09 | .17 | .08 | .62 |
| | $R^2 = .02$, $F(2, 50) = .37$, $p < .69$ | | | |
| Enthusiasm | -.07 | .16 | -.07 | .67 |
| Assertiveness | .12 | .14 | .13 | .39 |
| | $R^2 = .01$, $F(1, 51) = .47$, $p < .50$ | | | |
| Intellect | .13 | .19 | .10 | .50 |

|  | *b* | SE *B* | *B* | *p* |
|---|---|---|---|---|
| **Performance** | | | | |
| $R^2 = .01$, $F(2, 50) = .30$, $p < .74$ | | | | |
| Volatility | -.12 | .15 | -.13 | .45 |
| Withdrawal | .06 | .12 | .08 | .62 |
| | | | | |
| $R^2 = .01$, $F(2, 50) = .30$, $p < .74$ | | | | |
| Industriousness | -.05 | .14 | -.05 | .73 |
| Orderliness | .10 | .13 | .12 | .44 |
| | | | | |
| $R^2 = .01$, $F(2, 50) = .25$, $p < .78$ | | | | |
| Enthusiasm | -.08 | .12 | -.11 | .50 |
| Assertiveness | .05 | .11 | .07 | .64 |
| | | | | |
| $R^2 = .01$, $F(1, 51) = .67$, $p < .42$ | | | | |
| Intellect | .12 | .14 | .11 | .42 |
| **Planning & organizing** | | | | |
| $R^2 = .06$, $F(2, 50) = 1.65$, $p < .20$ | | | | |
| Volatility | .02 | .17 | .02 | .89 |
| Withdrawal | .19 | .12 | .24 | .15 |
| | | | | |
| $R^2 = .07$, $F(2, 50) = 1.72$, $p < .19$ | | | | |
| Industriousness | -.27 | .15 | -.26 | .09 |
| Orderliness | .01 | .14 | .01 | .94 |
| | | | | |
| $R^2 = .01$, $F(2, 50) = .16$, $p < .85$ | | | | |
| Enthusiasm | .00 | .13 | .00 | .99 |
| Assertiveness | -.06 | .12 | -.08 | .60 |
| | | | | |
| $R^2 = .00$, $F(1, 51) = .00$, $p < .98$ | | | | |
| Intellect | -.01 | .16 | -.00 | .98 |
| **Personal effectiveness & adaptability** | | | | |
| $R^2 = .05$, $F(2, 50) = 1.22$, $p < .30$ | | | | |
| Volatility | -.19 | .16 | -.19 | .24 |
| Withdrawal | .18 | .12 | .24 | .14 |
| | | | | |
| $R^2 = .01$, $F(2, 50) = .14$, $p < .87$ | | | | |
| Industriousness | -.08 | .15 | -.08 | .60 |
| Orderliness | .04 | .14 | .05 | .77 |
| | | | | |
| $R^2 = .06$, $F(2, 50) = 1.50$, $p < .23$ | | | | |
| Enthusiasm | -.19 | .12 | -.24 | .12 |
| Assertiveness | .14 | .11 | .19 | .21 |
| | | | | |
| $R^2 = .02$, $F(1, 51) = 1.16$, $p < .29$ | | | | |
| Intellect | .16 | .15 | .15 | .29 |

**Table 6.17:** Summary of multiple regression results for the perceived coaching effectiveness scale and the big five traits.
Note: * *p* < 0.05, *** p < 0.001; *n* = 53.

**Hypotheses 6.5.** The final set of hypotheses predicts the mediating influence of goal orientation and BIS/BAS between the individual differences variables and the coaching outcomes. The predicted processes through which individual differences are associated with goal orientation, BIS/BAS and the subsequent relationship with perceived coaching effectiveness and other coaching outcomes are depicted in the conceptual model in Figure 6.1. A causal sequence is shown which represents the direct and indirect paths of influence from the predictor variables, through the mediator variables to the final outcomes. So far, the direct associations between perceived coaching effectiveness and outcomes (H6.3) and personality and perceived coaching effectiveness (H6.4) have been explored. In order to fully test the proposed associations in the model, a series of multiple regressions are conducted in order to explore the remaining pathways and ascertain whether any significant direct associations are present. Where significant direct associations are identified the next stage is to explore indirect associations with mediation analysis. The findings of these regressions are presented next.

The analyses examining the associations between personality and BIS/BAS are summarized in Table 6.18. The total variance explained by the facets of extraversion was significant for BAS fun-seeking, drive and reward responsiveness. In terms of statistically significant unique variance, enthusiasm was positively associated with fun-seeking ($B = .53$, $p < .00$); drive ($B = .30$, $p < .05$) and reward ($B = .40$, $p < .01$). Assertiveness was positively associated with drive ($B = .36$, $p < .01$). The total variance explained by the facets of neuroticism was significant for BIS. With both withdrawal ($B = .20$, $p < .05$) and volatility ($B = .68$, $p < .00$) demonstrating a significant positive association with BIS.

| | b | SE B | B | p |
|---|---|---|---|---|
| **BAS-Fun-seeking** | | | | |
| | $R^2 = .26$, $F(2, 50) = 8.92$, $p < .00$ | | | |
| Assertiveness | -.03 | .08 | -.04 | .76 |
| Enthusiasm | .36 | .09 | .53 | .00*** |
| | | | | |
| **BAS- Drive** | | | | |
| | $R^2 = .30$, $F(2, 50) = 10.71$, $p < .00$ | | | |
| Assertiveness | .23 | .09 | .36 | .01** |
| Enthusiasm | .21 | .09 | .30 | .03* |
| | | | | |
| **BAS-Reward** | | | | |
| | $R^2 = .14$, $F(2, 50) = 3.90$, $p < .05$ | | | |
| Assertiveness | -.06 | .07 | -.11 | .44 |
| Enthusiasm | .22 | .08 | .40 | .01** |
| | | | | |
| **BIS** | | | | |
| | $R^2 = .65$, $F(2, 50) = 45.45$, $p < .00$ | | | |
| Withdrawal | .19 | .09 | .20 | .05* |
| Volatility | .49 | .07 | .68 | .00*** |

**Table 6.18:** Summary of multiple regression results for BIS/BAS and personality

Note: $n = 53$; * $p < .05$; ** $p < .01$; *** $p < .00$: BIS = behavioural inhibition systems; BAS – behavioural activation systems

Regarding the pathways from BIS/BAS and personality to goal orientation, summarized in Table 6.19, the total variance explained by BAS, the facets of extraversion and intellect were all significant for mastery goal orientation. The total variance explained by the facets of conscientiousness for mastery was also marginally significant. The total variance explained by BIS and the facets of neuroticism for performance avoidance goal orientation was significant and the total variance explained by BAS for performance approach goal orientation was marginally significant. In terms of statistically significant unique variance, BAS drive ($B = .45$, $p < .00$); assertiveness ($B = .35$, $p < .05$); industriousness ($B = .35$, $p < .05$); and intellect ($B = .57$, $p < .00$) were positively associated with mastery goal orientation. BAS drive was positively associated with performance approach goal orientation ($B = .36$, $p < .05$) and BAS fun-seeking was negatively associated with performance approach goal orientation ($B = -.31$, $p < .05$). Finally, BIS ($B = .76$, $p < .00$) and withdrawal ($B = .62$, $p < .00$) were positively associated with performance avoidance goal orientation.

|  | b | SE B | B | p |
|---|---|---|---|---|
| **Mastery Goal Orientation** | | | | |
| $R^2 = .26$, $F(3, 49) = 5.74$, $p < .00$ | | | | |
| BAS-Fun-seeking | -.12 | .19 | -.08 | .53 |
| BAS-Drive | .62 | .19 | .45 | .00*** |
| BAS-Reward | .31 | .24 | .17 | .21 |
| | | | | |
| $R^2 = .18$, $F(2, 50) = 5.39$, $p < .01$ | | | | |
| Assertiveness | .32 | .13 | .35 | .02* |
| Enthusiasm | .13 | .14 | .13 | .37 |
| | | | | |
| $R^2 = 10$, $F(2, 50) = 2.85$, $p < .07$ | | | | |
| Industriousness | .40 | .17 | .35 | .02* |
| Orderliness | -.10 | .16 | -.09 | .54 |
| | | | | |
| $R^2 = .33$, $F(1, 51) = 25.03$, $p < .00$ | | | | |
| Intellect | .76 | .15 | .57 | .00*** |
| **Performance Approach Goal Orientation** | | | | |
| $R^2 = .14$, $F(3, 49) = 2.72$, $p < .06$ | | | | |
| BAS-Fun-seeking | -.75 | .34 | -.31 | .03* |
| BAS-Drive | .81 | .34 | .36 | .02* |
| BAS-Reward | -.14 | .43 | -.05 | .75 |
| | | | | |
| $R^2 = .01$, $F(2, 50) = .22$, $p < .80$ | | | | |
| Assertiveness | .15 | .23 | .10 | .52 |
| Enthusiasm | -.10 | .25 | -.06 | .69 |
| **Performance Avoidance Goal Orientation** | | | | |
| $R^2 = .57$, $F(1, 51) = 67.48$, $p < .00$ | | | | |
| BIS | 1.80 | .22 | .76 | .00*** |
| | | | | |
| $R^2 = .42$, $F(2, 50) = 17.94$, $p < .00$ | | | | |
| Withdrawal | 1.07 | .22 | .62 | .00*** |
| Volatility | .10 | .29 | .04 | .73 |

**Table 6.19:** Summary of multiple regression results for goal orientation, BIS/BAS and personality

Note: $n = 53$; * $p < .05$; *** $p < .00$: BIS = behavioural inhibition systems; BAS – behavioural activation systems

The coefficients for pathways from BIS/BAS and goal orientation to perceived coaching effectiveness are summarized in Table 6.20. In terms of statistically significant unique variance, BAS drive ($B = .32$, $p < .05$); mastery ($B = .31$, $p < .05$) and performance approach ($B = .44$, $p < .00$) were positively associated with career clarity. BAS reward ($B = -.29$, $p < .05$) was negatively associated and mastery ($B = .32$, $p < .05$) and performance approach ($B = .34$, $p < .01$) were positively associated with team performance. Mastery goal orientation was positively associated with work well-being ($B = .27$, $p < .05$). Performance approach was positively associated with the performance factor of perceived coaching effectiveness ($B = .34$, $p < .01$).

Finally, there was a positive association between mastery ($B = .34$, $p < .01$) and performance approach ($B = .42$, $p < .00$) goal orientation and personal effectiveness and adaptability.

| | b | SE B | B | p |
|---|---|---|---|---|
| **PCE Career Clarity** | | | | |
| $R^2 = .13$, $F(3, 49) = 2.41$, $p < .08$ | | | | |
| BAS-Fun-seeking | -.14 | .18 | -.11 | .45 |
| BAS-Drive | .38 | .18 | .32 | .04* |
| BAS-Reward | .22 | .23 | .14 | .34 |
| $R^2 = .02$, $F(1, 51) = 1.20$, $p < .28$ | | | | |
| BIS | .17 | .15 | .15 | .28 |
| $R^2 = .10$, $F(1, 51) = 5.42$, $p < .02$ | | | | |
| Mastery | .27 | .12 | .31 | .02* |
| $R^2 = .19$, $F(1, 51) = 3.58$, $p < .00$ | | | | |
| Performance approach | .23 | .07 | .44 | .00*** |
| $R^2 = .03$, $F(1, 51) = 1.36$, $p < .25$ | | | | |
| Performance avoidance | .08 | .06 | .16 | .25 |
| **PCE Team Performance** | | | | |
| $R^2 = .35$, $F(3, 49) = 2.31$, $p < .09$ | | | | |
| BAS-Fun-seeking | .21 | .14 | .21 | .16 |
| BAS-Drive | .18 | .14 | .20 | .20 |
| BAS-Reward | -.36 | .18 | -.29 | .05* |
| $R^2 = .04$, $F(1, 51) = 1.91$, $p < .17$ | | | | |
| BIS | -.16 | .12 | -.19 | .17 |
| $R^2 = .10$, $F(1, 51) = 5.89$, $p < .02$ | | | | |
| Mastery | .22 | .09 | .32 | .02* |
| $R^2 = .12$, $F(1, 51) = 6.66$, $p < .01$ | | | | |
| Performance approach | .14 | .05 | .34 | .01** |
| $R^2 = .00$, $F(1, 51) = .08$, $p < .78$ | | | | |
| Performance avoidance | .01 | .05 | .04 | .78 |

|  | *b* | SE *B* | *B* | *p* |
|---|---|---|---|---|
| **PCE Work Well-being** | | | | |
| $R^2 = .10$, $F(3, 49) = 1.73$, $p < .17$ | | | | |
| BAS-Fun-seeking | -.06 | .22 | -.04 | .78 |
| BAS-Drive | .13 | .21 | .09 | .54 |
| BAS-Reward | .51 | .27 | .28 | .07 |
| $R^2 = .03$, $F(1, 51) = 1.37$, $p < .25$ | | | | |
| BIS | .21 | .18 | .16 | .25 |
| $R^2 = .07$, $F(1, 51) = 4.00$, $p < .05$ | | | | |
| Mastery | .27 | .14 | .27 | .05* |
| $R^2 = .03$, $F(1, 51) = 1.59$, $p < .21$ | | | | |
| Performance approach | .11 | .09 | .17 | .21 |
| $R^2 = .06$, $F(1,51) = 3.36$, $p < .07$ | | | | |
| Performance avoidance | .13 | .07 | .25 | .07 |
| **PCE Performance** | | | | |
| $R^2 = .03$, $F(3, 49) = .57$, $p < .64$ | | | | |
| BAS-Fun-seeking | .01 | .17 | .01 | .96 |
| BAS-Drive | .16 | .17 | .15 | .34 |
| BAS-Reward | -.24 | .21 | -.17 | .27 |
| $R^2 = .00$, $F(1, 51) = .02$, $p < .88$ | | | | |
| BIS | -.02 | .14 | -.02 | .88 |
| $R^2 = .02$, $F(1, 51) = 1.23$, $p < .27$ | | | | |
| Mastery | .12 | .11 | .15 | .27 |
| $R^2 = .12$, $F(1, 51) = 6.79$, $p < .01$ | | | | |
| Performance approach | .16 | .06 | .34 | .01** |
| $R^2 = .06$, $F(1, 51) = 3.39$, $p < .07$ | | | | |
| Performance avoidance | .10 | .06 | .25 | .07 |

| | b | SE B | B | p |
|---|---|---|---|---|
| **PCE Planning & Organizing** | | | | |
| | $R^2 = .07$, $F(3, 49) = 1.18$, $p < .33$ | | | |
| BAS-Fun-seeking | -.07 | .19 | -.05 | .73 |
| BAS-Drive | .04 | .19 | .03 | .83 |
| BAS-Reward | .41 | .24 | .26 | .09 |
| | $R^2 = .06$, $F(1, 51) = 3.10$, $p < .08$ | | | |
| BIS | .27 | .15 | .24 | .08 |
| | $R^2 = .02$, $F(1, 51) = 1.00$, $p < .32$ | | | |
| Mastery | .12 | .12 | .14 | .32 |
| | $R^2 = .00$, $F(1, 51) = .00$, $p < .97$ | | | |
| Performance approach | -.00 | .07 | -.01 | .97 |
| | $R^2 = .03$, $F(1, 51) = 1.51$, $p < .23$ | | | |
| Performance avoidance | .08 | .06 | .17 | .23 |
| **PCE Personal Effectiveness & Adaptability** | | | | |
| | $R^2 = .06$, $F(3, 49) = .95$, $p < .42$ | | | |
| BAS-Fun-seeking | -.16 | .18 | -.14 | .36 |
| BAS-Drive | .19 | .17 | .17 | .28 |
| BAS-Reward | .19 | .22 | .13 | .39 |
| | $R^2 = .01$, $F(1, 51) = .55$, $p < .46$ | | | |
| BIS | .11 | .14 | .10 | .46 |
| | $R^2 = .12$, $F(1, 51) = 6.79$, $p < .01$ | | | |
| Mastery | .28 | .11 | .34 | .01** |
| | $R^2 = .18$, $F(1, 51) = 10.78$, $p < .00$ | | | |
| Performance approach | .20 | .06 | .42 | .00*** |
| | $R^2 = .05$, $F(1, 51) = 2.43$, $p < .13$ | | | |
| Performance avoidance | .09 | .06 | .21 | .13 |

**Table 6.20:** Summary of multiple regression results for perceived coaching effectiveness, BIS/BAS and goal orientation
Note: $n = 53$; * $p < .05$; ** $p < .01$; BIS = behavioural inhibition systems; BAS – behavioural activation systems

Finally, the pathways from goal orientation, BIS/BAS and personality to the other outcomes are summarized in Table 6.21. In terms of statistically significant unique variance, mastery goal orientation (T2 - $B = .52$, $p < .00$; T3 - $B = .56$, $p < .00$); performance approach (T3 - $B = .49$, $p < .00$) and intellect (T2 - $B = .27$, $p < .05$; T3 - $B = .44$, $p < .00$) were positively associated with self-ratings of performance. Positive associations for enthusiasm (T2 - $B = .26$, $p < .09$) and industriousness (T3 - $B = .28$, $p < .09$) for self-ratings of performance and a negative association

for withdrawal (T3 - $B$ = .33, $p$ <.07) and self-ratings of performance were marginally significant. For others-ratings of performance, there was a negative association for performance avoidance goal orientation (T2 - $B$ = -.37, $p$ <.01). The positive associations for assertiveness (T3 - $B$ = .33, $p$ <.07) and industriousness (T2 - $B$ = .29, $p$ <.06) and others-ratings of performance were marginally significant. For intrinsic job satisfaction, there was a positive association for BAS reward (T2 - $B$ = .40, $p$ <.01; T3 - $B$ = .38, $p$ <.05). The positive associations for enthusiasm (T2 - $B$ = .27, $p$ <.08) and intrinsic job satisfaction and the negative associations for BAS fun-seeking (T3 - $B$ = -.32, $p$ <.06) and withdrawal (T2 - $B$ = -.27, $p$ <.09) were marginally significant. For extrinsic job satisfaction, the positive associations for BAS reward (T2 - $B$ = .33, $p$ <.05) and enthusiasm (T2 - $B$ = .32, $p$ <.05) were significant and the negative association between BAS fun-seeking (T3 - $B$ = -.31, $p$ <.06) was marginally significant. Finally, for organizational commitment, the positive association between BAS reward at time two was significant ($B$ = .32, $p$ <.05) and was marginally significant at time three ($B$ = .28, $p$ <.09).

| | Time Two | | | | Time Three | | | |
|---|---|---|---|---|---|---|---|---|
| | *b* | SE *B* | *B* | *p* | *b* | SE *B* | *B* | *p* |
| **Self-ratings of performance** | | | | | | | | |
| | $R^2 = .27$, $F(1, 51) = 19.20$, $p < .00$ | | | | $R^2 = .31$, $F(1, 41) = 18.29$, $p < .00$ | | | |
| Mastery | .21 | .05 | .52 | .00*** | .25 | .06 | .56 | .00*** |
| | $R^2 = .07$, $F(1, 51) = 3.68$, $p < .06$ | | | | $R^2 = .24$, $F(1, 41) = 12.95$, $p < .00$ | | | |
| Performance approach | .07 | .03 | .26 | .06 | .14 | .04 | .49 | .00*** |
| | $R^2 = .00$, $F(1, 51) = .10$, $p < .76$ | | | | $R^2 = .01$, $F(1, 41) = .39$, $p < .54$ | | | |
| Performance avoidance | .01 | .03 | .04 | .76 | -.03 | .04 | -.10 | .54 |
| | $R^2 = .10$, $F(3, 49) = 1.76$, $p < .17$ | | | | $R^2 = .07$, $F(3, 39) = .97$, $p < .42$ | | | |
| BAS-Fun-seeking | .06 | .09 | .10 | .50 | .01 | .11 | .01 | .94 |
| BAS-Drive | .14 | .09 | .24 | .12 | .19 | .12 | .28 | .11 |
| BAS-Reward | .03 | .11 | .26 | .80 | -.07 | .15 | -.08 | .66 |
| | $R^2 = .02$, $F(1, 51) = 1.26$, $p < .27$ | | | | $R^2 = .06$, $F(1, 41) = 2.82$, $p < .10$ | | | |
| BIS | -.08 | .07 | -.16 | .27 | -.16 | .09 | -.25 | .10 |
| | $R^2 = .08$, $F(2, 50) = 2.20$, $p < .12$ | | | | $R^2 = .12$, $F(2, 40) = 2.81$, $p < .07$ | | | |
| Assertiveness | .02 | .06 | .06 | .71 | .11 | .07 | .26 | .12 |
| Enthusiasm | .10 | .06 | .26 | .09 | .07 | .07 | .15 | .37 |
| | $R^2 = .04$, $F(2, 50) = .92$, $p < .41$ | | | | $R^2 = .11$, $F(2, 40) = 2.46$, $p < .09$ | | | |
| Industriousness | .09 | .07 | .18 | .24 | .15 | .09 | .28 | .09 |
| Orderliness | .01 | .07 | .02 | .92 | .06 | .08 | .11 | .48 |
| | $R^2 = .03$, $F(2, 50) = .78$, $p < .46$ | | | | $R^2 = .11$, $F(2, 40 = 2.51$, $p < .09$ | | | |
| Withdrawal | -.06 | .06 | -.17 | .30 | -.14 | .07 | -.33 | .07 |
| Volatility | -.00 | .08 | -.01 | .96 | -.01 | .10 | -.02 | .93 |
| | $R^2 = .07$, $F(1, 51) = 4.05$, $p < .05$ | | | | $R^2 = .20$, $F(1, 41) = 10.08$, $p < .00$ | | | |
| Intellect | .15 | .07 | .27 | .05* | .27 | .08 | .44 | .00*** |

| | Time Two | | | | Time Three | | | |
|---|---|---|---|---|---|---|---|---|
| | *b* | SE *B* | *B* | *p* | *b* | SE *B* | *B* | *p* |
| **Others-ratings of performance** | | | | | | | | |
| | $R^2 = .00$, $F(1, 50) = .05$, $p < .83$ | | | | $R^2 = .01$, $F(1, 39) = .55$, $p < .47$ | | | |
| Mastery | .01 | .07 | .03 | .83 | .05 | .07 | .12 | .47 |
| | $R^2 = .00$, $F(1, 50) = .00$, $p < .95$ | | | | $R^2 = .01$, $F(1, 39) = .55$, $p < .46$ | | | |
| Performance approach | .01 | .04 | .01 | .95 | .03 | .05 | .12 | .46 |
| | $R^2 = .14$, $F(1, 50) = 7.77$, $p < .01$ | | | | $R^2 = .04$, $F(1, 39) = 1.48$, $p < .23$ | | | |
| Performance avoidance | -.09 | .03 | -.37 | .01* | -.05 | .04 | -.19 | .23 |
| | $R^2 = .05$, $F(3, 48) = .78$, $p < .51$ | | | | $R^2 = .01$, $F(3, 37) = .10$, $p < .96$ | | | |
| BAS-Fun-seeking | -.08 | .10 | -.12 | .43 | -.06 | .12 | -.09 | .62 |
| BAS-Drive | .11 | .10 | .17 | .30 | .03 | .13 | .05 | .81 |
| BAS-Reward | .10 | .14 | .11 | .48 | .04 | .18 | .04 | .84 |
| | $R^2 = .03$, $F(1, 50) = 1.47$, $p < .23$ | | | | $R^2 = .04$, $F(1, 39) = 1.46$, $p < .24$ | | | |
| BIS | -.10 | .08 | -.17 | .23 | -.12 | .10 | -.19 | .24 |
| | $R^2 = .02$, $F(2, 49) = .39$, $p < .68$ | | | | $R^2 = .10$, $F(2, 38) = 2.07$, $p < .14$ | | | |
| Assertiveness | .06 | .07 | .14 | .38 | .14 | .08 | .33 | .07 |
| Enthusiasm | -.03 | .07 | -.07 | .65 | -.13 | .08 | -.29 | .11 |
| | $R^2 = .10$, $F(2, 49) = 2.77$, $p < .07$ | | | | $R^2 = .04$, $F(2, 38) = .86$, $p < .43$ | | | |
| Industriousness | .16 | .08 | .29 | .06 | .09 | .09 | .15 | .36 |
| Orderliness | .03 | .08 | .06 | .67 | .05 | .09 | .10 | .56 |
| | $R^2 = .01$, $F(1, 50) = .67$, $p < .42$ | | | | $R^2 = .04$, $F(1, 39) = 1.77$, $p < .19$ | | | |
| Intellect | .07 | .09 | .12 | .42 | .13 | .10 | .21 | .19 |
| | $R^2 = .04$, $F(2, 49) = 1.12$, $p < .33$ | | | | $R^2 = .03$, $F(2, 38) = .60$, $p < .55$ | | | |
| Withdrawal | -.07 | .07 | -.16 | .33 | -.05 | .08 | -.13 | .49 |
| Volatility | -.04 | .09 | -.08 | .65 | -.04 | .10 | .07 | .71 |

|  | Time Two | | | | Time Three | | | |
|---|---|---|---|---|---|---|---|---|
|  | *b* | SE *B* | *B* | *p* | *b* | SE *B* | *B* | *p* |
| **Intrinsic Job Satisfaction** | | | | | | | | |
|  | $R^2 = .00$, $F(1, 51) = .06$, $p < .81$ | | | | $R^2 = .01$, $F(1, 41) = .39$, $p < .53$ | | | |
| Mastery | .04 | .15 | .03 | .81 | .12 | .19 | .10 | .53 |
|  | $R^2 = .00$, $F(1, 51) = .00$, $p < 1.00$ | | | | $R^2 = .00$, $F(1, 41) = .01$, $p < .94$ | | | |
| Performance approach | .00 | .09 | .00 | 1.00 | -.01 | .11 | -.01 | .94 |
|  | $R^2 = .01$, $F(1, 51) = .28$, $p < .60$ | | | | $R^2 = .01$, $F(1, 41) = .34$, $p < .56$ | | | |
| Performance avoidance | -.04 | .08 | -.07 | .60 | -.07 | .11 | -.09 | .56 |
|  | $R^2 = .19$, $F(3, 49) = 3.93$, $p < .01$ | | | | $R^2 = .17$, $F(3, 39) = 2.74$, $p < .06$ | | | |
| BAS-Fun-seeking | .14 | .22 | .09 | .52 | -.58 | .29 | -.32 | .06 |
| BAS-Drive | .03 | .21 | .02 | .89 | .22 | .30 | .12 | .47 |
| BAS-Reward | .78 | .27 | .40 | .01** | .91 | .39 | .38 | .03* |
|  | $R^2 = .01$, $F(1, 51) = .26$, $p < .61$ | | | | $R^2 = .00$, $F(1, 41) = .00$ $p < .95$ | | | |
| BIS | -.10 | .19 | -.07 | .61 | .02 | .27 | .01 | .95 |
|  | $R^2 = .08$, $F(2, 50) = 2.09$, $p < .13$ | | | | $R^2 = .02$, $F(2, 40) = .41$, $p < .67$ | | | |
| Assertiveness | .02 | .14 | .02 | .92 | -.05 | .20 | -.04 | .82 |
| Enthusiasm | .29 | .16 | .27 | .08 | .19 | .22 | .16 | .38 |
|  | $R^2 = .05$, $F(2, 50) = 1.35$, $p < .27$ | | | | $R^2 = .07$, $F(2, 40) = 1.49$, $p < .24$ | | | |
| Industriousness | .30 | .19 | .24 | .12 | .37 | .24 | .25 | .13 |
| Orderliness | -.05 | .18 | -.04 | .80 | .06 | .24 | .04 | .80 |
|  | $R^2 = .06$, $F(2, 50) = 1.59$, $p < .22$ | | | | $R^2 = .01$, $F(2, 40) = .13$, $p < .88$ | | | |
| Withdrawal | -.27 | .16 | -.27 | .09 | -.10 | .21 | -.08 | .65 |
| Volatility | .27 | .21 | .21 | .19 | .01 | .28 | .01 | .97 |
|  | $R^2 = .01$, $F(1, 51) = .40$, $p < .53$ | | | | $R^2 = .00$, $F(1, 41) = .00$, $p < .99$ | | | |
| Intellect | -.13 | .20 | -.09 | .53 | -.00 | .26 | -.00 | .99 |

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| | **Time Two** | | | | **Time Three** | | | |
|---|---|---|---|---|---|---|---|---|
| | *b* | SE *B* | *B* | *p* | *b* | SE *B* | *B* | *p* |
| **Extrinsic Job Satisfaction** | | | | | | | | |
| | $R^2 = .01$, $F(1, 51) = .51$, $p < .48$ | | | | $R^2 = .01$, $F(1, 41) = .44$, $p < .51$ | | | |
| Mastery | .13 | .18 | .10 | .48 | .14 | .21 | .10 | .51 |
| | $R^2 = .00$, $F(1, 51) = .08$, $p < .78$ | | | | $R^2 = .00$, $F(1, 41) = .18$, $p < .67$ | | | |
| Performance approach | .03 | .11 | .04 | .78 | -.06 | .14 | -.10 | .67 |
| | $R^2 = .00$, $F(1, 51) = .00$, $p < .99$ | | | | $R^2 = .01$, $F(1, 41) = .53$, $p < .47$ | | | |
| Performance avoid | .00 | .10 | .00 | .99 | -.09 | .12 | -.11 | .47 |
| | $R^2 = .14$, $F(3, 49) = 2.61$, $p < .06$ | | | | $R^2 = .15$, $F(3, 39) = 2.32$, $p < .09$ | | | |
| BAS-Fun-seeking | -.06 | .28 | -.03 | .82 | -.62 | .33 | -.31 | .06 |
| BAS-Drive | .20 | .27 | .11 | .45 | .42 | .34 | .20 | .22 |
| BAS-Reward | .78 | .35 | .33 | .03* | .75 | .44 | .28 | .09 |
| | $R^2 = .00$, $F(1, 51) = .20$, $p < .66$ | | | | $R^2 = .00$, $F(1, 41) = .00$, $p < 1.00$ | | | |
| BIS | .10 | .23 | .06 | .66 | .00 | .29 | .00 | 1.00 |
| | $R^2 = .10$, $F(2, 50) = 2.86$, $p < .07$ | | | | $R^2 = .02$, $F(2, 40) = .44$ $p < .65$ | | | |
| Assertiveness | .02 | .17 | .01 | .93 | -.05 | .23 | -.04 | .84 |
| Enthusiasm | .41 | .19 | .32 | .04* | .22 | .24 | .16 | .37 |
| | $R^2 = .05$, $F(2, 50) = 1.20$, $p < .31$ | | | | $R^2 = .02$, $F(2, 40) = .35$, $p < .70$ | | | |
| Industriousness | .36 | .23 | .23 | .13 | .21 | .28 | .12 | .46 |
| Orderliness | -.12 | .22 | -.08 | .59 | .04 | .27 | .02 | .90 |
| | $R^2 = .00$, $F(1, 51) = .01$, $p < .92$ | | | | $R^2 = .00$, $F(1, 41) = .00$, $p < .99$ | | | |
| Intellect | .02 | .24 | .01 | .92 | -.00 | .29 | .00 | .99 |
| | $R^2 = .05$, $F(2, 50) = 1.35$, $p < .27$ | | | | $R^2 = .02$, $F(2, 40) = .30$, $p < .74$ | | | |
| Withdrawal | -.28 | .19 | -.23 | .16 | -.06 | .23 | -.04 | .81 |
| Volatility | .37 | .26 | .23 | .16 | -.16 | .31 | -.09 | .61 |

| | Time Two | | | | Time Three | | | |
|---|---|---|---|---|---|---|---|---|
| | *b* | SE *B* | *B* | *p* | *b* | SE *B* | *B* | *p* |
| **Organizational Commitment** | | | | | | | | |
| | $R^2 = .02$, $F(1, 51) = 1.22$, $p < .27$ | | | | $R^2 = .01$, $F(1, 41) = .36$, $p < .55$ | | | |
| Mastery | .29 | .26 | .15 | .27 | .18 | .30 | .09 | .55 |
| | $R^2 = .01$, $F(1, 51) = .34$, $p < .57$ | | | | $R^2 = .04$, $F(1, 41) = 1.60$, $p < .21$ | | | |
| Performance approach | .09 | .16 | .08 | .57 | .23 | .19 | .19 | .21 |
| | $R^2 = .00$, $F(1, 51) = .14$, $p < .71$ | | | | $R^2 = .09$, $F(1, 41) = .36$, $p < .55$ | | | |
| Performance avoidance | -.05 | .14 | -.05 | .71 | .10 | .17 | .09 | .55 |
| | $R^2 = .16$, $F(3, 49) = 3.08$, $p < .05$ | | | | $R^2 = .03$, $F(3, 39) = .39$, $p < .77$ | | | |
| BAS-Fun-seeking | .24 | .39 | .09 | .55 | -.38 | .49 | -.14 | .44 |
| BAS-Drive | .21 | .38 | .08 | .58 | -.02 | .50 | -.01 | .96 |
| BAS-Reward | 1.11 | .49 | .32 | .03* | .60 | .65 | .16 | .36 |
| | $R^2 = .01$, $F(1, 51) = .38$, $p < .54$ | | | | $R^2 = .01$, $F(1, 41) = .60$, $p < .44$ | | | |
| BIS | -.21 | .33 | -.09 | .54 | .32 | .41 | .12 | .44 |
| | $R^2 = .09$, $F(2, 50) = 2.31$, $p < .11$ | | | | $R^2 = .00$, $F(2, 40) = .05$, $p < .96$ | | | |
| Assertiveness | .24 | .25 | .15 | .34 | .05 | .32 | .03 | .88 |
| Enthusiasm | .37 | .28 | .20 | .19 | -.10 | .34 | -.05 | .76 |
| | $R^2 = .04$, $F(2, 50) = .92$, $p < .41$ | | | | $R^2 = .10$, $F(2, 40) = 2.23$, $p < .12$ | | | |
| Industriousness | .44 | .33 | .20 | .20 | .32 | .37 | .14 | .39 |
| Orderliness | -.07 | .31 | -.03 | .82 | .55 | .36 | 1.54 | .13 |
| | $R^2 = .00$, $F(1, 51) = .01$, $p < .92$ | | | | $R^2 = .00$, $F(1, 41) = .15$, $p < .70$ | | | |
| Intellect | .04 | .35 | .02 | .92 | .16 | .40 | .06 | .70 |
| | $R^2 = .07$, $F(2, 50) = 1.81$, $p < .17$ | | | | $R^2 = .01$, $F(2, 40) = .27$, $p < .77$ | | | |
| Withdrawal | -.46 | .27 | -.27 | .10 | .22 | .32 | .12 | .51 |
| Volatility | .59 | .36 | .26 | .11 | -.04 | .43 | -.02 | .93 |

**Table 6.21:** Summary of multiple regression results for coaching outcomes, goal orientation, BIS/BAS and personality.

Note: T2 *n* = 53; T3 n = 43; * *p* < .05; ** *p* < .01; *** *p* < .00; BIS = behavioural inhibition systems; BAS – behavioural activation systems

The preceding regression analysis has demonstrated that a number of significant direct pathways are present between the variables measured. The next stage in the analysis is to focus specifically on the hypothesised mediated pathways. The next section presents a breakdown of the results for hypotheses H6.5a to H6.5g.

Historically, meditation has been tested via a series of regression analyses to test each of the hypothesised pathways in the model (Baron & Kenny, 1986). The main limitation with this approach to assessing mediation is that mediation is said to be present when the relationship between the predictor and the outcome is weaker when the mediator is present compared to when the mediator is not in the model, however this does not answer the question of how much of a reduction in the strength in the relationship constitutes mediation. An alternative approach is to estimate the indirect effect and its significance (Hayes, 2013). The significance of the indirect effect can be calculated using the Sobel test (Sobel, 1982) or in the case of smaller samples (such as in the present study) it is recommended that the significance of the mediation is calculated by computing the confidence intervals for the indirect effect using bootstrap methods (Field, 2013). Therefore, following these recommendations, mediation analysis was conducted by estimating the indirect effect using Hayes (2013) PROCESS tool with significance assessed by interpreting the confidence intervals. Preacher and Hayes (2004) provide a comprehensive discussion of the merits of different effect sizes in mediation analysis and recommend using kappa squared. However, they note that this discussion is in the context of analysis with single mediators and where covariates are not included (Hayes, 2012). The mediation models tested in this thesis involve multiple mediators, therefore, in line with recommendations from Preacher and Hayes (2004), multiple effect sizes are reported for each mediator.

In order to aid understanding of the results, the analysis has been broken down by individual hypotheses and within that, by perceived coaching effectiveness variable.

*Hypothesis 6.5a.* Hypothesis 6.5a predicted the indirect influence of assertiveness on coaching outcomes via BAS fun-seeking, BAS-drive, mastery goal orientation, performance approach goal orientation and perceived coaching effectiveness. For this level of analysis, the potential mediation will be examined by the model for each of the perceived coaching effectiveness factors, firstly career clarity will be examined. Based on the regression analysis, the coefficients for the direct pathways are depicted in Figure 6.22. There were two pathways where all

associations were significant: assertiveness, BAS drive, performance approach and career clarity and assertiveness, BAS drive, mastery and career clarity. Therefore these pathways were tested for indirect effects. The mediation analysis suggests that there is a significant indirect effect of assertiveness on career clarity through BAS drive and performance approach goal orientation ($B$ = .03, [.005, .10]) and a significant indirect effect of assertiveness on career clarity through BAS drive and mastery goal orientation ($B$ = .02, [.001, .07]) (with enthusiasm included as a covariate). The next stage was to establish whether these indirect effect were still present when the coaching outcomes (self and others-ratings of performance, intrinsic and extrinsic job satisfaction and organizational commitment) were included in the models.  For the performance approach model, the analysis suggests that the only significant indirect effect for assertiveness was on self-ratings of performance through BAS drive, performance approach and career clarity ($B$ = -.01, [-.03, -.001]). For the mastery goal orientation model, the analysis suggests that the only significant indirect effect for assertiveness was on self-ratings of performance through BAS drive, mastery and career clarity ($B$ = -.004, [-.02, -.0002]). The indirect effects are summarized in Table 6.22.



**Figure 6.22:** Model coefficients for the direct effects for assertiveness and perceived coaching effectiveness: career clarity
Note: BAS – behavioural activation system; PCE CC – perceived coaching effectiveness career clarity; * $p < .05$; ** $p < .01$; *** $p < .00$; $n = 53$

| IV | M1 | M2 | M3 | DV | B | BCa CI | *abps* | 95% BCa CI | *abcs* | 95% BCa CI | *Pm* | 95% BCa CI | Rm | 95% BCa CI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **EA** | **DRIVE** | **APP** |  | **PCE CC** | **.03** | **.005, .10** | **.05** | **.01, .17** | **.03** | **.01, .11** | **.17** | **-.001, 7.08** | **.55** | **.10, 27.14** |
| **EA** | **DRIVE** | **MAST** |  | **PCE CC** | **.02** | **.001, .07** | **.04** | **.001, .12** | **.03** | **.001, .08** | **.13** | **-.07, 3.20** | **1.77** | **1.43, 259.91** |
| **EA** | **DRIVE** | **APP** | **PCE CC** | **SELF PERF[1]** | **-.01** | **-.03, -.001** | **-.02** | **-.09, -.00** | **-.01** | **-.06, -.001** | **.06** | **.002, 1.18** | **.09** | **-.001, 8.46** |
| EA | DRIVE | APP | PCE CC | OTHERS PERF[1] | .002 | -.001, .02 | .01 | -.002, .05 | .01 | -.001, .04 | -.04 | -3.85, .02 | -.07 | -108.19, -.0001 |
| EA | DRIVE | APP | PCE CC | INT JOB SAT | .002 | -.01, .03 | .002 | -.01, .04 | .002 | -.01, .03 | .13 | .04, 2.86 | -.09 | -6.38, -.02 |
| EA | DRIVE | APP | PCE CC | EXT JOB SAT | .001 | -.008, .02 | .001 | -.01, .03 | .001 | -.01, .02 | .08 | .01, 100.70 | -.04 | -59.87, .003 |
| EA | DRIVE | APP | PCE CC | OC | .01 | -.004, .05 | .01 | -.003, .05 | .003 | -.002, .04 | .03 | -.01, 10.34 | .04 | -.003, 5.14 |
| **EA** | **DRIVE** | **MAST** | **PCE CC** | **SELF PERF[1]** | **-.004** | **-.02, -.0002** | **-.01** | **-.05, -.001** | **-.01** | **-.03, -.001** | **.04** | **-.001, .50** | **.14** | **.01, 26.32** |
| EA | DRIVE | MAST | PCE CC | OTHERS PERF[1] | .002 | -.001, .02 | .01 | -.003, .04 | .004 | -.002, .03 | -.03 | -16.49, .02 | -.05 | -11.36, .004 |
| EA | DRIVE | MAST | PCE CC | INT JOB SAT | .002 | -.004, .03 | .003 | -.01, .03 | .002 | -.004, .03 | .12 | .05, 7.87 | 1.28 | 2.59, 14.00 |
| EA | DRIVE | MAST | PCE CC | EXT JOB SAT | .001 | -.004, .03 | .002 | -.01, .03 | .001 | -.004, .02 | .09 | .03, 56.70 | -.06 | -3.75, -.01 |
| EA | DRIVE | MAST | PCE CC | OC | .01 | -.003, .05 | .004 | -.003, .04 | .003 | -.002, .03 | .02 | -.01, 7.95 | .03 | -.001, 26.69 |

**Table 6.22:** Summary of indirect effects for assertiveness and career clarity

Note: $n$ = 53; EA - assertiveness; DRIVE – behavioural activation systems – drive; APP – performance approach goal orientation; MAST – mastery goal orientation; PCE CC – perceived coaching effectiveness – career clarity; SELF PER – self-ratings of performance; OTHERS PERF – others-ratings of performance; INT JOB SAT – intrinsic job satisfaction; EXT JOB SAT – extrinsic job satisfaction; OC – organizational commitment (all outcomes measured at time two); BCa CI – bias-corrected and accelerated bootstrap confidence interval; $ab_{ps}$ – partially standardized indirect effect; $ab_{cs}$ – completely standardized indirect effect; $P_m$ – ratio of the indirect effect to the total effect; $R_m$ – ratio of the indirect effect to the direct effect. Enthusiasm included as a covariate; [1] low score = high performance therefore a negative association should be reversed. Significant results are listed in bold.

Next, the process was repeated for the indirect influence of assertiveness via team performance. Based on the regression analysis, the coefficients for the direct pathways are depicted in Figure 6.23. There were two pathways where all associations were significant: assertiveness, BAS drive and performance approach and team performance and assertiveness, BAS drive, mastery and team performance. Therefore these pathways were tested for indirect effects. The mediation analysis suggests that there was a significant indirect effect of assertiveness on team performance through BAS drive and performance approach goal orientation ($B$ = .02, [003, .08]) and a significant indirect effect of assertiveness on team performance through BAS drive and mastery goal orientation ($B$ = .02, [001, .07]) (with enthusiasm included as a covariate). The next stage was to establish whether this indirect effect was still present when the coaching outcomes (self and others-ratings of performance, intrinsic and extrinsic job satisfaction and organizational commitment) were included in the model. For both the performance approach and mastery models, the analysis suggests that all indirect effects were non-significant. The indirect effects are summarized in Table 6.23.
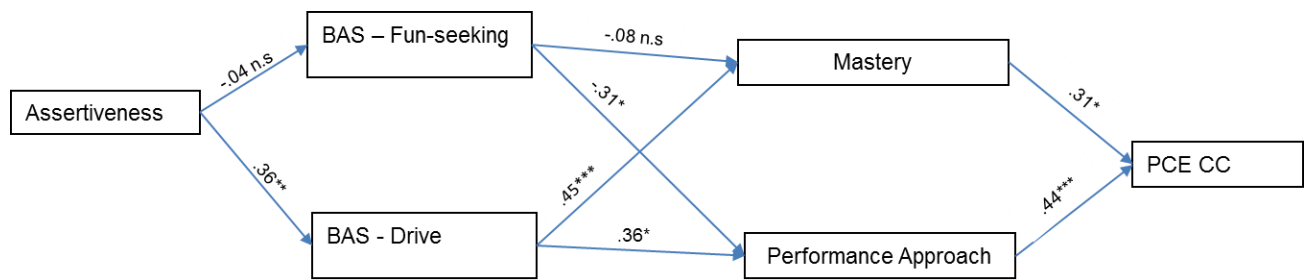


**Figure 6.23:** Model coefficients for the direct effects for assertiveness and perceived coaching effectiveness: team performance
Note: BAS – behavioural activation system; PCE TP – perceived coaching effectiveness team performance; * $p$ < .05; ** $p$ < .01; *** $p$ < .00; $n$ = 53

| IV | M1 | M2 | M3 | DV | B | BCa CI | *abps* | 95% BCa CI | *abcs* | 95% BCa CI | *Pm* | 95% BCa CI | Rm | 95% BCa CI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **EA** | **DRIVE** | **APP** | | **PCE TP** | **.02** | **.002, .08** | **.05** | **.004, .16** | **.03** | **.003, .11** | **.18** | **-.04, 11.28** | **.18** | **-.02, 14.60** |
| **EA** | **DRIVE** | **MAST** | | **PCE TP** | **.02** | **.001, .07** | **.05** | **.001, .15** | **.03** | **.002, .11** | **.18** | **-.06, 9.87** | **.27** | **.01, 18.49** |
| EA | DRIVE | APP | PCE TP | SELF PERF[1] | -.003 | -.02, .000 | -.01 | -.06, .001 | -.01 | -.05, .0002 | .03 | -.005, .59 | .06 | -.01, 33.00 |
| EA | DRIVE | APP | PCE TP | OTHERS PERF[1] | -.001 | -.01, .002 | -.003 | -.04, .01 | -.002 | -.03, .005 | .02 | -.05, 1.66 | .04 | -.01, 29.82 |
| EA | DRIVE | APP | PCE TP | INT JOB SAT | -.003 | -.02, .002 | -.004 | -.04, .003 | -.003 | -.03, .002 | -.19 | -9.33, -.11 | .99 | 4.48, 12.89 |
| EA | DRIVE | APP | PCE TP | EXT JOB SAT | -.01 | -.05, .0003 | -.01 | -.05, .0004 | -.01 | -.04, .0002 | -.43 | -104.70, -.33 | -1.03 | -20.21, -1.81 |
| EA | DRIVE | APP | PCE TP | OC | .003 | -.01, .04 | .002 | -.01, .03 | -.001 | -.03, .01 | .01 | -.05, 1.22 | .02 | -.02, 5.95 |
| EA | DRIVE | MAST | PCE TP | SELF PERF[1] | -.00 | -.01, .0003 | -.09 | -.05, .001 | -.01 | -.04, .001 | .03 | -.01, .37 | .13 | .01, 99.49 |
| EA | DRIVE | MAST | PCE TP | OTHERS PERF[1] | -.001 | -.01, .003 | -.003 | -.04, .01 | -.002 | -.03, .01 | .02 | -.09, 1.35 | .03 | -.04, 3.92 |
| EA | DRIVE | MAST | PCE TP | INT JOB SAT | -.002 | -.02, .003 | -.003 | -.03, .004 | -.002 | -.03, .003 | -.14 | -6.83, -.06 | -.21 | -2.06, -.14 |
| EA | DRIVE | MAST | PCE TP | EXT JOB SAT | -.005 | -.04, .002 | -.006 | -.04, .003 | -.004 | -.03, .002 | -.36 | -69.79, -.26 | 2.55 | 5.31, 6.11 |
| EA | DRIVE | MAST | PCE TP | OC | .003 | -.01, .03 | .003 | -.01, .03 | .002 | -.01, .02 | .01 | -.04, 1.74 | .02 | -.01, 24.51 |

**Table 6.23:** Summary of indirect effects for assertiveness and team performance

Note: *n* = 53;  EA - assertiveness; DRIVE – behavioural activation systems – drive; APP – performance approach goal orientation; MAST – mastery goal orientation; PCE TP - perceived coaching effectiveness – team performance; SELF PERF – self-ratings of performance; OTHERS PERF – others-ratings of performance; INT JOB SAT – intrinsic job satisfaction; EXT JOB SAT – extrinsic job satisfaction; OC – organizational commitment (all outcomes measured at time two); BCa CI – bias-corrected and accelerated bootstrap confidence interval; *abps* – partially standardized indirect effect; *abcs* – completely standardized indirect effect*; Pm* – ratio of the indirect effect to the total effect; Rm – ratio of the indirect effect to the direct effect. Enthusiasm included as a covariate; [1] low score = high performance therefore a negative association should be reversed. Significant effects are listed in bold.

Next, the process was repeated for the indirect influence of assertiveness via work well-being. Based on the regression analysis the coefficients for the direct pathways are depicted in Figure 6.24. The only pathway where all associations were significant was assertiveness, BAS drive, mastery and work well-being, therefore this pathway was tested for indirect effects however the mediation analysis suggests that the indirect effect for this pathway was non-significant, therefore no further mediation analysis was conducted. The indirect effect is summarized in Table 6.24.
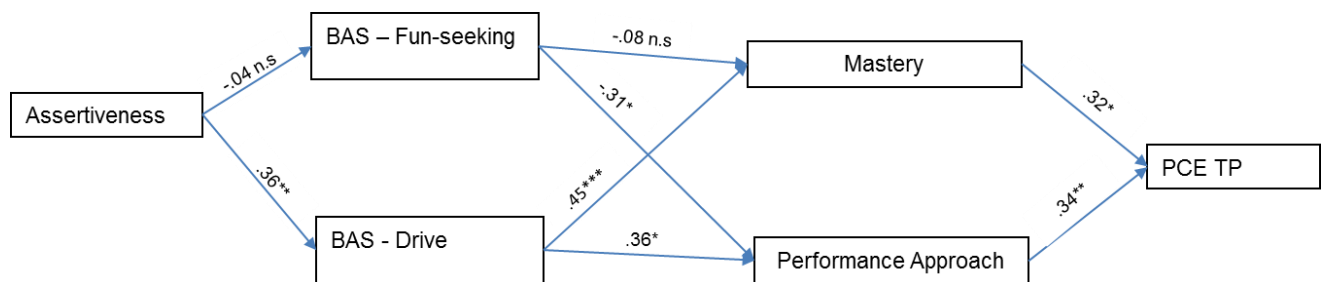


**Figure 6.24:** Model coefficients for the direct effects for assertiveness and perceived coaching effectiveness: work well-being
Note: BAS – behavioural activation system; PCE WW – perceived coaching effectiveness work well-being; * $p < .05$; ** $p < .01$; *** $p < .00$; $n = 53$

| IV | M1 | M2 | M3 | DV | B | BCa CI | $ab_{ps}$ | 95% BCa CI | $ab_{cs}$ | 95% BCa CI | Pm | 95% BCa CI | Rm | 95% BCa CI |
|----|----|----|----|----|----|--------|-----------|------------|-----------|------------|-----|------------|-----|------------|
| EA | DRIVE | MAST | | PCE WW | .03 | -.001, .10 | .04 | -.003, .14 | .05 | -.01, .20 | .25 | -.09, 61.41 | 6.90 | 8.85, 169.60 |

**Table 6.24:** Summary of indirect effects for assertiveness and work well-being

Note: $n$ = 53; EA - assertiveness; DRIVE – behavioural activation systems – drive; MAST – mastery goal orientation; PCE WW - perceived coaching effectiveness – work well; BCa CI – bias-corrected and accelerated bootstrap confidence interval; $ab_{ps}$ – partially standardized indirect effect; $ab_{cs}$ – completely standardized indirect effect; Pm – ratio of the indirect effect to the total effect; Rm – ratio of the indirect effect to the direct effect. Enthusiasm included as a covariate.

Next, the process was repeated for the indirect influence of assertiveness via performance. Based on the regression analysis the coefficients for the direct pathways are depicted in Figure 6.25. The only pathway where all associations were significant was assertiveness, BAS drive and performance approach and performance, therefore this pathway was tested for indirect effects. The mediation analysis suggests that there is a significant indirect effect of assertiveness on perceived coaching effectiveness - performance through BAS drive and performance approach goal orientation ($B$ = .02, [004, .11]) (with enthusiasm included as a covariate). The next stage was to establish whether this indirect effect was still present when the coaching outcomes (self and others-ratings of performance, intrinsic and extrinsic job satisfaction and organizational commitment) were included in the model. The analysis suggests that the indirect effect for assertiveness on others-ratings of performance ($B$ = .003, [.0001, .02]) and extrinsic job satisfaction ($B$ = -.01, [-.06, -.0002]) through BAS drive, performance approach and perceived coaching effectiveness - performance were significant. All other indirect effects were non-significant. The indirect effects are summarized in Table 6.25.
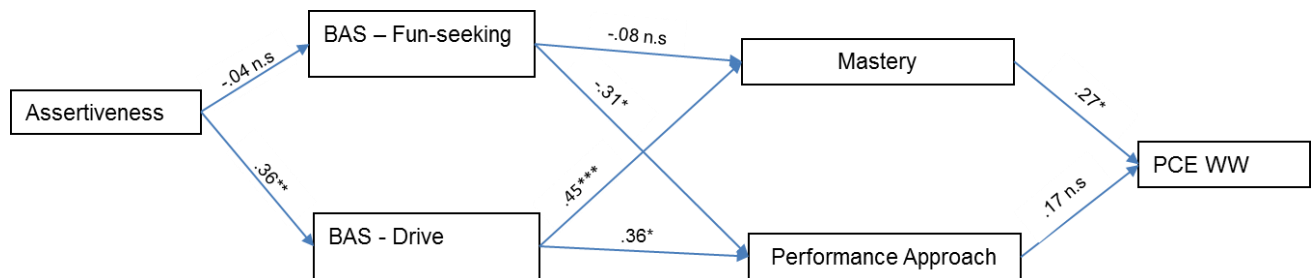


**Figure 6.25:** Model coefficients for the direct effects for assertiveness and perceived coaching effectiveness: performance
Note: BAS – behavioural activation system; PCE PER – perceived coaching effectiveness performance; * $p$ < .05; ** $p$ < .01; *** $p$ < .00; $n$ = 53

| IV | M1 | M2 | M3 | DV | B | BCa CI | abps | 95% BCa CI | abcs | 95% BCa CI | Pm | 95% BCa CI | Rm | 95% BCa CI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **EA** | **DRIVE** | **APP** | | **PCE PER** | **.02** | **.004, .11** | **.04** | **.004, .17** | **.03** | **.003, .12** | **.47** | **.07, 117.38** | **1.77** | **.89, 27.44** |
| EA | DRIVE | APP | PCE PER | SELF PERF[1] | -.002 | -.01, .0002 | -.01 | -.05, .001 | -.004 | -.03, .001 | .02 | -.01, .38 | .03 | -.01, 8.55 |
| **EA** | **DRIVE** | **APP** | **PCE PER** | **OTHERS PERF[1]** | **.003** | **.0001, .02** | **.008** | **.00, .05** | **.01** | **.0001, .04** | **-.05** | **-6.73, .01** | **-.09** | **-62.66, -.01** |
| EA | DRIVE | APP | PCE PER | INT JOB SAT | -.005 | -.04, .001 | -.01 | -.05, .001 | -.005 | -.04, .001 | -.31 | -13.73, -.19 | .29 | .20, 5.43 |
| **EA** | **DRIVE** | **APP** | **PCE PER** | **EXT JOB SAT** | **-.01** | **-.06, -.0002** | **-.01** | **-.06, -.0002** | **-.01** | **-.05, -.0001** | **-.55** | **-207.54, -.45** | **.34** | **.17, 7.91** |
| EA | DRIVE | APP | PCE PER | OC | -.003 | -.06, .01 | -.02 | -.05, .01 | -.002 | -.03, .005 | -.01 | -3.54, .03 | -.02 | -6.38, .02 |

**Table 6.25:** Summary of indirect effects for assertiveness and perceived coaching effectiveness - performance

Note: $n$ = 53; EA - assertiveness; DRIVE – behavioural activation systems – drive; APP – performance approach goal orientation; PCE PER – perceived coaching effectiveness – performance; SELF PERF – self-ratings of performance; OTHERS PERF – others-ratings of performance; INT JOB SAT – intrinsic job satisfaction; EXT JOB SAT – extrinsic job satisfaction; OC – organizational commitment (all outcomes measured at time two); BCa CI – bias-corrected and accelerated bootstrap confidence interval; $ab_{ps}$ – partially standardized indirect effect; $ab_{cs}$ – completely standardized indirect effect; $P_m$ – ratio of the indirect effect to the total effect; $R_m$ – ratio of the indirect effect to the direct effect. Enthusiasm included as a covariate; [1] low score = high performance therefore a negative association should be reversed. Significant indirect effects are listed in bold.

Next, the process was repeated for the indirect influence of assertiveness via planning and organizing. Based on the regression analysis the coefficients for the direct pathways are depicted in Figure 6.26. For the planning and organizing factor of perceived coaching effectiveness, there were no significant consecutive pathways, therefore further mediation analysis was not conducted.
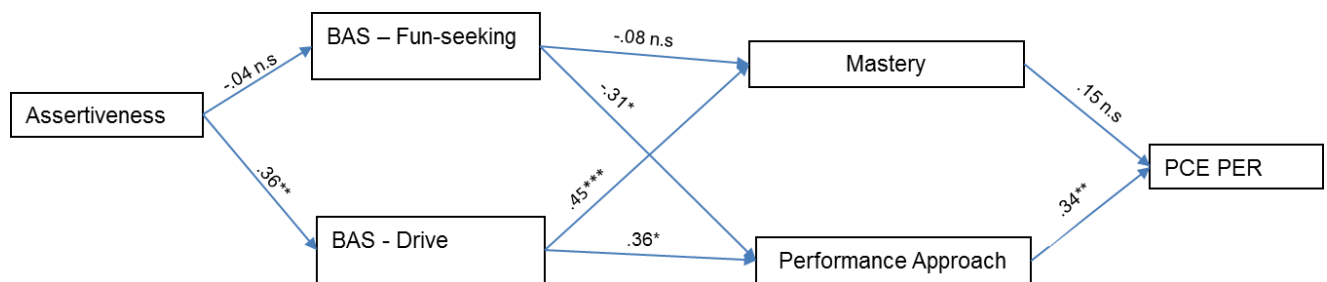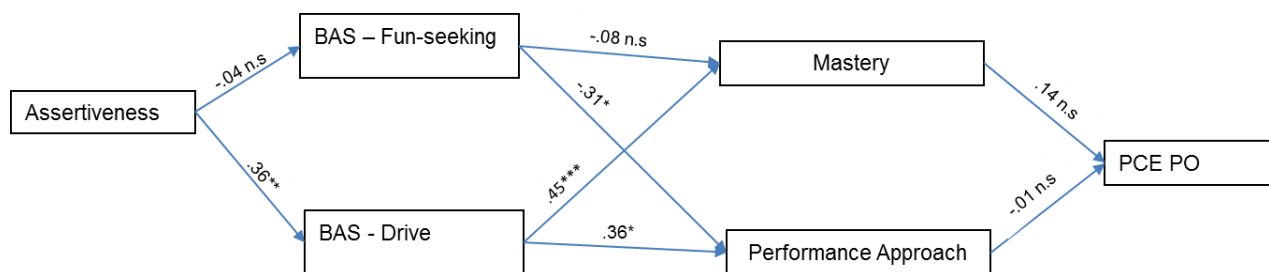


**Figure 6.26:** Model coefficients for the direct effects for assertiveness and perceived coaching effectiveness: planning & organizing
Note: BAS – behavioural activation system; PCE PO – perceived coaching effectiveness planning & organizing; * $p <$ .05; ** $p <$ .01; *** $p <$ .00; $n = 53$

Next, the process was repeated for the indirect influence of assertiveness via personal effectiveness and adaptability. Based on the regression analysis the coefficients for the direct pathways are depicted in Figure 6.27. There were two pathways where all associations were significant: assertiveness, BAS drive, performance approach and personal effectiveness and adaptability and assertiveness, BAS drive, mastery and personal effectiveness and adaptability. Therefore these pathways were tested for indirect effects. For the performance approach pathway, the mediation analysis suggests that there was a significant indirect effect of assertiveness on personal effectiveness and adaptability through BAS drive and performance approach goal orientation ($B =$ .03, [004, .10]) and mastery goal orientation ($B =$ .03, [01, .09]) (with enthusiasm included as a covariate). The next stage was to establish whether this indirect effect was still present when the coaching outcomes (self and others-ratings of performance, intrinsic and extrinsic job satisfaction and organizational commitment) were included in the model.  For the performance approach pathway, the analysis suggests that the only significant indirect effects for assertiveness were on self-ratings of performance ($B =$ -.004, [-.03, -.001]) and others-ratings of performance ($B =$ .003, [.0001, .02]). For the mastery pathway, the analysis suggests that the indirect effects for all outcomes were non-significant. The indirect effects are summarized in Table 6.26.

| IV | M1 | M2 | M3 | DV | B | BCa CI | *abps* | 95% BCa CI | *abcs* | 95% BCa CI | *Pm* | 95% BCa CI | Rm | 95% BCa CI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **EA** | **DRIVE** | **APP** | | **PCE PEA** | **.03** | **.004, .10** | **.05** | **.01, .17** | **.04** | **.00, .12** | **.20** | **.01, 45.20** | **.38** | **.06, 205.27** |
| **EA** | **DRIVE** | **MAST** | | **PCE PEA** | **.03** | **.01, .09** | **.06** | **.01, .16** | **.04** | **.01, .12** | **.25** | **-.11, 11.97** | **2.27** | **1.46, 81.09** |
| **EA** | **DRIVE** | **APP** | **PCE PEA** | **SELF PERF[1]** | **-.004** | **-.03, -.001** | **-.02** | **-.09, -.002** | **-.01** | **-.07, -.001** | **.05** | **.001, .74** | **.08** | **-.004, 6.23** |
| **EA** | **DRIVE** | **APP** | **PCE PEA** | **OTHERS PERF[1]** | **.003** | **.0001, .02** | **.01** | **.0003, .05** | **.01** | **.0003, .04** | **-.06** | **-3.86, .01** | **-.09** | **-4.53, -.01** |
| EA | DRIVE | APP | PCE PEA | INT JOB SAT | -.0004 | -.01, .01 | -.001 | -.02, .01 | -.0004 | -.02, .01 | -.03 | -9.73, .01 | .02 | -.01, 16.37 |
| EA | DRIVE | APP | PCE PEA | EXT JOB SAT | -.001 | -.02, .01 | -.001 | -.02, .01 | -.0004 | -.01, .01 | -.03 | -19.91, .01 | .02 | -.02, 17.24 |
| EA | DRIVE | APP | PCE PEA | OC | .001 | -.01, .04 | .001 | -.01, .03 | .001 | -.01, .02 | .01 | -.12, .65 | .01 | -.09, .71 |
| EA | DRIVE | MAST | PCE PEA | SELF PERF[1] | -.004 | -.02, .00 | -.01 | -.07, -.0001 | -.01 | -.05, -.0002 | .04 | -.003, .63 | .15 | .02, 37.11 |
| EA | DRIVE | MAST | PCE PEA | OTHERS PERF[1] | .004 | -.001, .02 | .01 | -.002, .06 | .01 | -.002, .04 | -.08 | -8.04, .04 | -.12 | -17.57, .002 |
| EA | DRIVE | MAST | PCE PEA | INT JOB SAT | .001 | -.01, .02 | .001 | -.01, .03 | .001 | -.01, .02 | .04 | -.004, 23.87 | .29 | .23, 4.56 |
| EA | DRIVE | MAST | PCE PEA | EXT JOB SAT | .001 | -.01, .03 | .001 | -.01, .03 | .0004 | -.01, .03 | .03 | -.03, 59.99 | -.02 | -5.98, .02 |
| EA | DRIVE | MAST | PCE PEA | OC | .003 | -.02, .04 | .002 | -.01, .03 | .002 | -.01, .02 | .01 | -.11, .79 | .02 | -.06, 4.84 |

**Table 6.26:** Summary of indirect effects for assertiveness – personal effectiveness and adaptability

Note: *n* = 53; EA - assertiveness; DRIVE – behavioural activation systems – drive; APP – performance approach goal orientation; MAST – mastery goal orientation; PCE PEA – perceived coaching effectiveness – personal effectiveness & adaptability; SELF PER – self-ratings of performance; OTHERS PERF – others-ratings of performance; INT JOB SAT – intrinsic job satisfaction; EXT JOB SAT – extrinsic job satisfaction; OC – organizational commitment (all outcomes measured at time two); BCa CI – bias-corrected and accelerated bootstrap confidence interval; *abps* – partially standardized indirect effect; *abcs* – completely standardized indirect effect; *Pm* – ratio of the indirect effect to the total effect; Rm – ratio of the indirect effect to the direct effect. Enthusiasm included as a covariate; [1] low score = high performance therefore a negative association should be reversed. Significant results are listed in bold.

**Figure 6.27:** Model coefficients for the direct effects for assertiveness and perceived coaching effectiveness: personal effectiveness & adaptability
Note: BAS – behavioural activation system; PCE PEA – perceived coaching effectiveness personal effectiveness and adaptability; * $p < .05$; ** $p < .01$; *** $p < .00$; $n = 53$

*Hypothesis 6.5a: results summary.* This results of this section suggest that there is a significant indirect influence of assertiveness on three coaching outcomes: self and others-ratings of performance and extrinsic job satisfaction through the mediating influence of BAS drive, performance approach goal orientation, mastery goal orientation and the perceived coaching effectiveness factors career clarity, personal effectiveness and adaptability and performance. Therefore hypothesis 6.5a was partially supported. Figure 6.28 depicts the direct coefficient pathways for these variables.
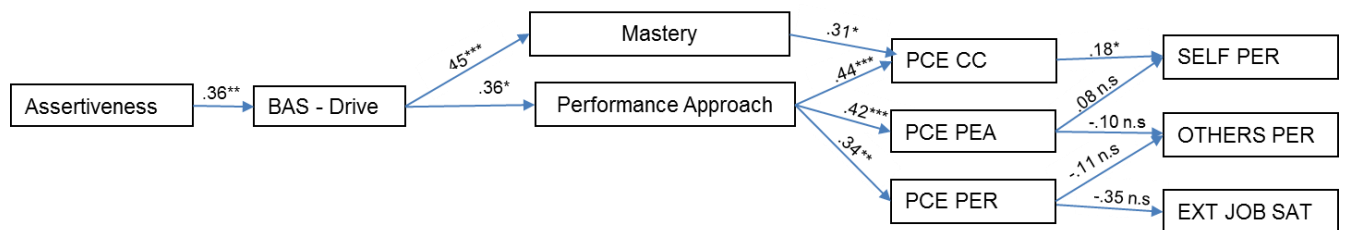


**Figure 6.28:** Model coefficients for the direct effects for assertiveness and coaching outcomes
Note: BAS – behavioural activation system; PCE CC – perceived coaching effectiveness career clarity; PCE PEA – perceived coaching effectiveness personal effectiveness and adaptability; PCE PER – perceived coaching effectiveness performance; SELF PER – self-ratings of performance; OTHERS PER – others-ratings of performance; EXT JOB SAT – extrinsic job satisfaction; * $p < .05$; ** $p < .01$; *** $p < .00$, $n = 53$

*Hypothesis 6.5b.* Hypothesis 6.5b predicted the indirect influence of enthusiasm on coaching outcomes via BAS fun-seeking, BAS drive, BAS reward, mastery goal orientation, performance approach goal orientation and perceived coaching effectiveness. As with H6.5a, each perceived coaching effectiveness factor will be examined, with career clarity addressed first. Based on the regression analysis the coefficients for the direct pathways are depicted in Figure 6.29. There were three pathways where all associations were significant: enthusiasm, BAS fun-seeking, performance approach and career clarity; enthusiasm, BAS drive, performance approach and career clarity and enthusiasm, BAS drive, mastery and career clarity. Therefore these pathways

were tested for indirect effects. The mediation analysis suggests that the only significant indirect effect was for the performance approach-drive pathway; therefore enthusiasm indirectly influenced career clarity through BAS drive and performance approach goal orientation ($B = .03$, [.0003, .10]) (with assertiveness included as a covariate). The next stage was to establish whether this indirect effect was still present when the coaching outcomes (self and others-ratings of performance, intrinsic and extrinsic job satisfaction and organizational commitment) were included in the model. The analysis suggests that the only significant indirect effect for enthusiasm was on self-ratings of performance ($B = -.005$, [-.03, -.0004]). The indirect effects for all other outcomes were non-significant. The indirect effects are summarized in Table 6.27.



**Figure 6.29:** Model coefficients for the direct effects for enthusiasm and perceived coaching effectiveness: career clarity
Note: BAS – behavioural activation system; PCE CC – perceived coaching effectiveness career clarity; * $p < .05$; ** $p < .01$; *** $p < .00$; $n = 53$

| IV | M1 | M2 | M3 | DV | B | BCa CI | *abps* | 95% BCa CI | *abcs* | 95% BCa CI | *Pm* | 95% BCa CI | Rm | 95% BCa CI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EE | FUN | APP | | PCE CC | -.05 | -.16, .02 | -.09 | -.27, .03 | -.06 | -.17, .02 | .30 | -.45, 43.62 | .20 | -.07, 2.95 |
| EE | DRIVE | MAST | | PCE CC | .02 | -.001, .07 | .03 | -.002, .13 | .02 | -.001, .08 | -.12 | -46.28, .24 | -.07 | -.96, .01 |
| **EE** | **DRIVE** | **APP** | | **PCE CC** | **.03** | **.0003, .10** | **.04** | **-.0003, .16** | **.03** | **.0001, .11** | **-.15** | **-100.04, .08** | **-.11** | **-3.05, .005** |
| **EE** | **DRIVE** | **APP** | **PCE CC** | **SELF PER**[1] | **-.005** | **-.03, -.0004** | **-.02** | **-.09, -.001** | **-.01** | **-.05, -.001** | **.21** | **.06, 37.50** | **.09** | **-.003, 14.28** |
| EE | DRIVE | APP | PCE CC | OTHERS PER[1] | .002 | -.001, .01 | .01 | -.002, .05 | .004 | -.001, .03 | .07 | .01, 16.12 | .03 | -.01, 14.51 |
| EE | DRIVE | APP | PCE CC | INT JOB SAT | .002 | -.005, .03 | .003 | -.01, .04 | .002 | -.005, .03 | .006 | -.02, .35 | .01 | -.03, .95 |
| EE | DRIVE | APP | PCE CC | EXT JOB SAT | .001 | -.008, .03 | .001 | -.01, .03 | .001 | -.01, .02 | .003 | -.02, .08 | .003 | -.03, .12 |
| EE | DRIVE | APP | PCE CC | OC | .01 | -.004, .07 | .005 | -.004, .05 | .003 | -.002, .03 | .02 | -.01, .95 | .02 | -.01, .66 |

**Table 6.27:** Summary of indirect effects for enthusiasm and career clarity

Note: *n* = 53;  EE - enthusiasm; FUN - behavioural activation systems – fun-seeking; DRIVE – behavioural activation systems – drive; APP – performance approach goal orientation; MAST – mastery goal orientation; PCE CC – perceived coaching effectiveness – career clarity; SELF PER – self-ratings of performance; OTHERS PERF – others-ratings of performance; INT JOB SAT – intrinsic job satisfaction; EXT JOB SAT – extrinsic job satisfaction; OC – organizational commitment (all outcomes measured at time two); BCa CI – bias-corrected and accelerated bootstrap confidence interval; *abps* – partially standardized indirect effect; *abcs* – completely standardized indirect effect*; Pm* – ratio of the indirect effect to the total effect; Rm – ratio of the indirect effect to the direct effect. Assertiveness included as a covariate; [1] low score = high performance therefore a negative association should be reversed. Significant results are listed in bold.

Next, the process was repeated for the indirect influence of enthusiasm via team performance. Based on the regression analysis the coefficients for the direct pathways are depicted in Figure 6.30. There were three pathways where all associations were significant: enthusiasm, BAS fun-seeking, performance approach and team performance; enthusiasm, BAS drive, performance approach and team performance and enthusiasm, BAS drive, mastery and team performance. Therefore these pathways were tested for indirect effects. The mediation analysis suggests that for all pathways, the indirect effects were non-significant, therefore no further mediation analysis was conducted for these pathways. The indirect effects are summarized in Table 6.28.
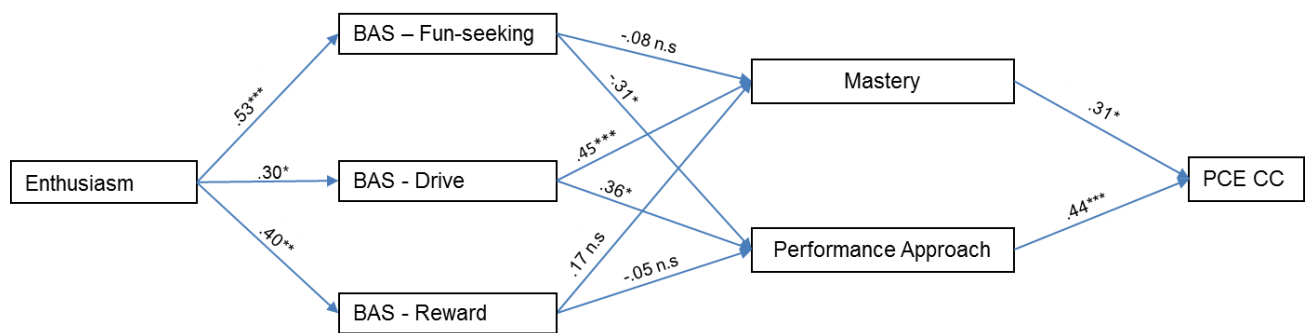
**Figure 6.30:** Model coefficients for the direct effects for enthusiasm and perceived coaching effectiveness: team performance

Note: BAS – behavioural activation system; PCE TP – perceived coaching effectiveness team performance; * $p < .05$; ** $p < .01$; *** $p < .00$; $n = 53$

| IV | M1 | M2 | M3 | DV | B | BCa CI | *abps* | 95% BCa CI | *abcs* | 95% BCa CI | *Pm* | 95% BCa CI | Rm | 95% BCa CI |
|----|----|----|----|----|----|--------|--------|------------|--------|------------|------|------------|------|------------|
| EE | FUN | APP | | PCE TP | -.03 | -.11, .01 | -.07 | -.23, .02 | -.05 | -.15, .01 | -.41 | -18766.83, .05 | -3.02 | -159.70, -1.82 |
| EE | DRIVE | APP | | PCE TP | .02 | -.0002, .08 | .04 | -.002, .17 | .03 | -.001, .11 | .26 | .004, 7537.10 | .19 | -.13, 15.41 |
| EE | DRIVE | MAST | | PCE TP | .02 | -.001, .08 | .04 | -.004, .16 | .03 | -.002, .10 | .26 | -.05, 91483.38 | .29 | .01, 21.81 |

**Table 6.28:** Summary of indirect effects for enthusiasm and team performance

Note: *n* = 53; EE - enthusiasm; FUN - behavioural activation systems – fun-seeking; DRIVE – behavioural activation systems – drive; APP – performance approach goal orientation; MAST – mastery; PCE TP – perceived coaching effectiveness – team performance; BCa CI – bias-corrected and accelerated bootstrap confidence interval; *abps* – partially standardized indirect effect; *abcs* – completely standardized indirect effect; *Pm* – ratio of the indirect effect to the total effect; Rm – ratio of the indirect effect to the direct effect. Assertiveness included as a covariate

Next, the process was repeated for the indirect influence of enthusiasm via work well-being. Based on the regression analysis the coefficients for the direct pathways are depicted in Figure 6.31. For the work well-being factor of perceived coaching effectiveness, there was one pathway were all associations were significant: enthusiasm, BAS drive, mastery and work well-being. Therefore this pathway was tested for indirect effects. The mediation analysis suggests that for this pathway the indirect effects are non-significant, therefore further mediation analysis was not conducted. The indirect effect is summarized in Table 6.29.
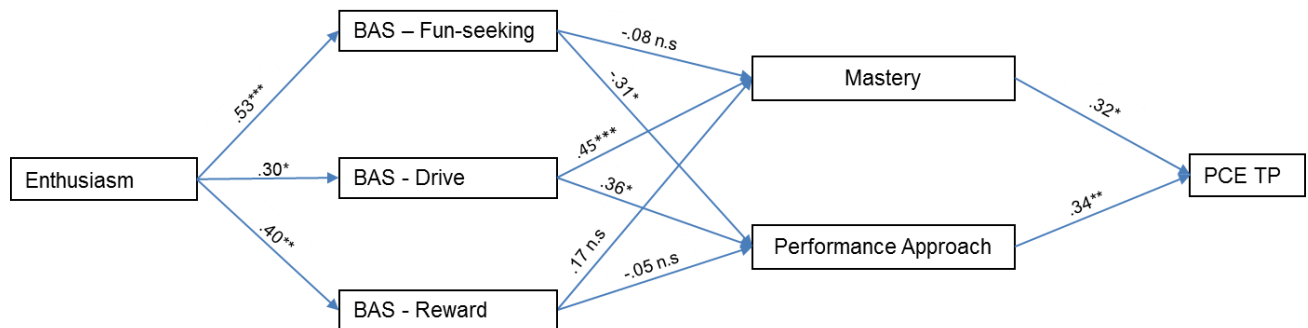


**Figure 6.31:** Model coefficients for the direct effects for enthusiasm and perceived coaching effectiveness: work well-being
Note: BAS – behavioural activation system; PCE WW – perceived coaching effectiveness work well-being; * $p < .05$; ** $p < .01$; *** $p < .00$; $n = 53$

| IV | M1 | M2 | M3 | DV | B | BCa CI | *abps* | 95% BCa CI | *abcs* | 95% BCa CI | *Pm* | 95% BCa CI | Rm | 95% BCa CI |
|----|----|----|----|----|---|--------|--------|------------|--------|------------|------|------------|----|----|
| EE | DRIVE | MAST | | PCE WW | .03 | -.002, .13 | .04 | -.005, 16 | .02 | -.002, .10 | -.40 | -123.36, -.03 | -.21 | -79.78, 10 |

**Table 6.29:** Summary of indirect effects for enthusiasm and work well-being

Note: *n* = 53;  EE - enthusiasm; DRIVE – behavioural activation systems – drive; MAST – mastery approach goal orientation; PCE WW – perceived coaching effectiveness – work well-being; BCa CI – bias-corrected and accelerated bootstrap confidence interval; *abps* – partially standardized indirect effect; *abcs* – completely standardized indirect effect*; Pm* – ratio of the indirect effect to the total effect; Rm – ratio of the indirect effect to the direct effect. Assertiveness included as a covariate.

Next, the process was repeated for the indirect influence of enthusiasm via performance. Based on the regression analysis the coefficients for the direct pathways are depicted in Figure 6.32. There were two pathways where all associations were significant: enthusiasm, BAS fun-seeking, performance approach and perceived coaching effectiveness - performance and enthusiasm, BAS drive, performance approach and perceived coaching effectiveness – performance, however the mediation analysis suggests that the indirect effects for both pathways were non-significant, therefore no further mediation analysis was conducted. The indirect effects are summarized in Table 6.30.
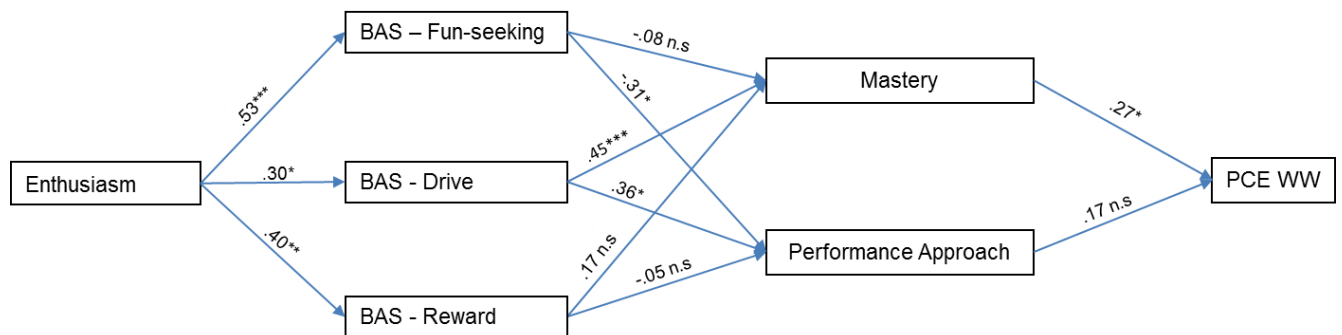


**Figure 6.32:** Model coefficients for the direct effects for enthusiasm and perceived coaching effectiveness: performance

Note: BAS – behavioural activation system; PCE PER – perceived coaching effectiveness performance; * $p < .05$; ** $p < .01$; *** $p < .00$; $n = 53$

| IV | M1 | M2 | M3 | DV | B | BCa CI | abps | 95% BCa CI | abcs | 95% BCa CI | Pm | 95% BCa CI | Rm | 95% BCa CI |
|----|----|----|----|----|---|--------|------|------------|------|------------|----|-----------|----|-----------|
| EE | FUN | APP | | PCE PER | -.04 | -.13, .001 | -.07 | -.24, .01 | -.04 | -.16, .01 | .45 | -.02, 175.35 | .28 | -.05, 18.92 |
| EE | DRIVE | APP | | PCE PER | .02 | -.001, .09 | .04 | -.002, .16 | .03 | -.001, .10 | -.27 | -35.93, .06 | -.28 | -84.06, .03 |

**Table 6.30:** Summary of indirect effects for enthusiasm and perceived coaching effectiveness - performance

Note: $n$ = 53;  EE - enthusiasm; FUN - behavioural activation systems – fun-seeking; DRIVE – behavioural activation systems – drive; APP – performance approach goal orientation; PCE PER – perceived coaching effectiveness – performance; BCa CI – bias-corrected and accelerated bootstrap confidence interval; $ab_{ps}$ – partially standardized indirect effect; $ab_{cs}$ – completely standardized indirect effect; $P_m$ – ratio of the indirect effect to the total effect; $R_m$ – ratio of the indirect effect to the direct effect. Assertiveness included as a covariate.

Next, the process was repeated for the indirect influence of enthusiasm via planning and organizing. Based on the regression analysis the coefficients for the direct pathways are depicted in Figure 6.33. For the planning and organizing factor of perceived coaching effectiveness, there were no significant consecutive pathways, therefore further mediation analysis was not conducted.
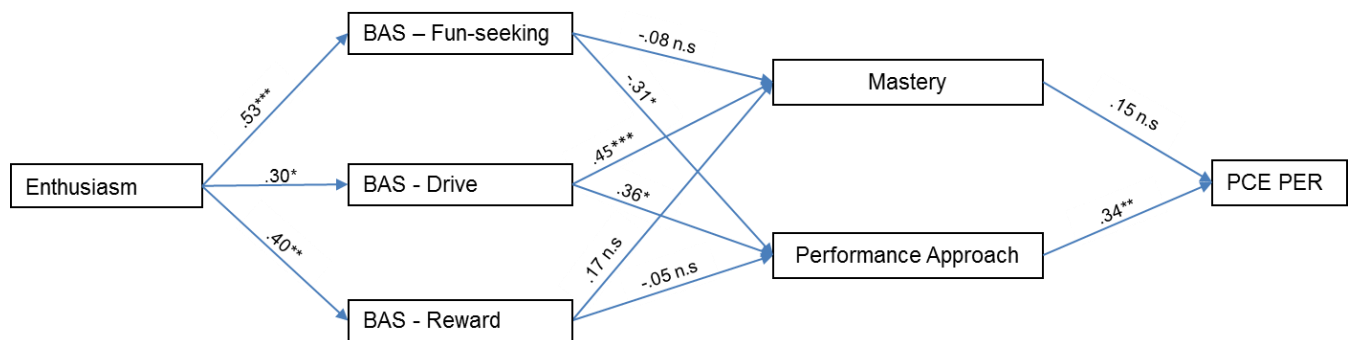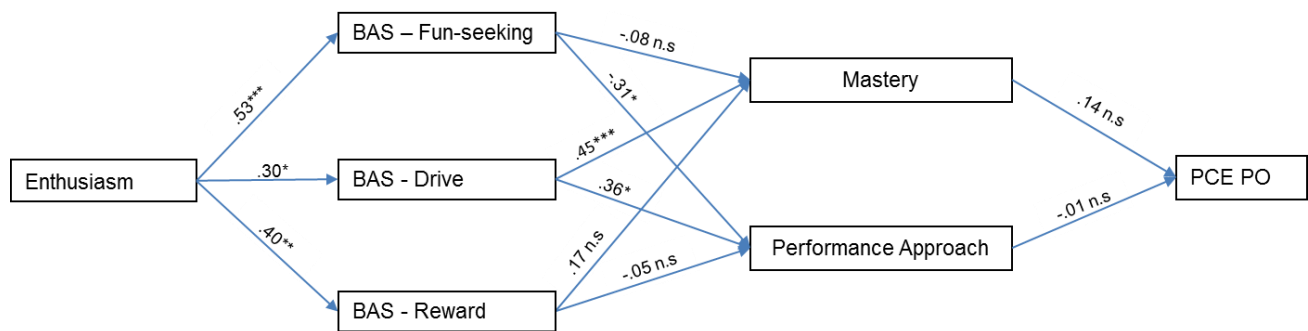


**Figure 6.33:** Model coefficients for the direct effects for enthusiasm and perceived coaching effectiveness: planning & organizing
Note: BAS – behavioural activation system; PCE PO – perceived coaching effectiveness planning & organizing; * $p <$ .05; ** $p < .01$; *** $p < .00$; $n = 53$

Next, the process was repeated for the indirect influence of enthusiasm via personal effectiveness and adaptability. Based on the regression analysis the coefficients for the direct pathways are depicted in Figure 6.34. There were three pathways where all associations were significant: enthusiasm, BAS fun-seeking, performance approach and personal effectiveness and adaptability; enthusiasm, BAS drive, performance approach and personal effectiveness and adaptability and enthusiasm, BAS drive, mastery and personal effectiveness and adaptability. Therefore these pathways were tested for indirect effects. The mediation analysis suggests that the only significant indirect effect for enthusiasm on personal effectiveness and adaptability was through BAS drive and performance approach goal orientation ($B = .03$, [001, .10]) and mastery goal orientation ($B = .03$, [001, .09]). The next stage was to establish whether these indirect effects were still present when the coaching outcomes (self and others-ratings of performance, intrinsic and extrinsic job satisfaction and organizational commitment) were included in the model. For drive-performance approach and drive-mastery, the analysis suggests that the indirect effects for enthusiasm on all outcomes were all non-significant. The indirect effects are summarized in Table 6.31.

| IV | M1 | M2 | M3 | DV | B | BCa CI | *abps* | 95% BCa CI | *abcs* | 95% BCa CI | *Pm* | 95% BCa CI | Rm | 95% BCa CI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EE | FUN | APP |  | PCE PEA | -.04 | -.16, .01 | -.08 | -.12, .02 | -.05 | -.19, .01 | .23 | -.41, 10.28 | .18 | -.06, 4.44 |
| **EE** | **DRIVE** | **APP** |  | **PCE PEA** | **.03** | **.001, .10** | **.05** | **.001, .18** | **.03** | **.001, .11** | **-.13** | **-7.72, .02** | **.12** | **-4.11, .01** |
| **EE** | **DRIVE** | **MAST** |  | **PCE PEA** | **.03** | **.001, .09** | **.06** | **.001, .16** | **.04** | **.001, .10** | **-.16** | **-5.60, .42** | **-.12** | **-2.04, .01** |
| EE | DRIVE | APP | PCE PEA | SELF PERF[1] | -.002 | -.02, .0003 | -.01 | -.07, .001 | -.003 | -.04, .001 | .02 | -.01, 2.35 | .01 | -.004, .87 |
| EE | DRIVE | APP | PCE PEA | OTHERS PERF[1] | .002 | .00, .02 | .01 | -.001, .06 | .004 | -.0002, .05 | .02 | -.002, 8.20 | .01 | -.002, .80 |
| EE | DRIVE | APP | PCE PEA | INT JOB SAT | -.004 | -.05, .0002 | -.004 | -.06, .0004 | -.003 | -.03, .0002 | -.02 | -4.16, .002 | -.04 | -15.29, -.004 |
| EE | DRIVE | APP | PCE PEA | EXT JOB SAT | -.01 | -.06, .001 | -.005 | -.07, .001 | -.003 | -.03, .0004 | -.02 | -3.60, .001 | -.10 | -8.25, -.03 |
| EE | DRIVE | APP | PCE PEA | OC | .004 | -.003, .10 | .003 | -.002, .07 | .002 | -.001, .05 | -.04 | -4.90, -.001 | .24 | .14, 54.84 |
| EE | DRIVE | MAST | PCE PEA | SELF PERF[1] | -.004 | -.02, .00 | -.01 | -.07, -.0002 | -.01 | -.04, -.0001 | .16 | .03, 29.45 | .15 | .04, 25.55 |
| EE | DRIVE | MAST | PCE PEA | OTHERS PERF[1] | .004 | -.0004, .02 | .01 | -.002, .07 | .01 | -.001, .04 | .12 | .01, 57.19 | .05 | -.03, 2.31 |
| EE | DRIVE | MAST | PCE PEA | INT JOB SAT | .001 | -.01, .02 | .001 | -.01, .03 | .001 | -.01, .02 | .002 | -.04, .15 | .002 | -.05, .19 |
| EE | DRIVE | MAST | PCE PEA | EXT JOB SAT | .001 | -.01, .03 | .001 | -.01, .03 | .0003 | -.01, .02 | .001 | -.02, .10 | .001 | -.05, .11 |
| EE | DRIVE | MAST | PCE PEA | OC | .003 | -.01, .05 | .002 | -.01, .04 | .001 | -.01, .03 | .01 | -.05, .40 | .01 | -.06, .53 |

**Table 6.31:** Summary of indirect effects for enthusiasm and personal effectiveness & adaptability

Note: *n* = 53; EE - enthusiasm; FUN - behavioural activation systems – fun-seeking; DRIVE – behavioural activation systems – drive; APP – performance approach goal orientation; MAST – mastery goal orientation; PCE PEA – perceived coaching effectiveness – personal effectiveness & adaptability; SELF PERF – self-ratings of performance; OTHERS PERF – others-ratings of performance; INT JOB SAT – intrinsic job satisfaction; EXT JOB SAT – extrinsic job satisfaction; OC – organizational commitment (all outcomes measured at time two); BCa CI – bias-corrected and accelerated bootstrap confidence interval; *abps* – partially standardized indirect effect; *abcs* – completely standardized indirect effect*; Pm* – ratio of the indirect effect to the total effect; Rm – ratio of the indirect effect to the direct effect. Assertiveness included as a covariate; [1] low score = high performance therefore a negative association should be reversed. Significant results are listed in bold.

**Figure 6.34:** Model coefficients for the direct effects for enthusiasm and perceived coaching effectiveness: personal effectiveness & adaptability
Note: BAS – behavioural activation system; PCE PEA – perceived coaching effectiveness personal effectiveness and adaptability; * $p < .05$; ** $p < .01$; *** $p < .00$; $n = 53$

*Hypothesis 6.5b: results summary.* The results of this section suggest that there is a significant indirect influence of enthusiasm on self -ratings of performance through the mediating influence of BAS drive, performance approach goal orientation and perceived coaching effectiveness -career clarity. Therefore hypothesis 6.5b was partially supported. Figure 6.35 depicts the direct coefficient pathways for these variables.
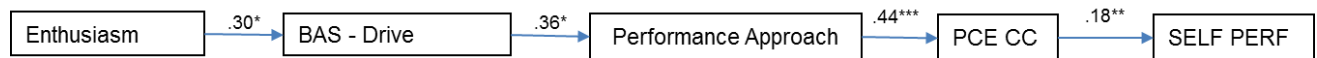


**Figure 6.35:** Model coefficients for the direct effects for enthusiasm and coaching outcomes
Note: BAS – behavioural activation system; PCE CC – perceived coaching effectiveness career clarity; SELF PER – self-ratings of performance; OTHERS PER – others-ratings of performance; EXT JOB SAT – extrinsic job satisfaction
* $p < .05$; ** $p < .01$; *** $p < .00$; $n = 53$

*Hypotheses 6.5c and 6.5d.* Hypotheses 6.5c and 6.5d predicted the indirect influence of industriousness and orderliness on coaching outcomes via mastery goal orientation and perceived coaching effectiveness. The coefficients for the direct pathways for all of the perceived coaching effectiveness factors are depicted in Figure 6.36. The consecutive pathway from orderliness to the perceived coaching effectiveness factors was non-significant, therefore no further mediation analysis was conducted for orderliness. However, the consecutive pathways for industriousness, mastery, career clarity; team performance; work well-being and personal effectiveness and adaptability were all significant, therefore these pathways were tested for indirect effects. The mediation analysis suggests that the indirect effects for all of these pathways was significant (career clarity: $B = .12$, [.01, .31]; team performance: $B = .08$, [.01, .25]; work well-being: $B = .11$, [.01, .33]; personal effectiveness and adaptability: $B = .13$, [.01, .35]). The next stage was to establish whether these indirect effects were still present when

the coaching outcomes (self and others-ratings of performance, intrinsic and extrinsic job satisfaction and organizational commitment) were included in the model.  For the career clarity pathway, the analysis suggests that the only significant indirect effect for industriousness was on self-ratings of performance ($B$ = .02, [-.07, -.001]) through mastery goal orientation and career clarity. For the work well-being pathway, the analysis suggests that the only significant indirect effects for industriousness were on self-ratings of performance ($B$ = -.01, [-.06, -.001]); intrinsic job satisfaction ($B$ = .05, [.01, .19]); extrinsic job satisfaction ($B$ = .08, [.02, .24]) and organizational commitment ($B$ = .11, [.02, .36]) through mastery goal orientation. All other indirect effects were non-significant. The indirect effects are summarized in Table 6.32.
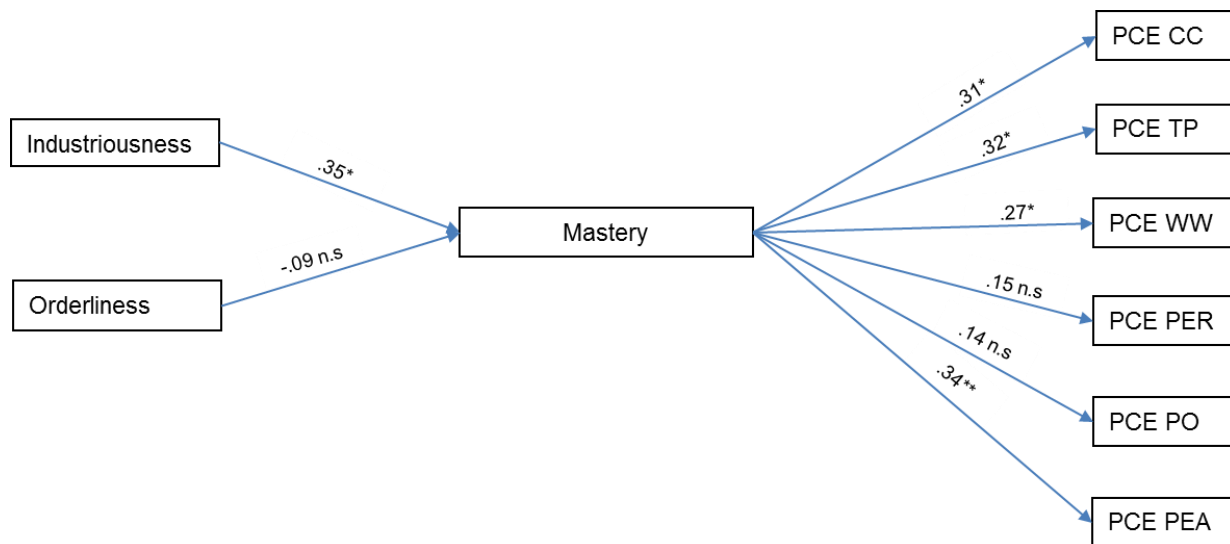


**Figure 6.36:** Model coefficients for the direct effects for industriousness, orderliness and perceived coaching effectiveness

Note: PCE PCC – perceived coaching effectiveness career clarity; PCE TP – perceived coaching effectiveness team performance; PCE WW – perceived coaching effectiveness work well-being; PCE PER – perceived coaching effectiveness performance; PCE PO – perceived coaching effectiveness planning & organizing; PCE PEA – perceived coaching effectiveness personal effectiveness & adaptability.; * $p < .05$; ** $p < .01$; *** $p < .00$; $n = 53$

| IV | M1 | M2 | DV | B | BCa CI | *abps* | 95% BCa CI | *abcs* | 95% BCa CI | *Pm* | 95% BCa CI | Rm | 95% BCa CI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CI** | **MAST** | | **PCE CC** | **.12** | **.01, .31** | **.19** | **.01, .48** | **.10** | **.01, .26** | **2.68** | **.87, 326.82** | **-1.60** | **-188.42, -.30** |
| **CI** | **MAST** | | **PCE TP** | **.08** | **.01, .25** | **.18** | **.01, .49** | **.09** | **.01, .27** | **.60** | **-.54, 65.63** | **1.51** | **.39, 97.42** |
| **CI** | **MAST** | | **PCE WW** | **.11** | **.01, .33** | **.15** | **.01, .47** | **.08** | **.01, .26** | **.80** | **-.06, 205.44** | **3.98** | **1.80, 146.90** |
| **CI** | **MAST** | | **PCE PEA** | **.13** | **.01, .35** | **.24** | **.003, .59** | **.13** | **.01, .32** | **-1.72** | **-6236.79, -.23** | **-.63** | **-11.85, .61** |
| **CI** | **MAST** | **PCE CC** | **SELF PERF[1]** | **-.02** | **-.07, -.001** | **-.06** | **-.21, -.003** | **-.03** | **-.11, -.002** | **.19** | **-.27, 3.45** | **1.48** | **.66, 117.59** |
| CI | MAST | PCE CC | OTHERS PERF[1] | .003 | -.01, .03 | .01 | -.03, .11 | .01 | -.02, .05 | -.02 | -.55, .08 | -.02 | -.50, .09 |
| CI | MAST | PCE CC | INT JOB SAT | .01 | -.03, .09 | .01 | -.05, .10 | .005 | -.02, .06 | .02 | -.16, 1.14 | .02 | -.16, .58 |
| CI | MAST | PCE CC | EXT JOB SAT | .002 | -.04, .07 | .002 | -.05, .08 | .001 | -.03, .04 | .004 | -.22, .63 | .004 | -.23, .61 |
| CI | MAST | PCE CC | OC | .02 | -.02, .16 | .02 | -.02, .12 | .01 | -.01, .07 | .05 | -.07, 2.28 | .06 | -.06, 3.97 |
| CI | MAST | PCE TP | SELF PERF[1] | -.01 | -.05, .002 | -.03 | -.15, .01 | -.02 | -.08, .004 | .11 | -.14, 3.65 | -1.74 | -37.65, -.95 |
| CI | MAST | PCE TP | OTHERS PERF[1] | -.001 | -.03, .01 | -.002 | -.10, .05 | -.001 | -.05, .02 | .003 | -.16, .27 | .003 | -.15, .35 |
| CI | MAST | PCE TP | INT JOB SAT | -.01 | -.07, .02 | -.01 | -.09, .03 | -.004 | -.05, .01 | -.02 | -1.68, .07 | -.02 | -1.17, .07 |
| CI | MAST | PCE TP | EXT JOB SAT | -.02 | -.14, .01 | -.02 | -.14, .02 | -.01 | -.07, .01 | -.05 | -.95, .05 | -.05 | -4.08, .05 |
| CI | MAST | PCE TP | OC | .02 | -.04, .14 | .01 | -.03, .10 | .01 | -.02, .05 | .04 | -.15, 1.71 | .05 | -.15, 3.70 |
| **CI** | **MAST** | **PCE WW** | **SELF PERF[1]** | **-.01** | **-.06, -.001** | **-.04** | **-.19, -.002** | **-.02** | **-.11, -.002** | **.14** | **-.11, 6.81** | **-5.34** | **-43.67, -6.57** |
| CI | MAST | PCE WW | OTHERS PERF[1] | .005 | -.005, .05 | .01 | -.02, .13 | .01 | -.01, .07 | -.03 | -.75, .06 | -.03 | -.55, .05 |
| **CI** | **MAST** | **PCE WW** | **INT JOB SAT** | **.05** | **.01, .19** | **.07** | **.01, .24** | **.04** | **.005, .13** | **.18** | **-.02, 5.05** | **.17** | **.004, 1.69** |
| **CI** | **MAST** | **PCE WW** | **EXT JOB SAT** | **.08** | **.02, .24** | **.08** | **.02, .27** | **.04** | **.01, .15** | **.21** | **.01, 7.44** | **.23** | **-.02, 3.80** |
| **CI** | **MAST** | **PCE WW** | **OC** | **.11** | **.02, .36** | **.08** | **.01, .28** | **.04** | **.01, .14** | **.24** | **-.04, 9.18** | **.32** | **-.03, 15.80** |

| IV | M1 | M2 | DV | B | BCa CI | *abps* | 95% BCa CI | *abcs* | 95% BCa CI | *Pm* | 95% BCa CI | Rm | 95% BCa CI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CI | MAST | PCE PEA | SELF PERF[1] | -.01 | -.07, .0001 | -.05 | -.22, .001 | -.03 | -.12, .0003 | .17 | -.20, 3.75 | .61 | .13, 8222.02 |
| CI | MAST | PCE PEA | OTHERS PERF[1] | .01 | -.01, .05 | .03 | -.03, .16 | .01 | -.01, .08 | -.05 | -1.09, .07 | -.05 | -1.93, .07 |
| CI | MAST | PCE PEA | INT JOB SAT | -.002 | -.07, .05 | -.002 | -.11, .07 | -.001 | -.05, .03 | -.01 | -.77, .18 | -.01 | -1.31, .17 |
| CI | MAST | PCE PEA | EXT JOB SAT | -.01 | -.11, .05 | -.01 | -.12, .06 | -.004 | -.06, .03 | -.02 | -1.23, .22 | -.02 | -2.45, .17 |
| CI | MAST | PCE PEA | OC | .004 | -.10, .11 | .003 | -.08, .09 | .002 | -.04, .05 | .01 | -.41, .76 | .01 | -.79, .65 |

**Table 6.32:** Summary of indirect effects for industriousness

Note: *n* = 53;  CI – industriousness; MAST – mastery goal orientation; PCE CC – perceived coaching effectiveness – career clarity; PCE TP – perceived coaching effectiveness – team performance; PCE WW – perceived coaching effectiveness – work well-being; PCE PEA – perceived coaching effectiveness – personal effectiveness & adaptability; SELF PERF – self-ratings of performance; OTHERS PERF – others-ratings of performance; INT JOB SAT – intrinsic job satisfaction; EXT JOB SAT – extrinsic job satisfaction; OC – organizational commitment (all outcomes measured at time two); BCa CI – bias-corrected and accelerated bootstrap confidence interval; *abps* – partially standardized indirect effect; *abcs* – completely standardized indirect effect*; Pm* – ratio of the indirect effect to the total effect; Rm – ratio of the indirect effect to the direct effect. Orderliness included as a covariate; [1] low score = high performance therefore a negative association should be reversed. Significant results are listed in bold.

***Hypothesis 6.5c and d: results summary.*** This results of this section suggest that there is a significant indirect influence of industriousness on self-ratings of performance, intrinsic and extrinsic job satisfaction and organizational commitment through the mediating influence of mastery goal orientation and perceived coaching effectiveness career clarity and work well-being. Therefore hypothesis 6.5c was partially supported. Figure 6.37 depicts the direct coefficient pathways for these variables.
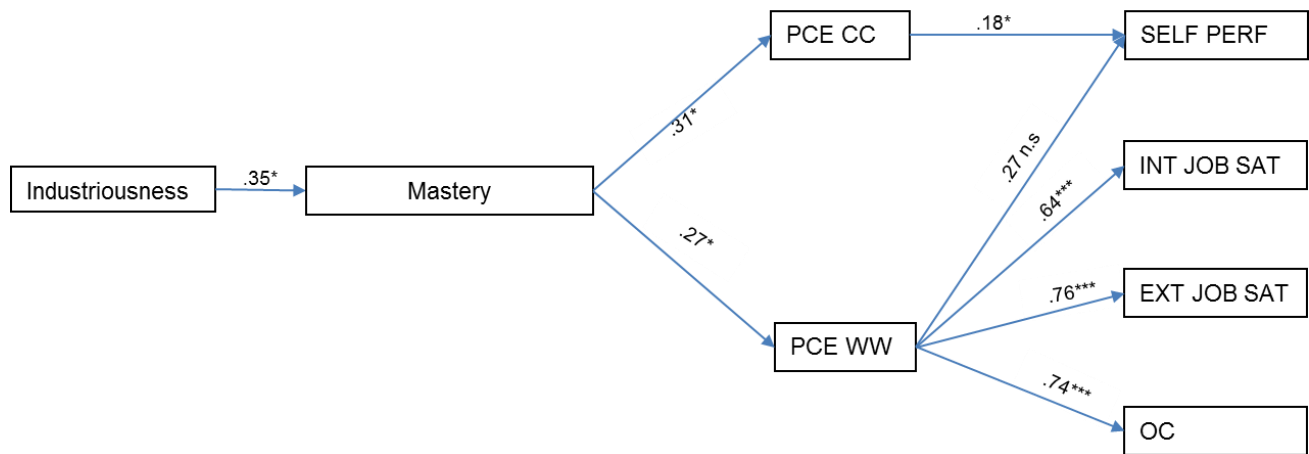


**Figure 6.37:** Model coefficients for the direct effects for industriousness and coaching outcomes
Note: PCE CC – perceived coaching effectiveness career clarity; PCE WW – perceived coaching effectiveness work well-being; SELF PER – self-ratings of performance; INT JOB SAT – intrinsic job satisfaction; EXT JOB SAT – extrinsic job satisfaction; OC – organizational commitment; * $p < .05$; ** $p < .01$; *** $p < .00$; $n = 53$

***Hypotheses 6.5e and 6.5f.*** Hypotheses 6.5e and 6.5f predicted the indirect influence of withdrawal and volatility on coaching outcomes via BIS, performance avoidance goal orientation and perceived coaching effectiveness. The coefficients for the direct pathways for all of the perceived coaching effectiveness factors are depicted in Figure 6.38. As there were no significant consecutive pathways in this model, no further mediation analysis was conducted. Therefore hypotheses 6.5e and 6.5f were not supported.

**Figure 6.38:** Model coefficients for the direct effects for withdrawal, volatility and perceived coaching effectiveness

Note: BIS – behavioural inhibition system; PCE PCC – perceived coaching effectiveness career clarity; PCE TP – perceived coaching effectiveness team performance; PCE WW – perceived coaching effectiveness work well-being; PCE PER – perceived coaching effectiveness performance; PCE PO – perceived coaching effectiveness planning & organizing; PCE PEA – perceived coaching effectiveness personal effectiveness & adaptability.; * $p < .05$; ** $p < .01$; *** $p < .00$; $n = 53$

*Hypothesis 6.5g.* Hypotheses 6.5g predicted the indirect influence of intellect on coaching outcomes via mastery goal orientation and perceived coaching effectiveness. The coefficients for the direct pathways for all of the perceived coaching effectiveness factors are depicted in Figure 6.39. The consecutive pathways for intellect, mastery, career clarity; team performance; work well-being and personal effectiveness and adaptability were significant, therefore these pathways were tested for indirect effects. The mediation analysis suggests that the only significant indirect effects were for the pathways from intellect to career clarity ($B = .25$, [.07, .49]); work well-being ($B = .25$, [.05, .53]) and personal effectiveness and adaptability ($B = .23$, [.08, .46]) though mastery goal orientation. The next stage was to establish whether these indirect effects were still present when the coaching outcomes (self and others-ratings of performance, intrinsic and extrinsic job satisfaction and organizational commitment) were included in the model. For the career clarity pathway, the analysis suggests that there was a significant indirect effect for intellect on self-ratings of performance ($B = -.04$, [-.09, -.01]) through mastery goal orientation and career clarity. For the work well-being pathway, the analysis suggests that there was a significant indirect effect for intellect on self-ratings of performance ($B = -.03$, [-.09, -.003]); intrinsic job satisfaction ($B = .12$, [.02, .32]); extrinsic job satisfaction ($B = .17$, [.04, .49]) and organizational commitment ($B = .25$, [.05, .72]) through mastery goal orientation and work well-being. Finally, for the personal effectiveness and

adaptability pathway, the analysis suggests that the indirect effects for all outcomes were not significant. The indirect effects are summarized in Table 6.33.
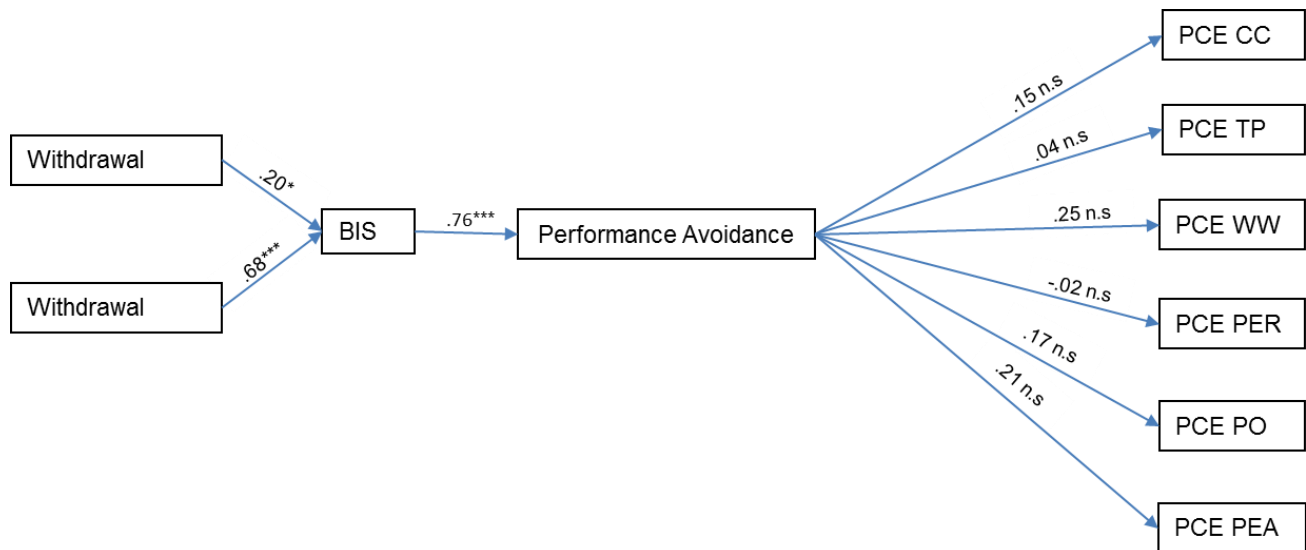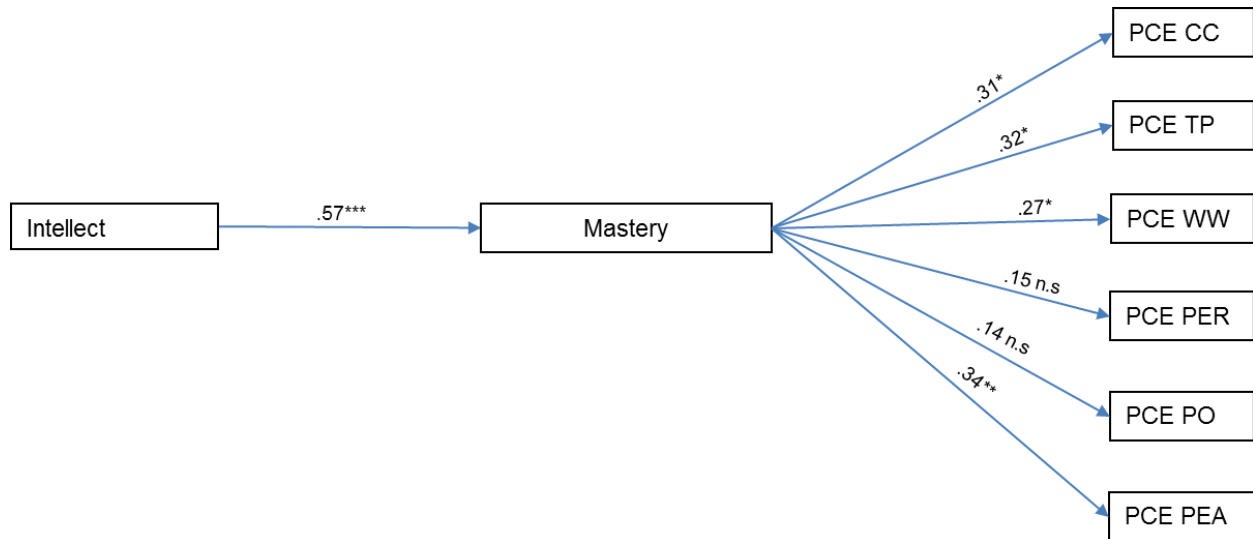


**Figure 6.39:** Model coefficients for the direct effects for intellect and perceived coaching effectiveness

Note: PCE PCC – perceived coaching effectiveness career clarity; PCE TP – perceived coaching effectiveness team performance; PCE WW – perceived coaching effectiveness work well-being; PCE PER – perceived coaching effectiveness performance; PCE PO – perceived coaching effectiveness planning & organizing; PCE PEA – perceived coaching effectiveness personal effectiveness & adaptability; * $p < .05$; ** $p < .01$; *** $p < .00$; $n = 53$

| IV | M1 | M2 | DV | B | BCa CI | *abps* | 95% BCa CI | *abcs* | 95% BCa CI | *Pm* | 95% BCa CI | Rm | 95% BCa CI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OI** | **MAST** |  | **PCE CC** | **.25** | **.07, .49** | **.42** | **.11, .75** | **2.36** | **-.39, 404.41** | **-1.74** | **-165.74, .85** | **-.002** | **-.09, .09** |
| OI | MAST |  | PCE TP | .10 | -.02, .28 | .23 | -.08, .57 | .12 | -.03, .32 | .37 | -.09, 1.47 | .08 | .02, .18 |
| **OI** | **MAST** |  | **PCE WW** | **.25** | **.05, .53** | **.35** | **.06, .71** | **.18** | **.04, .39** | **1.92** | **.17, 249.87** | **-2.09** | **-505.53, -.40** |
| **OI** | **MAST** |  | **PCE PEA** | **.23** | **.08, .46** | **.42** | **.15, .75** | **.22** | **.08, .41** | **1.48** | **-3.23, 30.18** | **-3.09** | **-5665.39, -.91** |
| **OI** | **MAST** | **PCE CC** | **SELF PERF[1]** | **-.04** | **-.09, -.01** | **-.13** | **-.31, -.02** | **-.07** | **-.16, -.01** | **.24** | **-.46, 3.98** | **-12.88** | **-1371.43, -22.23** |
| OI | MAST | PCE CC | OTHERS PERF[1] | .01 | -.03, .06 | .02 | -.10, .17 | .01 | -.05, .09 | -.09 | -12.41, .68 | -.07 | -25.77, .31 |
| OI | MAST | PCE CC | INT JOB SAT | .005 | -.09, .12 | .01 | -.14, .15 | .003 | -.07, .08 | -.04 | -9.39, .82 | -.02 | -6.69, .48 |
| OI | MAST | PCE CC | EXT JOB SAT | -.004 | -.14, .10 | -.004 | -.14, .13 | -.00 | -.08, .07 | -.16 | -430.56, .23 | .03 | -2.76, 1.63 |
| OI | MAST | PCE CC | OC | .04 | -.09, .28 | .03 | -.07, .21 | .02 | -.04, .10 | 1.08 | .32, 208.16 | -.16 | -49.56, .20 |
| **OI** | **MAST** | **PCE WW** | **SELF PERF[1]** | **-.03** | **-.09, -.003** | **-.10** | **-.28, -.01** | **-.05** | **-.16, -.01** | **.20** | **-.03, 4.25** | **-3.19** | **-66.61, -2.12** |
| OI | MAST | PCE WW | OTHERS PERF[1] | .01 | -.02, .07 | .03 | -.07, .20 | .01 | -.03, .10 | -.12 | -11.49, .38 | -.10 | -16.02, .20 |
| **OI** | **MAST** | **PCE WW** | **INT JOB SAT** | **.12** | **.02, .32** | **.17** | **.03, .40** | **.09** | **.01, .21** | **-.98** | **-73.79, -.16** | **-.72** | **-227.18, .01** |
| **OI** | **MAST** | **PCE WW** | **EXT JOB SAT** | **.17** | **.04, .49** | **.19** | **.04, .49** | **.10** | **.02, .27** | **7.24** | **3.73, 908.31** | **-6.01** | **-1731.93, -3.75** |
| **OI** | **MAST** | **PCE WW** | **OC** | **.25** | **.05, .72** | **.19** | **.04, .49** | **.10** | **.02, .27** | **6.64** | **4.14, 2678.24** | **-1.64** | **-5214.26, -.43** |
| OI | MAST | PCE PEA | SELF PERF[1] | -.02 | -.08, .0004 | -.09 | -.26, .003 | -.05 | -.14, .0003 | .17 | -.33, 3.10 | -1.58 | -215.81, -.60 |
| OI | MAST | PCE PEA | OTHERS PERF[1] | .02 | -.02, .08 | .07 | -.06, .23 | .03 | -.03, .12 | -.30 | -47.24, .37 | -.26 | -21.05, .23 |
| OI | MAST | PCE PEA | INT JOB SAT | -.02 | -.12, .05 | -.03 | -.17, .08 | -.01 | -.09, .04 | .17 | -.13, 22.04 | .09 | -.34, 3.05 |
| OI | MAST | PCE PEA | EXT JOB SAT | -.03 | -.16, .07 | -.03 | -.17, .08 | -.02 | -.09, .04 | -1.21 | -793.18, -.45 | .24 | -.03, 318.03 |
| OI | MAST | PCE PEA | OC | -.01 | -.21, .14 | -.01 | -.14, .12 | -.01 | -.08, .06 | -.37 | -86.11, .01 | .05 | -.69, 4.98 |

**Table 6.33:** Summary of indirect effects for intellect.

Note: *n* = 53;  OI – intellect; MAST – mastery goal orientation; PCE CC – perceived coaching effectiveness – career clarity; PCE WW – perceived coaching effectiveness – work well-being; PCE PEA – perceived coaching effectiveness – personal effectiveness & adaptability; SELF PERF – self-ratings of performance; OTHERS PERF – others-ratings of performance; INT JOB SAT – intrinsic job satisfaction; EXT JOB SAT – extrinsic job satisfaction; OC – organizational commitment (all outcomes measured at time two); BCa CI – bias-corrected and accelerated bootstrap confidence interval; *ab*$_{ps}$ – partially standardized indirect effect; *ab*$_{cs}$ – completely standardized indirect effect; *P*$_m$ – ratio of the indirect effect to the total effect; R$_m$ – ratio of the indirect effect to the direct effect; [1] low score = high performance therefore a negative association should be reversed. Significant results are listed in bold.

***Hypothesis 6.5g: results summary.*** This results of this section suggest that there is a significant indirect influence of intellect on self-ratings of performance, intrinsic and extrinsic job satisfaction and organizational commitment, through the mediating influence of mastery goal orientation and perceived coaching effectiveness career clarity and work well-being. Therefore hypothesis 6.5g was partially supported. Figure 6.40 depicts the direct coefficient pathways for these variables.
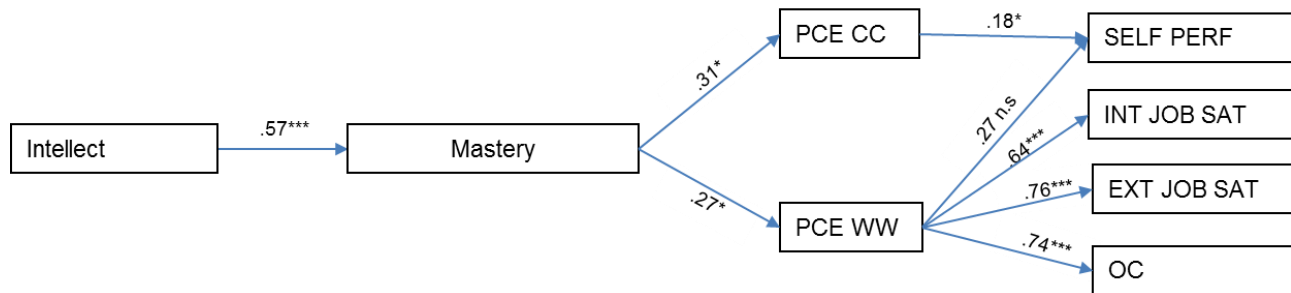


**Figure 6.40:** Model coefficients for the direct effects for intellect and coaching outcomes
Note: PCE CC – perceived coaching effectiveness career clarity; PCE WW – perceived coaching effectiveness work well-being; SELF PER – self-ratings of performance; INT JOB SAT – intrinsic job satisfaction; EXT JOB SAT – extrinsic job satisfaction; OC – organizational commitment; * $p < .05$; ** $p < .01$; *** $p < .00$; $n = 53$

**Hypothesis 6.5: results summary.** The analysis for hypothesis 6.5 indicates that a number of significant pathways are present between the big five traits, BIS/BAS, goal orientation, perceived coaching effectiveness and coaching outcomes. The mediation analysis identified that in terms of impact on coaching outcomes, assertiveness, enthusiasm, industriousness and intellect all have an indirect influence on coaching outcomes with BAS drive, performance approach and mastery goal orientation significant mediators. In terms of perceived coaching effectiveness, career clarity; work well-being; performance and personal effectiveness and adaptability were all significant mediators.

**Discussion**

The present study offers an exploration of the theoretical model of the impact of individual differences on coaching outcomes in an organizational context. The dual aims of this study were to provide an evaluation of the effectiveness of coaching within the workplace and to conduct a test of the relationships proposed in the model shown in Figure 6.1. A series of hypothesis were examined in this study. Table 6.34 provides a summary of these hypotheses and the findings that have been reported.

| Hypothesis | Prediction | Supported? |
|---|---|---|
| H6.1 | The coaching intervention will significantly improve coaching outcomes when the experimental group is compared to the control group at the three time points, as measured by:<br>• Self-ratings of performance<br>• Others-ratings of performance<br>• Intrinsic job satisfaction<br>• Extrinsic job satisfaction<br>• Organizational commitment | ✓<br>X<br>X<br>X<br>X |
| H6.2a | The impact of coaching will be greater for people who are high on enthusiasm and assertiveness, as measured by:<br>• Self-ratings of performance<br>• Others-ratings of performance<br>• Intrinsic job satisfaction<br>• Extrinsic job satisfaction<br>• Organizational commitment | ✓ enthusiasm<br>X<br>✓ enthusiasm<br>X<br>✓ enthusiasm |
| H6.2b | The impact of coaching will be greater for people who are high on industriousness and orderliness, as measured by:<br>• Self-ratings of performance<br>• Others-ratings of performance<br>• Intrinsic job satisfaction<br>• Extrinsic job satisfaction<br>• Organizational commitment | X<br>X<br>✓ orderliness<br>X<br>X |
| H6.2c | The impact of coaching will be greater for people who are low on withdrawal and volatility, as measured by:<br>• Self-ratings of performance<br>• Others-ratings of performance<br>• Intrinsic job satisfaction<br>• Extrinsic job satisfaction<br>• Organizational commitment | X<br>X<br>X<br>X<br>X |

| Hypothesis | Prediction | Supported? |
|---|---|---|
| H6.2d | The impact of coaching will be greater for people who are high on intellect, as measured by:<br>• Self-ratings of performance<br>• Others-ratings of performance<br>• Intrinsic job satisfaction<br>• Extrinsic job satisfaction<br>• Organizational commitment | ✓<br>X<br>✓<br>X<br>X |
| H6.3 | Perceived coaching effectiveness scores will be significantly associated with outcomes, as measured by:<br>• Self-ratings of performance<br>• Others-ratings of performance<br>• Intrinsic job satisfaction<br>• Extrinsic job satisfaction<br>• Organizational commitment | ✓ TP<br>X<br>✓ WW & PEA<br>✓ WW<br>✓ WW |
| H6.4a | Enthusiasm, assertiveness, industriousness, orderliness and intellect will be positively associated with perceived coaching effectiveness factors:<br>• Career clarity<br>• Team performance<br>• Work well-being<br>• Performance<br>• Planning and organizing<br>• Personal effectiveness and adaptability | X<br>✓ Intellect<br>X<br>X<br>X<br>X |
| H6.4b | Withdrawal and volatility will be negatively associated with perceived coaching effectiveness factors:<br>• Career clarity<br>• Team performance<br>• Work well-being<br>• Performance<br>• Planning and organizing<br>• Personal effectiveness and adaptability | X<br>X<br>X<br>X<br>X<br>X |

| Hypothesis | Prediction | Supported? |
|---|---|---|
| H6.5a | Assertiveness will indirectly influence coaching outcomes via BAS fun-seeking, BAS drive, mastery goal orientation, performance approach goal orientation and perceived coaching effectiveness. For: <br>• Self-ratings of performance <br>• Others-ratings of performance <br>• Intrinsic job satisfaction <br>• Extrinsic job satisfaction <br>• Organizational commitment | <br><br><br>✔<br>✔<br>X<br>✔<br>X |
| H6.5b | Enthusiasm will indirectly influence coaching outcomes via BAS fun-seeking, BAS drive, BAS reward responsiveness, mastery goal orientation, performance approach goal orientation and perceived coaching effectiveness. For: <br>• Self-ratings of performance <br>• Others-ratings of performance <br>• Intrinsic job satisfaction <br>• Extrinsic job satisfaction <br>• Organizational commitment | <br><br><br>✔<br>X<br>X<br>X<br>X |
| H6.5c | Industriousness will indirectly influence coaching outcomes via mastery goal orientation and perceived coaching effectiveness. For: <br>• Self-ratings of performance <br>• Others-ratings of performance <br>• Intrinsic job satisfaction <br>• Extrinsic job satisfaction <br>• Organizational commitment | <br><br>✔<br>X<br>✔<br>✔<br>✔ |
| H6.5d | Orderliness will indirectly influence coaching outcomes via mastery goal orientation and perceived coaching effectiveness. For: <br>• Self-ratings of performance <br>• Others-ratings of performance <br>• Intrinsic job satisfaction <br>• Extrinsic job satisfaction <br>• Organizational commitment | <br><br>X<br>X<br>X<br>X<br>X |

| Hypothesis | Prediction | Supported? |
|---|---|---|
| H6.5e | Withdrawal will indirectly influence coaching outcomes via BIS, performance avoidance goal orientation and perceived coaching effectiveness. For:<br>• Self-ratings of performance<br>• Others-ratings of performance<br>• Intrinsic job satisfaction<br>• Extrinsic job satisfaction<br>• Organizational commitment | <br><br>X<br>X<br>X<br>X<br>X |
| H6.5f | Volatility will indirectly influence coaching outcomes via BIS, performance avoidance goal orientation and perceived coaching effectiveness. For:<br>• Self-ratings of performance<br>• Others-ratings of performance<br>• Intrinsic job satisfaction<br>• Extrinsic job satisfaction<br>• Organizational commitment | <br><br>X<br>X<br>X<br>X<br>X |
| H6.5g | Intellect will indirectly influence coaching outcomes via mastery goal orientation and perceived coaching effectiveness. For:<br>• Self-ratings of performance<br>• Others-ratings of performance<br>• Intrinsic job satisfaction<br>• Extrinsic job satisfaction<br>• Organizational commitment | <br><br>✓<br>X<br>✓<br>X<br>X |

**Table 6.34:** Summary of predictions and findings

Note: PCE WW – perceived coaching effectiveness work well-being; PCE PEA – perceived coaching effectiveness personal effectiveness & adaptability; BIS – behavioural inhibition system; BAS – behavioural activation system

**Main effect of coaching and influence of individual differences.** The review of the qualitative comments from participants who had received coaching demonstrated that the participants generally viewed the coaching positively and were able to identify a number of specific areas in which they believed the coaching had made a positive impact. For the quantitative analysis, partial support was found for the main effect of the coaching intervention. The analysis indicated that when compared to pre-coaching, self and others-ratings of performance improved significantly after coaching. However, only the differences in the self-ratings of performance remained significant when the experimental group was compared to the control group. The significant increase in others-ratings of performance for both the experimental and control group across time could be explained by the placebo effect of being placed on a waiting list. All participants in the control group were on a waiting list and would therefore receive the coaching intervention once the final data collection had been completed. It is well documented in the field of psychotherapy, that the anticipation of receiving an intervention such as psychotherapy has a powerful influence on stimulating hope within a participant (Beecher, 1955). Asay and Lambert (1999) attribute around 15% of patient outcomes in psychotherapy to a placebo effect and suggest that merely the engagement with a development intervention is enough to mobilize a client's expectation of improvement (Frank & Frank, 1991). McKenna and Davis (2009) propose that it is highly likely that the placebo effect that is witnessed in psychotherapy will also apply to coaching. McKenna and Davis suggest that coaches, either explicitly or implicitly, send messages to coachees that a successful change is anticipated and this alone is likely to mobilize a client's expectation that they will improve and therefore influence their perceptions of change after coaching. This positive impact on outcomes based on anticipation of coaching may therefore provide some explanation for the change in others-ratings of performance across time, even for participants on the waiting list control group.

The impact of the placebo effect also needs considering in the context of the changes observed in the intervention group. If participants placed on the waiting list experienced increased expectations in relation to performance improvement, then it is highly likely that the participants in the intervention group may have experienced the same degree of expectation of improvement. For the participants in this study, it could be argued that any changes in outcomes for both the intervention and control group could be as a result of a placebo effect rather than any real effect of the coaching intervention. Unfortunately, the impact of the placebo effect is an inherent limitation of intervention evaluation research such as the research described in this thesis. One potential method of identifying any true effects of the intervention would be to

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include a third participant group, a true 'control' group, where no intervention was offered at the conclusion of the study. Only by engaging a group of participants in this way could the placebo effect be controlled for.

Next, the influences of the individual differences variables on coaching outcomes were examined. It was hypothesised in this thesis that coaching will have a greater impact for some individuals than others based on their individual differences. If this is the case, then it is likely that the main effects of coaching on outcomes may not be evident when all participants are examined together (as was the case for hypothesis one). Therefore, by separating participants based on individual differences, it was possible to explore whether coaching was more or less effective for particular personality traits. The data indicated that there was a significant interaction for self-ratings of performance, intrinsic job satisfaction, organizational commitment and individual differences, therefore the results from this study suggest that the personality of the coachee does influence the degree to which coaching will impact on these outcomes.

The results of the analysis exploring hypothesis 6.2 indicated that individuals who were low in enthusiasm experienced the greatest significant mean increase in scores for self-ratings of performance, intrinsic job satisfaction and organizational commitment. At the start of this chapter, it was proposed that individuals' high in enthusiasm would engage more positively with the coaching process as it would appeal to their positive, active and talkative nature. This would mean that they would be more likely to listen to the coach, reflect on the coaching sessions and pursue their goals through the agreed actions. These activities would result in improved performance. However, the findings indicate that rather than individuals who were high in enthusiasm, it was individuals who were low in enthusiasm who appeared to improve the most on outcomes following coaching. Examining the mean scores show that for self-ratings of performance, intrinsic job satisfaction and organizational commitment, the mean scores for individuals low in enthusiasm were lower at time one than individuals high in enthusiasm, however they had increased more by time three. Therefore, understanding a coachee's levels of enthusiasm is a significant predictor of coaching outcomes and it is individuals who are low in enthusiasm that potentially have the most to gain from coaching to start with. Furthermore, coaching appears to help participants to improve in outcomes to 'close the gap' with their high enthusiasm counterparts. A point which is explored further in the final chapter.

For intellect, there was a significant interaction effect for self-ratings of performance and the mean scores which show that it was individuals high in intellect that had the highest scores at time one and also improved the most between the time points. Finally, the results indicate that there was a significant interaction effect for orderliness and intrinsic job satisfaction. It was predicted that individuals high in orderliness would engage more positively with the coaching process because their organized and systematic approach would mean that they would be able too effectively manage any actions that should arise from coaching. Their rule conscious nature and high attention to detail would also mean that they are likely to systematically follow through with any actions after the coaching had been completed. The results support this predication as individuals high in orderliness showed the greatest significant mean change in intrinsic job satisfaction across time points.

These findings address one of the research aims of this thesis, to start to answer the question 'for whom is coaching most suited'. The analysis indicates that, for this sample, individuals who were low in enthusiasm, high in intellect, and high in orderliness benefitted most from the coaching intervention for the outcomes measured in this study.

**Perceived coaching effectiveness.** The next stage of analysis was aimed at exploring whether there was a link between perceptions of coaching effectiveness and the outcomes measured. By utilising the scale developed in chapter five of this thesis, the findings could potentially provide support for the prediction that perceptions of coaching effectiveness, as measured by the perceived coaching effectiveness scale, are a proxy indicator of actual outcomes. The analysis for hypothesis 6.3 demonstrated that perceived coaching effectiveness was significantly associated with self-ratings of performance (team performance factor); intrinsic job satisfaction (work well-being and personal effectiveness and adaptability factors); extrinsic job satisfaction and organizational commitment (work well-being factor).

In order to improve understanding of the relationship between individual differences and coaching outcomes, hypothesis 6.4 explored whether individual differences were significantly associated with perceived coaching effectiveness, with the analysis indicating that intellect was associated with the team performance factor.

Considering the results for hypothesis 6.1 to 6.4 in combination, they suggest that there is a link between individual differences and coaching outcomes. These results contribute to the literature

in two ways. Firstly, the results suggest that coaching provided in the approach detailed in this study is impactful on outcomes. Secondly, awareness of the coachee's enthusiasm, intellect and orderliness can be used as indicators of the impact of coaching on outcomes.

**Mediators.** A further aim of this study was to explore the theoretical model depicted in Figure 6.1 that proposes the underlying mediating relationships that explain why individual differences predict coaching outcomes. This set of analyses found partial support for the theoretical model of individual differences and coaching outcomes, demonstrating that BAS drive, mastery goal orientation and performance approach goal orientation were significant mediators for assertiveness, enthusiasm, industriousness, intellect, perceived coaching effectiveness and coaching outcomes. However there was no significant mediation for orderliness, withdrawal and volatility. The analysis also indicated that BAS reward and fun-seeking and BIS were not significant mediators as predicted. The implications of these results in relation to the validity of the theoretical model will be explored in detail in chapter seven.

**Limitations**

When interpreting the potential impact of the findings of this study it is also important to consider any limitations of the research.

**Sampling.** Sampling may be considered an issue with this study. In this study, participants were given the opportunity to participate in the coaching intervention; however there was no obligation for participants to take part. This may have led to an increased likelihood that only participants who anticipated that the coaching would be beneficial, were likely to participant. If this is the case, it may be that this group of participants were more likely to experience a placebo effect, as they may have high levels of hope associated with the coaching and therefore strongly anticipate that the coaching will have a positive effect on outcomes. This limitation may be avoided with a broader sample which includes some individuals who are more sceptical regarding coaching.

A further sampling issue is the relatively small sample size for this study. An implication of small samples is the potential reduction in generalizability of the results due to a lack of power. A common concern with low power is the inability to detect true differences; this is particularly significant when looking to explore interactions and when the effect sizes are known to be small (Cohen and Cohen, 1983). The effect sizes observed in study three were small (partial $\eta^2$

ranging from .07 to .10) albeit consistent with the small effects found in other research in this area (e.g. Smither et al., 2003) therefore a larger sample size would be needed to detect any significant effects. However, this also points to a strength of this study in that a number of significant interactions were identified, despite the relatively small sample of 84 participants.

**Outcome measures.** A further limitation of the research is linked to the data collection methods. As is typical of research within the organizational context, the selection of outcome measures had to match the requirements of achieving the research aims, be applicable to all participants in the sample and be acceptable for the organization. Others-ratings of performance was selected as one of the outcome measures, however the analysis demonstrated that there was no significant interaction effect for this variable, suggesting that the coaching did not impact on others-ratings of performance. However, one other potential explanation for the non-significant finding is due to limitations more generally with utilising others-ratings of performance as an outcome measure. For example, Buckingham (2015) is particularly critical of the use of others-ratings of performance, citing a body of evidence that demonstrates that ratings of others performance is an unreliable form of performance measurement. Buckingham (2015) accounts for the unreliability in others-ratings of performance with the idiosyncratic rater effect, whereby individuals' ratings of others are influenced more by their own idiosyncrasies than the other persons actual behaviour, with as much as 61% of a rating of behaviour being influenced by the rater rather than the ratee's actual performance (Hoffman, Lance, Bynum & Gentry, 2010; Mount, Judge, Scullen, Sytsma & Hezlett, 1998; Scullen, Mount & Goff, 2000). This inherent limitation with others-ratings of performance may account for the non-significant findings for this outcome measure, as others-ratings of performance may not provide an accurate reflection of actual changes in performance due to idiosyncratic rater effects.

Finally, in order to match outcomes more closely with the framework of outcomes presented in this thesis, it would have been preferable to also use objective, results based outcomes of coaching. However, because the participants worked in a wide variety of occupations and departments within the research organization, it was not possible to select one consistent objective, results/performance outcome that was applicable to all participants. This challenge reflects 'real' coaching situations where individual coachees have highly personalised aims and outcomes of coaching. However, for research purposes, generalised results/performance outcomes would be useful in order to examine coaching impact at this level. Future research

could aim to conduct a similar intervention in the work context with a homogenous sample with a shared objective results/performance outcome.

**Conclusion**

To address a key research aim of this thesis, this chapter explored the question 'For whom is coaching most suited'. To achieve this, a quasi-experimental research design was employed with an organizational sample and the influence of the coachee's personality on coaching outcomes was investigated. This study has made a number of important contributions to the coaching literature. Firstly, this study provides evidence that a coaching approach, when applied utilising the approach detailed in this chapter, has a significantly positive impact on coaching outcomes. Secondly, this study provides evidence that the personality characteristics of the coachee have a significant influence on coaching outcomes. Therefore, this study provides some initial evidence to help understand for whom coaching is likely to benefit the most. Thirdly, this study has provided further evidence that the perceived coaching effectiveness scale has validity in measuring coaching outcomes and that perceived coaching effectiveness scores are significantly related to coaching outcomes. Finally, the mediation analysis provides partial support for the theoretical model and provides an initial understanding of the underlying mechanisms which help to explain why individual differences influence coaching outcomes. The final chapter will fully integrate the three studies presented in this thesis and discuss the theoretical and practical implications of the findings.

# CHAPTER SEVEN

## General Discussion

"Ignorance more frequently begets confidence than does knowledge: it is those who know little, not those who know much, who so positively assert that this or that problem will never be solved by science."

*Charles Darwin, The Descent of Man*

## Chapter Summary

This chapter provides an overall discussion of the findings of this thesis. A brief summary of the major findings from across the studies is presented first. This is followed by an exploration of the theoretical implications that can be drawn from this research, including a discussion of findings in relation to the theoretical model of individual differences and coaching effectiveness. Next, the practical implications of this thesis are explored and some suggestions are made in relation to directions for future research. Finally, a summary of the limitations of the studies is presented. The chapter closes with an overall conclusion for the thesis.

## Summary of Empirical Findings and Study Strengths

The main aim of this thesis was to investigate whether workplace coaching is effective and to understand the factors influencing effectiveness. Three studies were conducted to address this aim. A framework of outcomes and a conceptual model were proposed which included mediating processes and a number of hypotheses were tested in order to explore this model. The key findings of the three studies are summarised next along with a discussion of the methodological strengths of each piece of research.

The first study was a meta-analytic review of the existing research on the effectiveness of workplace coaching. The research addressed the lack of understanding on the overall effectiveness of workplace coaching due to the paucity of scientific evidence examining the benefits of coaching to organizations and the poor specification of the types of outcomes that can be expected from coaching. Drawing on the work of Kraiger, Ford and Salas (1993) and Kirkpatrick (1996), a theoretically driven framework of coaching outcomes was proposed that was then utilised to systematically code the studies included within the meta-analysis. The development and subsequent examination of this taxonomy of outcomes mean that coaching

outcomes can now be aligned and viewed alongside outcomes from other forms of training, learning and development.

The analysis indicated that coaching had a positive effect on organisations overall, and on specific forms of outcome criteria, with the largest effect size observed for individual-results. This result was discussed in relation to the potential validity of coaching to promote transfer of learning from the coaching session back to the work-place. These results indicate that businesses can expect positive performance and improvements from investment in coaching.

In addition to exploring the main effects of coaching, this study also proposed and investigated a series of potential practice moderators of coaching criterion effects. These practice moderators were described as techniques or tools that coaches may incorporate into their coaching approaching which could potentially influence the impact of coaching on outcomes. The analysis showed that there was a significant moderation of effect size for the type of coach, with effects being stronger for internal coaches compared to external coaches. This finding was explored in relation to the inevitable superior level of understanding of the organizational culture and climate that an internal coach would have compared to an external coach and the impact this understanding could have on the coach's ability to support the coachee in becoming more productive in his or her specific workplace. The analysis also showed that a further significant moderator was the use of multi-source feedback, with the use of multi-source feedback combined with coaching producing smaller effect sizes than coaching alone. These findings were discussed in the context of some of the potentially negative mechanisms associated with feedback such as the potential of the feedback to divert the coachee's attentional resources away from the core elements of the coaching process.

There was no moderation by effect size by coaching format or duration of coaching. These results indicate that coaching is equally as effective whether it is conducted either face-to-face or in a blended format (where face-to-face and e-coaching is combined). This result has important implications for the practice of coaching, as coaching conducted either by telephone or email is likely to be more cost and time efficient than face-to-face coaching, potentially making coaching a more accessible learning and development tool for a wider audience. The lack of significant moderation for duration of coaching (either number of sessions or longevity of intervention) also has positive implications for the practice of coaching as this suggests that shorter and potentially more cost effective coaching interventions are likely to be effective.

Overall, the research in study one indicates that workplace coaching is an effective method of delivering individual learning and development in the workplace and can produce improvements in performance and results. Furthermore, the meta-analytic results provide important evidence to indicate how the practice factors of coaching can be tailored to ensure that outcomes from coaching are maximised.

The second study, presented in chapter five, started to address the lack of suitable measurement tools available to evaluate coaching outcomes. The research in this study was a pilot in the development and validation of a perceived coaching effectiveness scale to be used by coachees after participating in workplace coaching and followed a multi-stage scale development procedure as outlined by Hinkin (1998) and DeVellis (2012). This study utilised a deductive approach and the framework of coaching outcomes used in study one formed the start point for the exploration of the types of outcomes coachees perceive to occur as a result of coaching. In-depth interviews showed that participants agreed with the outcomes in the framework, however, indicated that the results outcome should be further divided in order to create a more accurate understanding of coaching outcomes. A total of 147 potential scale items were generated from these interviews and then validated in the second stage of the research using a technique utilised by Mackenzie, Podsakoff and Fotter (1991). This validation process resulted in a reduction of items to 110.

The next stage of the research was to administer the scale to a wider sample in order to examine whether the underlying factor structure confirmed the expectations of the constructs being measured and to further refine the number of items on the scale. A total of 201 participants who had received coaching completed the scale. Exploratory factor analysis presented two alternative models: a nine factor model consisting of 27 items and a six factor model consisting of 21 items. Confirmatory factor analysis examined the fit of both models to the data which indicated that the six factor model provided a superior fit. The six factors in the final model are career clarity; team performance; work well-being; performance; planning and organizing and personal effectiveness and adaptability.

The analysis suggests that the type of outcomes that coachees perceived to occur as a result of coaching can be grouped into these six categories. This study provides a pilot study that has sought to develop a reliable and valid tool that can be used to help to assess whether coaching

has been effective and to understand the types of outcomes coachees perceived coaching to have produced. Future research is now needed to administer the scale to large, multiple, independent samples in order to further validate the scale.

The final study was a longitudinal field experiment within a non-profit distributing organization based in the UK. For this study, the impact of the coaching intervention was assessed in an organizational context, against a range of outcomes. A test of the theoretical model of individual differences was conducted in order to examine the proposed learner effect factors influencing coaching effectiveness. 53 participants were provided with four, hour long telephone coaching sessions and compared to a control group of 31 participants who received no coaching.

Qualitative responses from participants after coaching indicated that participants perceived the coaching to have had a positive impact on outcomes. These qualitative comments were supported by the quantitative analysis that demonstrated that there was a significant interaction between group and time for self-ratings of performance. These results indicate then when compared to the control group, the coaching group significantly improved in self-ratings of performance across the three time points.

Study three also explored whether there was a significant interaction between individual differences and coaching outcomes. The results indicate that a significant interaction was present for enthusiasm, intellect and orderliness, providing support for the prediction that coaching has a greater impact on outcomes for some individuals based on their personality traits. The mediation analysis provided partial support for the theoretical model of individual differences and coaching effectiveness developed in chapter three and provided some evidence of the underlying mechanisms that explain the link between the coachee's individual differences and coaching outcomes. The implications of these findings are explored in greater detail in the implications for theory section of this chapter.

**Implications for Theory**
From a theoretical perspective, this thesis contributes significantly to the workplace coaching literature. This thesis provides a richer and deeper understanding of the nature of outcomes that can be expected from coaching; the impact of coaching on these outcomes; the range of outcomes that coachees perceive coaching to generate and the factors that influence the effectiveness of coaching on learning and performance outcomes. Theoretically, this thesis

draws on the learning and development literatures and integrates these insights with our current understanding of workplace coaching. The implications for theory from this thesis are three-fold.

Firstly, conceptual frameworks from Kraiger et al. (1993) and Kirkpatrick (1996) were utilised as the start point for the creation of a theoretical framework of coaching outcomes. This framework provides a valuable contribution to the coaching literature, as to-date there has been a high level of inconsistency in the outcomes measured in coaching research. This inconsistency has a negative impact on the accumulation of knowledge and understanding on the nature and magnitude of coaching outcomes as these outcomes are not directly comparable. This also makes the comparison of the outcomes of coaching with other forms of learning and development, such as training, near impossible. The framework of coaching outcomes detailed in this thesis suggests that coaching outcomes can be grouped into affective, cognitive, skill-based and results/performance. Drawing on Kraiger et al. (1993) and Kirkpatrick (1996), acceptable measurement methodology for assessing these outcome criteria have also been specified.

The studies reported in this thesis provided some empirical support for this framework of coaching outcomes. Firstly, the meta-analysis in study one utilised the framework to guide the coding of studies and showed that coaching had a positive impact on all outcomes. Secondly, the perceived coaching effectiveness scale described in study two utilised the framework as the start point in the deductive approach to scale development. The multi-stage scale development process provided further validation of the framework. Further research could utilise this framework of outcomes to provide guidance in the types of outcomes that could be assessed when evaluating the effectiveness of workplace coaching and the methodology that could be utilised to guide this measurement. By grouping outcomes into this framework, future research will be comparable and therefore enable the accumulation of literature to create a clearer understanding of the impact of coaching on outcomes.

The second theoretical implication relates to the theoretical model of coaching processes, practice factors and proposed coaching outcomes detailed in chapter three (Figure 3.5). In response to the lack of understanding in the coaching literature regarding the variables and mechanisms that influence coaching effectiveness, a theoretical model was proposed in which existing theories on goal setting (Locke & Latham, 2002); experiential learning (Kolb, 1984) and psychological fidelity were integrated, in order to explain the underlying processes that generate

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positive change because of coaching. This model also integrated practice factors of coaching tested in the meta-analysis reported in chapter four to moderate the impact of coaching. This theoretical model makes an important theoretical contribution to the coaching literature as there is an absence of testable coaching theory that fully addresses all aspects of coaching. Although this thesis does not provide a full direct test of the independent contributions of these proposed mechanisms, each of the processes were fully integrated and applied consistently in the coaching intervention that was provided in the final study in chapter six.

For example, the use of the goal assessment before the first coaching session (see Appendix E) and the GROW (Whitmore, 1992) approach to structuring the coaching sessions meant that the mechanisms described by Locke and Latham (2002) as leading to the impact of goals on performance were activated. The discussion of the goal during the first stage of the GROW model and the agreement of a timeframe for working on action points during coaching, meant that a clear goal was articulated which encouraged the coachee to direct their attention towards goal-relevant activities and away from goal-irrelevant activities. The discussion of the goal during the first coaching session including the completion of the coaching contract (see Appendix E) and the exploration of the outcomes of achieving the goal, meant that the coachee gained a clear understanding of the importance of the goal and fostered commitment to the goal, consequently encouraging greater enthusiasm and energy towards actively pursuing the goal (Locke & Latham, 2002). The opportunity to discuss and explore the challenges the coachee had faced or was facing in achieving his or her goal with the coach, in a non-judgemental and supportive environment, meant that persistence towards goal achievement was likely to be increased. The coaching process also encouraged the coachee to explore and make sense of existing knowledge and problem solving strategies in a new context and apply these to the goal. The reality stage of the coaching sessions encouraged the coachee to reflect on past experiences and through Socratic and hypothetical questioning, challenged the coachee to apply their own knowledge to new challenges in achieving his or her goals. The iterative nature of the coaching sessions meant that during the updates and discussion of progress towards goal achievement, the coach was able to provide the coachee with summary feedback towards goal achievement.

The processes of coaching were further integrated into the coaching intervention due to the highly reflective nature of the coaching sessions, therefore facilitating the coachees' experiential learning process (Kolb, 1984). The reality stage of the coaching sessions involved a series of

open questions in order to explore what the current reality was in relation to the goal being discussed. The coachee was probed and challenged to provide highly detailed, critically reflective responses to these questions. For example, the coachee would be asked to reflect on the impact of their actions on their behaviour and emotions, provide detailed examples to illustrate any points they made, challenged any unconscious assumptions in their thinking and encourage them to consider the impact of these assumptions. The in-depth examination of the reality during the coaching sessions encouraged the coachee to consider issues or examples in a much more detailed way. During the options stage of coaching, coachees were further encouraged through the experiential learning process by generating abstract conceptualisations in order to consider what the reality of pursuing various options would entail. Once these options had been explored, the coachee would select which options they intended to pursue between coaching sessions, therefore engaging in active experimentation. Therefore the coaching intervention utilised in this thesis, provided a mechanism by which coachees were facilitated in constructing the rich understanding required for effective learning from experience (Boud & Walker, 1993; Kolb, 1984; Mezirow, 1991).

Finally, in order to encourage the transfer of coaching back to the coachees' workplace, a high level of psychological fidelity was comprehensively integrated into the coaching intervention. As each coachee focused on his or her own issues, goals and objectives and was asked to provide his or her own examples to illustrate the coaching discussion, high psychological fidelity was embedded in each session. During each session, an issue unique to the coachee and his or her workplace, would be discussed and explored. Consequently, the coachees experienced high levels of clarity regarding how they could transfer the content of the coaching session to their work environment.

The extant literature discussed in chapter three demonstrated the important influence of goal setting, experiential learning and psychological fidelity in training on performance, building a strong case for the importance of these processes if integrated into coaching. Further research should seek to directly investigate the influence of goal setting, experiential learning and psychological fidelity in coaching, in order to clearly establish the link between these processes and coaching effectiveness, the extent of the relative contributions of each and their potential co-dependency.

The final theoretical implication of this study is provided by the theoretical model of individual differences and coaching effectiveness proposed in chapter three and tested in chapter six. This model builds on the extant literature on individual differences and performance and learning outcomes. The model also integrates theorising on goal orientation and approach/avoidance motivation in order to provide a theoretical explanation for the proposed relationships between individual differences and outcomes. Previous research has identified the important influence of personality on performance (e.g. Barrick & Mount, 1991; Hurtz & Donovan, 2000; Penney et al., 2011) and the links between personality and training proficiency, learning approaches and motivation to learn (e.g. Bakx et al., 2002; Barrick & Mount, 1991; Naquin & Holton, 2002). The current findings lend support for the argument that personality is an important predictor and extended the extant literature in relation to individual differences by providing some initial evidence that personality is an important predictor of coaching outcomes. Research in relation to performance outcomes has also established the importance of goal orientation (e.g. Ferris et al., 2011) and identified links between goal orientation and personality (e.g. Elliot & Thrash, 2002). Furthermore, the underlying BIS/BAS framework has been provided as a theoretical explanation for the personality-performance relationship, with links established between BIS/BAS and personality (e.g. Elliot & Thrash, 2002; Segarra et al., 2014) and BIS/BAS and goal orientation (e.g. Elliot & Thrash, 2002). The current study has provided some confirmation of these links and established that personality, goal orientation and BAS are concepts that may help to understanding the underlying processes influencing coaching outcomes.

In particular, the findings illustrate the important role of BAS drive in mediating coaching outcomes. BAS drive is conceptualised as a determination and dedication towards achieving desired outcomes and is therefore a logical influence in coaching. Success from coaching relies heavily on the individual's desire and motivation to pursue and work towards their goals. Individuals with low levels of BAS drive are unlikely to have the necessary stamina to persist with the pursuit of challenging goals. Furthermore, both mastery goal orientation and performance approach goal orientation where identified as mediators between BAS drive and perceived coaching effectiveness. These findings support previous research by Elliot and Thrash (2002) who identified that BAS was a significant predictor of mastery and performance approach goal orientation. The findings for enthusiasm and assertiveness, depicted in Figure 7.1a and 7.1b indicated that the influence of enthusiasm and assertiveness on coaching outcomes is mediated by the high levels of BAS drive and high performance approach or mastery goal orientation. Therefore both the orientation towards achieving competence in

comparison to others and achieving competence in order to master the task, appear to mediate the impact of enthusiasm, assertiveness and BAS drive on coaching outcomes.

The importance of mastery goal orientation is further confirmed in the models depicted in Figures 7.1c and 7.1d for industriousness and intellect. The findings here confirm previous findings by Payne et al. (2007) that demonstrate that openness and conscientiousness are related to mastery goal orientation. In the context of coaching, individuals with high mastery goal orientation are likely to be motivated to master a task for its own sake. This orientation is well suited to coaching due to the emphasis on helping the coachee to reach their full potential. The findings suggest that the impact of being highly industrious and high on intellect on coaching outcomes is mediated by high mastery goal orientation.

Significant mediation was identified for four of the seven traits tested (assertiveness; enthusiasm; industriousness and intellect), however the tests of difference comparing the impact of individual differences on coaching outcomes for the experimental group and control group in chapter six found significant effects for three of the traits tested (enthusiasm, orderliness and intellect). Orderliness was not shown to be mediated by goal orientation as predicted, however there does appear to be an impact of orderliness on coaching outcomes. This may be because the characteristics of high orderliness relate specifically to elements of time management and organizational skills that directly influence outcomes by enabling the coachee high on orderliness to effectively integrate additional tasks and actions as a result of coaching into their daily working life. The presence of significant mediation for assertiveness and industriousness but the absence of any interaction effects for these traits will be discussed further in the next section.
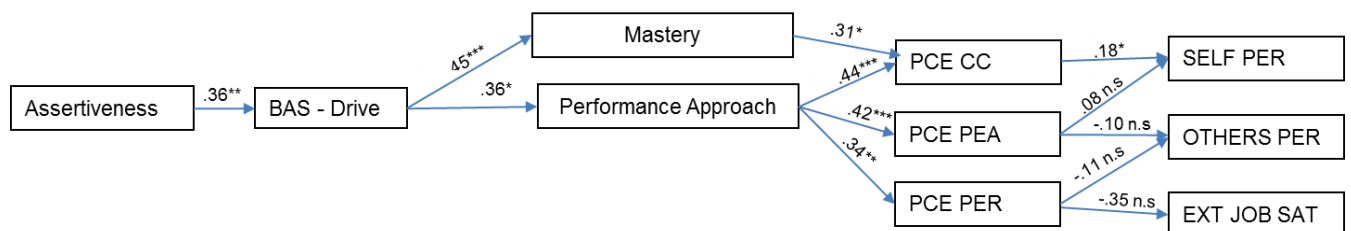


**Figure 7.1a:** Revised model of assertiveness and coaching outcomes
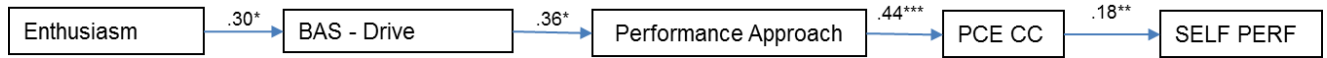
**Figure 7.1b:** Revised model of enthusiasm and coaching outcomes
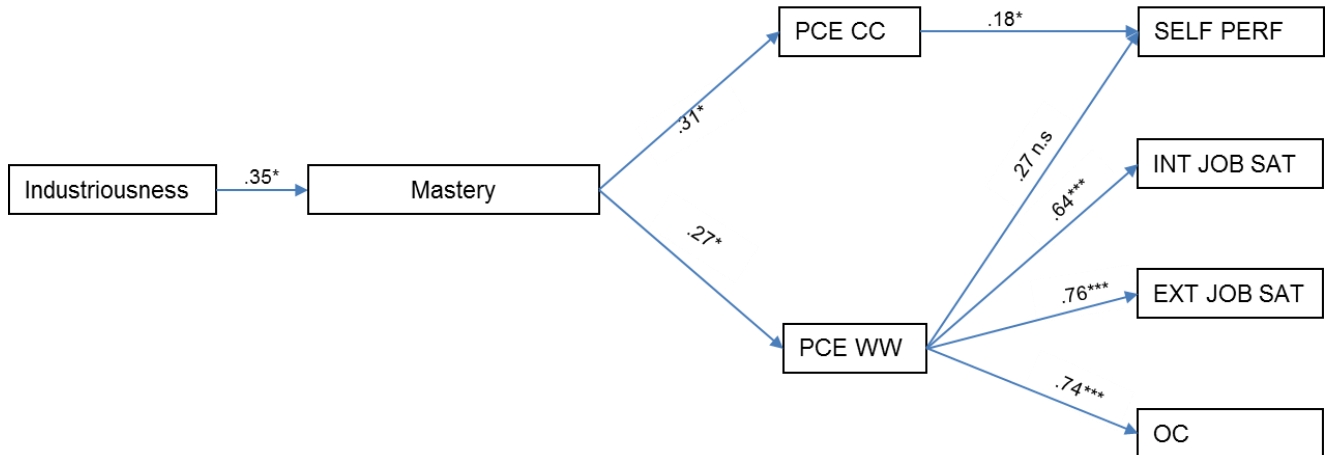


**Figure 7.1c:** Revised model of industriousness and coaching outcomes
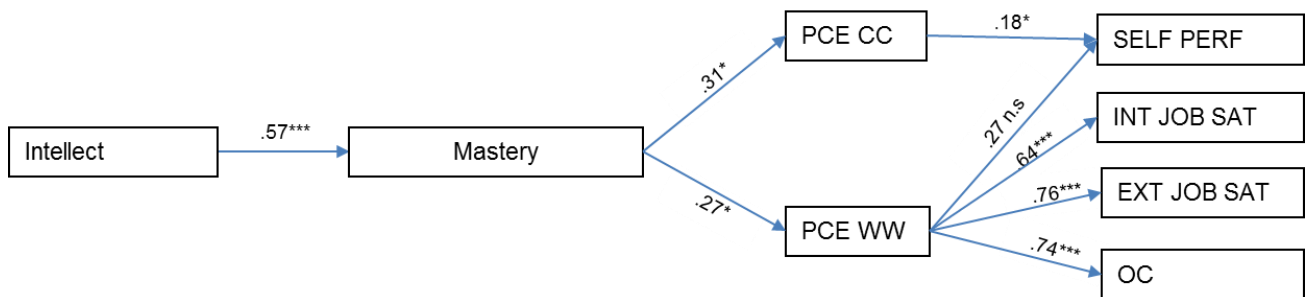


**Figure 7.1d:** Revised model of intellect and coaching outcomes

Note: * p < 0.05; ** p < 0.01; *** p < 0.001; $n$ = 53; BAS – behavioural activation system; PCE CC – perceived coaching effectiveness -  career clarity; PCE PEA – perceived coaching effectiveness – personal effectiveness & adaptability; PCE PER – perceived coaching effectiveness - performance; PCE WW – perceived coaching effectiveness – work well-being; SELF PER – self-ratings of performance; OTHERS PER – others-ratings of performance; EXT JOB SAT – external job satisfaction; INT JOB SAT – intrinsic job satisfaction; OC – organizational commitment.

While the results of study three have provided some support for the theoretical model of individual differences and coaching outcomes, the findings are far from conclusive in terms of support for the model. Given the number of non-significant mediation pathways, such as for BAS reward, BAS fun-seeking and BIS, it is worthwhile to explore the potential validity of alternative theories. BIS/BAS was proposed in chapter three as a potential explanatory theory to link personality with goal orientation and subsequently coaching outcomes. To the researcher's knowledge, this thesis provides the first attempt to formulate and test a theoretical model which

aims to explain and predict the influence of coachees' individual differences on coaching outcomes. Evidence from the wider work and organizational psychology literature was explored in order to formulate the model, as such, BIS/BAS and goal orientation were selected as appropriate explanatory theories based on the evidence demonstrating clear associations between personality, BIS/BAS, goal orientation and performance (i.e. Elliot & Thrash, 2002; Segarra et al., 2014). The test of the model in chapter six has provided some, albeit weak, support for BIS/BAS as an explanation of the influence of the coachees' personality on coaching outcomes. These findings may indicate that an alternative explanatory theory could provide a stronger explanation. One such alternative could be provided by self-efficacy theory.

Self-efficacy is defined as an agentic motivational orientation that fuels persistence in the face of difficulties, increases intentionality and long term planning and promotes self-regulation and self-correcting actions (Bandura, 2001). The concept of self-efficacy is grounded in social cognitive theory that asserts that human functioning is a product of an interplay of intrapersonal influences (of which self-efficacy is a constituent), the behaviour individuals engage in and the environmental forces that impinge upon them (Bandura, 2012). Bandura (2012) asserts that self-efficacy affects functioning through cognitive, motivational, affective and decisional processes, For example, individual's beliefs in their efficacy influence whether they think in a self-enabling or self-debilitating way. Self-efficacy influences how well people motivate themselves and subsequently persevere towards goal achievement in the face of difficulties. Self-efficacy also contributes to self-development and change through the options individual's consider and the choices they make. The literature provides strong support for Bandura's (2012) claims regarding the influence of self-efficacy on behaviour with evidence linking self-efficacy to motivation and performance (Bandura & Locke, 2003; Multon, Brown & Lent, 1991; Stajkovic & Luthans, 1998); leadership effectiveness (Hendricks & Payne, 2007); academic learning and performance (Bandura, 1997; Pajares, 1996; Pintrich, 1999); desire to learn (Lohman, 2006; van Daal, Donche & De Maeyer, 2014) and training performance (Colquitt, LePine & Noe, 2000; Gist, Schwoerer & Rosen, 1989; Goldstein & Ford, 2002; Stajkovic & Luthans, 1998; Tai, 2006; Tracy, Hinkin, Tannenbaum & Mathieu, 2001).

The concept of self-efficacy may be particularly useful in the context of the theory of individual differences and coaching outcomes as while personality theory provides a predictive tool for behaviour, it does not provide an adequate explanation of behaviour (Bandura, 2012; Barrick & Mount, 2005). Self-efficacy on the other hand, like BIS/BAS, provides the underlying explanation of behaviour that may help to explain the link between personality and coaching outcomes. For

example, personality traits have often been conceptualised as distal indicators of performance with self-efficacy and goal orientation conceptualised as proximal indicators of performance adopting either a mediating or moderating influence on outcomes (Barrick & Mount, 2005; Ford, Smith, Weissbein, Gully & Salas, 1998; Hendricks & Payne, 2007; Judge, Shaw, Jackson, Scott & Rich, 2007; Judge & Ilies, 2002; Kozlowski, Gully, Brown, Salas, Smith & Nason, 2001; Phillips & Gully, 1997; Tabernero & Wood, 1999; VandeWalle, Cron & Slocum, 2001).

In the context of coaching, in addition to the potential mediating or moderating influence self-efficacy has on personality and goal orientation, the coachee's self-efficacy is also likely to influence the coachee's beliefs regarding their ability to change their behaviour and achieve their coaching goals, potentially indicating a direct link between coachee self-efficacy and coaching outcomes. Also worth considering is the distinct influence of generalized and specific self-efficacy. While generalized self-efficacy may offer a potential explanation of the distal influence of personality on coaching outcomes, task-specific self-efficacy may also provide some useful explanation. Task-specific self-efficacy is an individual's belief in his or her capability to perform well on a task, given a specific set of situation demands (Bandura, 1982). The nature of the influence of general self-efficacy and task-specific self-efficacy on personality and goal orientation may vary. For example, general self-efficacy has been conceptualized as an antecedent of goal orientation and task-specific self-efficacy as an outcome of goal orientation (Payne, Youngcourt & Beaubien, 2007). In the context of coaching, task-specific self-efficacy is likely to vary with each new action or behaviour change that is explored during the coaching session.

The extant evidence indicates that the relationship between personality, goal orientation and self-efficacy (both general and task-specific) is complex and as yet not fully understood. However in the context of understanding and explaining the influence of coachee individual differences on coaching outcomes, the theory of self-efficacy may provide a suitable alternative to BIS/BAS which is worthy of exploration in future research.

**Implications for Practice**

At the start of this thesis, the case was proposed that the field of coaching can be described as 'faddish' and lacking in a firm evidence-base on which the practice should be guided. In addressing the main aims of this thesis of investigating whether workplace coaching is effective and building an understanding of the factors influencing effectiveness, there are clear practical implications for organizations and practitioners.

The meta-analysis in chapter four has demonstrated that coaching has a positive effect on all outcome criteria therefore providing an evidence base from which practitioners can draw confidence. The framework of outcomes provides organizations with a method of categorizing the types of outcomes that can be expected from coaching. These outcomes can then be applied when practitioners and organizations are evaluating coaching to examine the impact of coaching. The findings from the meta-analysis are also informative for decisions about using particular tools and coaching techniques. Although the results showed that overall, coaching appears to be effective irrespective of the format of the coaching, practitioners and organizations should consider carefully the use of multi-source feedback, and the engagement of external coaches, both of which resulted in smaller positive effects of coaching. If multi-source feedback is used, practitioners should review and apply evidence in the literature about the determinants of effective use of feedback. When engaging external coaches, organizations could ensure that a thorough familiarization process is undertaken to enable coaches to have a full and complete understanding of the organizational context of employee learning and performance.

The final study reported in chapter six, demonstrated that coaching can produce positive change in self-ratings of performance when implemented utilising the approach described in this thesis. This study sought to explore whether coaching was more or less impactful based on the coachee's individual differences. The findings demonstrated that there was a significant difference in outcomes based on the coachee's enthusiasm, intellect and orderliness.

It was hypothesised in chapter three and chapter six that individuals high in intellect are likely to benefit more from coaching as these individuals have the ability to understand hypothetical situations, engage in complex problem-solving, think quickly in order to provide examples in discussions and formulate and communicate their ideas articulately to the coach. Given, the conceptualisation of intellect and the nature of coaching as described in this thesis, it is not surprising that individuals high on intellect are able to benefit more from coaching and therefore show greater improvements in outcomes, a prediction supported by the findings reported in chapter six.

For orderliness, it was anticipated that the methodological, systematic and organized approach of highly orderly individuals would mean that they are able to manage their time more effectively and therefore be more likely to successfully complete actions following coaching, leading to

subsequent improvements in outcomes. The rule conscious nature of highly orderly individuals may also mean that they are more likely to stick to plans that are agreed with the coach and the high attention to detail may mean that they fastidiously follow through on these plans. These factors combined mean that highly orderly individuals are likely to benefit more from coaching, a prediction that was supported in the findings reported in chapter six.

Finally, it was predicted that individuals high on enthusiasm would benefit the most from coaching when compared to individuals low on enthusiasm, as their energetic and eager demeanour would mean that they are likely to embrace the coaching process and whole-heartedly engage with the coaching intervention. The sociable nature of highly enthusiastic individuals would mean that the high level of social interaction inherent in coaching, lends itself to the highly enthusiastic individual's preference for building relationships with others and engaging in social contact. Individuals high on enthusiasm may also feel more comfortable in disclosing personal information to the coach when compared to individuals low on enthusiasm. The results of study three indicate that highly enthusiastic individuals had higher scores on the outcome measures at time one, consistent with the literature on personality and performance, which has demonstrated that extraversion is positively associated with performance (e.g. Barrick & Mount, 1991; Huang et al., 2014; Hurtz & Donovan, 2000). The high enthusiasm group demonstrated an improvement in outcomes following coaching and scores remained higher at time three. However, on exploration of the mean scores, it was individuals low on enthusiasm who demonstrated the greatest mean change in outcomes between the time points. Although individuals low on enthusiasm did not manage to 'close the performance gap' with the high enthusiasm group, the coaching intervention appeared to help individuals low on enthusiasm to make significant gains in improving their performance. Therefore, although highly enthusiastic individuals may be predisposed to embrace coaching due to their disposition, individuals low on enthusiasm also appear to benefit significantly from coaching.

One potential reason for this finding is that individuals low in enthusiasm may have clearer developmental needs than individuals high in enthusiasm. If it is accepted that individuals high in facets of extraversion generally perform better at work, than it follows that individuals low in enthusiasm may have a greater need to engage in personal development in order to improve their performance. Consequently, although individuals low on enthusiasm may not be as immediately comfortable with the highly social nature of coaching, if the individuals low on enthusiasm hold high expectations regarding the ability of coaching to help them to achieve

their goals, then they may be likely to embrace coaching in a similar way to individuals high on enthusiasm, consequently leading to the significant gains in improvement in performance seen in study three. The suggestion that achievement related choices are influenced by expectations, is the premise of the Expectancy-Value model (Eccles et al., 1983; 1987; 2002) which posits that choices are assumed to be influenced by both negative and positive task characteristics, and all choices are assumed to have costs associated with them, as one choice eliminates other alternative options. Consequently, the relative value and probability of success of various options are key determinants of choice. In the context of the example detailed here, the individuals low on enthusiasm may choose to engage in coaching despite the potential lack of fit between the highly sociable nature of coaching and their desire to avoid highly sociable interactions. Therefore, the high value placed on professional development and high expectations in relation to anticipated success following coaching, may lead the individual low on enthusiasm to embrace coaching despite the initial lack of fit. Future research could explore this further by gathering an understanding of participants' expectations and values before commencing coaching.

The literature has demonstrated that individuals high on extraversion, high on openness, high on conscientiousness and low on neuroticism perform better at work (e.g. Barrick & Mount, 1991; Ones et al., 2007; Penney et al., 2011). Based on this literature a series of hypotheses were generated that predicted that the impact of coaching would be greater for individuals high on enthusiasm, assertiveness, orderliness, industriousness, intellect and low on withdrawal and volatility. The analysis demonstrated significant results for enthusiasm, orderliness and intellect as described above.

However, it is also worthwhile considering the non-significant results for the other traits. The interaction plots depicted in chapter six (Figures 6.5 to 6.10) indicate that for self-ratings of performance, performance scores were higher at time one for individuals low in volatility and withdrawal and high in enthusiasm, assertiveness, industriousness and intellect; in-line with the extant literature. Interestingly, a clear trend is evident in the interaction graphs that demonstrate a difference in the pattern of change across the three time points for these traits between the experimental and control group. Although not all of the findings were significant, individuals high in volatility and withdrawal and low in assertiveness and industriousness appear to experience improvements in performance scores following coaching that are much greater than the control group at the same time points. In essence, the low scorers (or high scorers for the facets of

neuroticism) appear to 'close the performance gap' with their high scoring counterparts (low for neuroticism). A potential reason for the lack of significant findings in relation to these changes is the small effect sizes observed. For the significant interactions for enthusiasm, orderliness and intellect, the effect sizes were small (partial $\eta^2$ ranging from .07 to .10). Small effect sizes are consistent with other research in this area, for example, Smither et al. (2003) found an effect size of $d = .17$ for improvements in performance following coaching, in their large coaching evaluation study with a sample of 1,361 participants. Therefore, it is possible that a significant interaction may have been identified in study three for the other traits if a larger sample had been utilised.

These findings highlight an important area for future research with clear practical implications. The interaction plots are suggesting that coaching may benefit all personality types in a more uniform way and actually help individuals whose personality traits mean that they are less likely to perform well at work, gain an advantage to counterbalance the personality-performance effect. Further research could explore these findings with a larger sample.

**Directions for Future Research**

This thesis has not engaged explicitly with an epistemological discussion of the methodology adopted in this research. The three studies described in this thesis have been firmly grounded in the positivist approach whereby genuine knowledge is viewed as knowledge confirmed by the senses; the purpose of theory is to generate hypotheses which can subsequently be tested in order to allow for theoretical explanation of phenomena; that knowledge is generated through the gathering of facts that provide the basis of laws and finally that research must be conducted in a way that is objective and value free (Bryman, 2004). The primary motivation for conducting this research from a positivist approach was in response to the existing research in the field of coaching and the wider learning and development literature and was specifically informed by the gaps in the coaching literature in relation to theoretically driven, quantitative data in order to understand whether coaching is effective, how coaching is measured and for whom coaching is most suited (Grant et al., 2010; MacKie, 2007; Smither, 2011). However, it is worthwhile to explore whether an alternative epistemological approach, such as critical realism, may offer fresh insights into these questions. Critical realism takes the view that the world is neither a machine nor just a sea of cultural meaning, but is an open system with emergent properties (Burgoyne, 2009). Burgoyne (2009) explains that the critical realist view is that reality consists of a number of potential underlying mechanisms, which can be, but are not necessarily activated,

depending on circumstance. Therefore in the context of future directions for coaching research, a critical realist perspective may seek to understand the mechanisms by which coachees perceive change to occur as a result of coaching.

In this research, a high level of scientific rigour was sought for all three of the empirical studies, therefore a control group was utilised in the intervention study, in addition to a longitudinal design in order to track any changes in outcomes over time and to compare these against a control group. The importance of adopting this type of design is highlighted in the findings in the organizational study detailed in chapter six. The results indicate that when comparing the others-ratings of performance over time there was a significant improvement for the experimental group. Figure 6.11 in chapter six shows how the others-ratings of performance increase across the three time points; however both groups improved in others-ratings of performance in a similar way, therefore the change in others-ratings of performance cannot be attributed to the coaching intervention.  Based on this finding, it is questionable whether significant findings detailed by other coaching research utilising a within-subjects design would still find a significant result if a control group had been utilised. For example, Toegel and Nicholson (2005) and Luthans and Peterson (2003) both utilise others-ratings of performance before and after coaching. Both studies found a significant improvement in others-ratings of performance which was attributed to the coaching intervention. It is impossible to tell whether these changes in others-ratings of performance would have happened anyway, despite the coaching intervention. A future research direction is to ensure that all coaching evaluation studies utilise a control group as has been utilised in this thesis. Without a control group, there is the danger that researchers will make a Type I error and conclude that the coaching intervention has had a positive impact when in fact the changes in outcomes would have happened anyway.

To extend this recommendation even further, a limitation of the research presented in study three was the potential confounding influence of the placebo effect on the findings. Future research should seek to address this limitation by isolating the influence of the coaching intervention and any potential placebo effect. This is a challenging scenario that learning and development researchers face, however could potentially be addressed in a couple of ways. Firstly, by using a sample that has not self-selected onto the research project, therefore prior expectations and hopes may not be inflated in relation to the anticipated impact of coaching. Secondly, utilising a third 'blind control' where participants in this group have no knowledge of

the coaching intervention at all. Adoption of either of these methodological approaches may help to eliminate the potential influence of the placebo effect.

A further suggestion for future research is the need to develop more sophisticated tools to measure coaching outcomes. The discussion on outcomes presented in chapter two and the coding of studies into the framework of outcomes in the meta-analysis in chapter four highlighted that a significant gap in the literature is the use of cognitive outcomes in coaching research. Lord and Maher (1991) state that an important goal of cognitive science is to understand how people function and Kraiger et al. (1993) discuss how in relation to learning evaluation, adopting a cognitive perspective can increase understanding of the dynamic processes of knowledge acquisition, organization and application. It has been argued in this thesis that coaching is unlikely to lead to the acquisition of new knowledge in the same way that other forms of learning and development might (such as instructional training), however coaching is likely to lead to the development of new mental models and problem solving strategies. Changes at the cognitive outcome level may be observed by the coachee however it is unlikely that others would notice any change at this level. This could be one of the reasons why coachees generally report a positive impact from coaching (i.e. they are aware they are utilising new problem solving strategies) however these cognitive outcomes are not so easily detected by others. Future research could seek to develop cognitive outcome measures for coaching. These may take guidance from the suggestions provided by Kraiger et al. (1993) in relation to cognitive outcome measures for training. For example, by using some modal techniques to assess changes in knowledge organization strategies, whereby participants are asked to make judgements of similarity or closeness among a previously defined set of core elements. These elements are then mapped out by participants by physically arranging them in a free-sort task (e.g. Champagne, Klopfer, Desena & Squires, 1981). Alternatively, participant's cognitive outcomes from coaching could be measured using a probed protocol analysis to assess participants understanding of their task behaviour relative to a goal (e.g. Glaser, Lesgold & Gott, 1986; Means & Gott, 1988). Probed protocol analysis involves asking participants to define in detail the steps necessary to solve a problem with participants being probed in detail about why they would take each step.

A challenge in developing cognitive outcome measurement tools for coaching is that the tools would involve a larger degree of tailoring for each participant due to the unique learning that is likely to take place for each individual coachee. This is potentially one reason why no studies

could be identified that measured coaching at the cognitive outcome method. While developing outcome measures that can be tailored in order to ensure that they adequately measure the unique learning from each coachee is not necessarily a simple task, it may be important if an accurate measure of coaching outcomes is to be achieved. In chapter two, when defining coaching, it was argued that the unique, individualised nature of coaching is probably one of the greatest advantages coaching has over more generalised 'one-size-fits-all' training. If it is accepted that the unique, tailored approach is key to all coaching then it follows that it cannot be expected that by utilising generalised 'one-size-fits-all' methods of outcome measurement are going to achieve an accurate understanding of coaching outcomes in the same way that they will achieve an accurate understanding of training outcomes. Therefore future research could address this task of developing a toolbox of coaching evaluation methods and techniques that specifically tap into the unique changes coaching is likely to produce.

Chapter five presented the pilot study which started the process in developing a theoretically derived, reliable and valid scale for measuring perceived coaching effectiveness. Future research should seek to extend this study and administer the full list of scale items to multiple, independent, large samples in order to conduct further iterations of exploratory factor analysis and assess the factor structure utilising confirmatory factor analysis on an independent sample. Furthermore, convergent and divergent validity should be explored more comprehensively in future samples utilising Fornell and Larcker's (1981) approach described in chapter five. Finally, discriminant validity could be established by administering the scale alongside independent scales assessing similar constructs.

A primary aim of this research was to start to understand the factors that explain why coaching works. To address this, a theoretical model of coaching processes, practice factors and proposed coaching outcomes was developed in chapter three. In the empirical studies in this thesis, the practice factors and coaching outcomes were examined in the meta-analysis reported in chapter four. The coaching processes (goal setting, experiential learning and psychological fidelity) were kept constant during the intervention study in chapters six and incorporated into the coaching approach, however they were not directly tested. Future research could seek to explore these coaching processes further by isolating and testing the importance of each of the three elements discussed. The proposed theory presented in this thesis of processes of coaching has made an important contribution by integrating the existing literatures on learning and development and applying these to the coaching context, the next step to

continue to develop an understanding of how coaching works is to test and further refine this theory.

In addition to attempting to understand how coaching works, this thesis also aimed to address the question 'for whom is coaching most suited'. The evidence detailed in chapter six suggests that a coachee's enthusiasm, intellect and orderliness is likely to predict how impactful coaching will be on outcomes, although interesting trends were also identified in the non-significant findings. This thesis has offered an initial exploration of an under researched area and has provided a theoretical explanation and empirical evidence to suggest that the individual differences of the coaching are linked to coaching outcomes and provides some initial evidence of the underlying mediating relationships that explain the link between coachees personality and coaching outcomes. The test of the theoretical model identified that BAS drive, performance approach and mastery goal orientation appear to be important mediating influences on personality and coaching outcomes. Earlier in this chapter, the limitations of this model were highlighted in relation to the absence of any significant mediation for BAS reward, BAS fun-seeking and BIS. These limitations were discussed in the context of a potential alternative theoretical framework that may offer greater explanatory power in understanding the influence of the coachee personality and coaching outcomes. Self-efficacy theory was proposed as one alternative theory. Further research should seek to explore the potential relationship between coachee personality, self-efficacy and goal orientation in order to understand whether this offers a superior theoretical framework than the BIS/BAS framework proposed and examined in this thesis. More generally, it is essential that the findings of study three are explored in other contexts to see whether the findings can be replicated. In particular, research utilising a large sample may help to identify small, yet important effect sizes not identified here. Once this has been achieved, greater confidence can be given to the use of individual differences as a potential method for assessing whom coaching may or may not be a suitable development tool for.

**Summary of Study Limitations**

No research is without limitation and the studies presented in this thesis are no exception. The specific limitations of each study were explored in detail in the study chapters (detailed in chapters four, five and six). These limitations will be summarized next with a number of these limitations returned to later in this chapter during the discussion of implications for future research.

The primary concerns with the first study were with respect to the coding of data and the number of studies meeting the inclusion criteria for the meta-analysis. With respect to the coding of data, due to incomplete reporting of sample characteristics and coaching variables, a number of the coded variables had to be listed as either unspecified or were estimated. Although such estimation of means is consistent with recommendations for handling missing data (e.g. Hunter & Schmidt, 1990), such replacements are less satisfactory than reported data. Secondly, the meta-analysis included a relatively small number of studies. Whilst the number of studies included in the analyses is similar to other meta-analyses in the wider field of work and organizational psychology (e.g. Riketta, 2008), some caution is warranted in interpreting and generalizing from the results.

There were several significant limitations with the second study, reflecting the pilot nature of this study. Firstly, whilst the initial aim was to approach the scale development from a deductive start point, the focus on the underlying theory was quickly lost during the various stages of scale development at which point the development became heavily data driven. This approach is not ideal, as there is a danger that the content of the scale could drift into unintended domains (DeVellis, 2012). Secondly, the number of participants in the scale administration stage fell significantly short of the 5:1 ration recommended in the literature (e.g. Bryant & Yarnold, 1995; MacCallum et al., 1999). Thirdly, best practice recommendations suggest that independent samples should be utilised for each iteration of exploratory and confirmatory factor analysis (Hinkin, 1998) as opposed to the single sample utilised in this study. Finally, the exploration of convergent and divergent validity could be considered very light, with best practice recommendations suggesting a more comprehensive analysis utilising Fornell and Larcker's (1981) average variance extracted analysis as a minimum.

Finally, there were a number of noteworthy methodological and theoretical limitations with study three. For example, changes in outcomes were observed for both the experimental and control group. The changes in outcomes for the control group were discussed in chapter six in the context of a potential placebo effect. However, it is not possible to discount the potential influence of the placebo effect on the outcomes for the experimental group. Therefore, even with the presence of a control group, it is still not possible to confidently conclude that any changes in the experimental group were due to the coaching intervention and not due to some other influencing variable, such as a placebo effect.

A further methodological limitation of study three is regarding sampling. The number of participants in this study was smaller than desired due to attrition and also time constraints in administering the intervention. The consequence of the reduced sample is that small, yet significant effects of the intervention may not have been detected due to insufficient statistical power in the analysis. A further sampling limitation is the self-selecting sample. It is possible that only participants who perceived that the coaching would have a positive impact and would therefore be a worthwhile investment of their time may have volunteered to participate in the study, consequently increasing the likelihood of the potential influence of the placebo effect discussed above.

A further concern is regarding the outcome measures utilised in study three. Study three utilised others-ratings of performance as one of the outcome measures. No significant effects were found for this outcome however these results were explored in the context of the potential unreliability of others-ratings of performance more generally as a measure of performance. Secondly, with regards to the outcome measures, it was not possible to measure the impact of the coaching intervention at an objective, results-based level. From an evidence-based perspective, obtaining objective, results driven data of coaching impact would have been a highly desirable outcome for this project.

Finally, a key theoretical limitation of this study was with the low explanatory power of the theoretical model of individual differences and coaching outcomes. This framework proposed that the influence of coachee individual differences on coaching outcomes could be explained by the mediating role of BIS/BAS and goal orientation however the results demonstrated that only BAS drive was a significant mediator. The lack of significant mediation for BAS reward, BAS fun-seeking and BIS could suggest that an alternative theoretical framework may provide a superior explanation. This point is expanded further in the next section.

**Conclusion**

Three core aims, intended to make contributions to theory, research and the practice of coaching were posited at the start of this thesis. Each of these aims will briefly be discussed in the light of the findings of this thesis.

The first aim was to conduct a robust, systematic review of the literature in order to establish the effectiveness of coaching at work. The meta-analysis presented in chapter four has directly addressed this aim and provided important evidence that illustrates that coaching has a positive impact on a range of workplace outcomes. The second aim was to develop a conceptually derived, reliable scale for measuring coaching outcomes. The scale developed and tested in chapter five address this aim by providing a step in the right direction of developing a scale which is scientifically robust and a practically useful tool for measuring coaching outcomes. The final aim of this thesis was to examine the effects of individual differences on coaching outcomes. Chapter six provides the results of the intervention study that address this aim. The results indicate that an understanding of the coachee's individual differences can help to predict coaching outcomes and furthermore, this thesis has presented evidence that indicates the significant mediating influence of BAS drive, performance approach and mastery goal orientation that may explain the link between individual differences and coaching outcomes.

In conclusion, this thesis has, when considered in its entirety, provided evidence that coaching has a positive impact on outcomes. The thesis has provided recommendations as to how to measure coaching outcomes with the framework of outcomes and begun to develop a tool to measure coaching outcomes. Finally, this thesis has proposed and tested a theoretical model of individual differences in the effectiveness of coaching for different coachees, which has begun to answer important questions about the pathways from individual attributes to the positive outcomes of coaching; that is, why people respond differently to workplace coaching. In a nascent field such as coaching, which has generally been considered as non-empirical and non-theoretical, these are valuable contributions that may help take coaching research one step closer to transitioning to a body of research that is empirical in nature and theoretically based.

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# APPENDICES

## APPENDIX A – List of 147 scale items developed during stage 2a of scale development

### Affective

1. I feel more satisfied in my job
2. I feel happier at work
3. I feel less stressed at work
4. I will stay working for my organisation for a longer period of time
5. I believe that I could now achieve a higher level of promotion in my organisation
6. I feel less nervous or anxious than before
7. I feel more in control when things go wrong
8. I feel more resilient when dealing with difficult clients
9. I feel more positive in my own capabilities
10. I feel more aware of my own thinking and its impact
11. I am more effective at controlling my own emotional state or mood
12. I am more motivated
13. I feel happier in my role
14. I enjoy my job more
15. I have greater clarity regarding my contribution to the organisation
16. I feel less frustrated
17. I feel more engaged
18. I have better direction
19. I have developed a 'can do' attitude
20. I feel more willing to try hard at work
21. I feel more positive towards my colleagues
22. I feel more positive towards my organisation
23. I now recognise what motivates me
24. I am now more self-aware
25. I can clarify my priorities
26. I have clarified my long term goals and ambitions
27. I have identified my career path
28. It has provided me with confidence in my actions

29. Coaching has enabled me to be more empathetic with my customers

30. I feel greater confidence in my decisions

31. It has helped me to assess my values at work

32. It has helped me to reaffirm my values at work

33. Generated new interests and insights

34. Improved self-belief

35. I have a more positive attitude towards work

36. I have a more positive attitude towards my career

37. I am able to see the bigger picture

38. Coaching has made me more focused on my intentions

39. Coaching has made me focus more clearly on what I want out of life

40. Coaching has improved my appreciation for my strengths

41. Coaching has helped me understand how I approach my goals

42. It has given me insight into my impact

43. I have the confidence to deliver my role competently

44. I have improved feelings of self-worth

45. I have a positive, productive attitude

46. View things in a more positive way

**Skill-based**

1. I am now a more effective leader
2. I am able to delegate more effectively
3. I am a better manager
4. I am a better listener
5. I am more effective at setting strategic direction/strategic priorities
6. I have better people management skills
7. I am able to get the best out of people
8. I am better able to set a vision
9. I am better able to inspire others
10. I am more autonomous
11. I demonstrate leadership more frequently
12. I take more responsibility for projects
13. I am more focused on my goals

14. I set clearer objectives for my direct reports

15. I am clearer about my objectives for my team

16. I am able to focus my team on what is important

17. I am able to stretch my team

18. Coaching has changed how I approach and interact with various stakeholders

19. I am more flexible in how I deal with others

20. I am more understanding of others needs and working styles

21. I can generate more solutions and alternatives to problems

22. I am better able to understand others

23. I am more flexible in the way I work to meet organisational objectives

24. I am more creative in solving problems

25. I am more efficient

26. I am more organised

27. I am able to manage my administration more effectively

28. I am able to prioritise more effectively

29. I know at what point to stop working on something

30. I communicate more effectively

31. I contribute more frequently in meetings

32. Share ideas more readily

33. Coaching has improved the way that I deal with senior management

34. I act in a more professional manner

35. I have more understanding of the motivations of others

36. I engage in increased constructive reflection

37. Adopted a more proactive than reactive approach to work

38. I now take control of issues at work

39. Coaching has allowed me to better manage my work/life balance

40. Coaching has enabled me to engage with a wider range of stakeholders

41. I became more like a leader and less like a follower

42. Coaching reenergised my coaching skills with my team

43. I have become more consultative than directive

44. I am able to plan more effectively

45. I am able to balance the needs of individuals whilst maintaining organisational goals

46. I behave more assertively

47. I am more tenacious

48. My communication and ability to motivate the team to achieve has improved

49. My body language has improved

50. I use more positive and descriptive language

51. I behave more positively in stressful situations


**Individual Results**


1. I have met more of my targets as a result of my coaching
2. I have been awarded a higher grade in my annual appraisal because of my coaching
3. I have received improved scores in a 360 feedback following coaching
4. My team perceive me to be a more effective manager as a result of coaching.
5. My coaching has resulted in a reduction in errors/ mistakes
6. I have greater accuracy with tasks
7. I have better relationships with clients
8. I have gained more positive feedback from others (clients/senior managers/peers etc)
9. I am able to meet deadlines more effectively
10. I have achieved my goals as a result of coaching
11. Because of coaching I have increased profitability because I engage with other people more effectively
12. I have consistently achieved all my competencies and objectives
13. I have exceeded some of my objectives
14. I now meet deadlines because of coaching
15. I work in line with good practice
16. I work in line with policy and procedure
17. I interact better within my team
18. I have increased credibility with clients and colleagues

**Team Results**


1. My team works together more effectively
2. My team mirror my feedback technique and therefore are giving more constructive feedback to others
3. My direct reports have achieved a promotion or improved annual appraisal ratings as a result my coaching

4. My team have achieved more of their team level goals as a result of my coaching
5. My team are reporting higher levels satisfaction and motivation as a result of my coaching
6. My direct reports are more focused on their own goals
7. My team collaborates more
8. My team receives more positive feedback from others regarding their performance
9. My team delivers better results
10. My team has been able to contribute more effectively to the organisations performance.
11. My team is more cohesive
12. My team delivers higher quality work
13. My team works at a more consistent level
14. My team meets more deadlines

**Organisational results**

1. My coaching has led me to have had a greater impact on the organisations financial performance.
2. The coaching has resulted in reduced staff turnover/greater retention of staff
3. Coaching has helped me to achieve organisational level goals.
4. Coaching helps me to develop the business at a faster pace
5. Coaching helps me to be make the most out of new business opportunities
6. My coaching led me to support others to generate more business
7. My coaching led our organisation to develop its human capital
8. My coaching helped develop an organisation culture to encourage coaching and provide open feedback.
9. My coaching has had a positive impact on the way my organisation is perceived by others
10. Customer satisfaction has improved
11. Staff morale has improved
12. Absences have decreased
13. There has been an increase in productivity
14. I have generated additional financial savings
15. I work more efficiently, saving the organisation money

16. I have helped to develop a developmental culture within the organisation

17. The workforce is happier

18. I am able to attract better quality, new staff because of my coaching

**APPENDIX B – List of 110 scale items developed during stage 2b of scale development**

**Affective**

1.  I feel more satisfied in my job
2.  I feel happier at work
3.  I feel less stressed at work
4.  I believe that I could now achieve a higher level of promotion in my organisation
5.  I feel less nervous or anxious than before
6.  I feel more in control when things go wrong
7.  I feel more resilient when dealing with difficult clients
8.  I feel more positive in my own capabilities
9.  I feel more aware of my own thinking and its impact
10. I am more motivated
11. I feel happier in my role
12. I enjoy my job more
13. I feel less frustrated
14. I feel more engaged
15. I have developed a 'can do' attitude
16. I feel more willing to try hard at work
17. I feel more positive towards my colleagues
18. I feel more positive towards my organisation
19. I can now clarify my priorities
20. I have greater confidence in my actions
21. I feel greater confidence in my decisions
22. It has helped me to assess my values at work
23. It has helped me to reaffirm my values at work
24. Coaching has prompted me to have new interests and insights in my work
25. I have improved self belief
26. I have a more positive attitude towards work
27. I have a more positive attitude towards my career
28. I am able to see the bigger picture
29. Coaching has made me more focused on my intentions
30. Coaching has made me focus more clearly on what I want out of life

31. Coaching has improved my appreciation for my strengths

32. Coaching has helped me understand how I approach my goals

33. It has given me insight into my impact at work

34. I have the confidence to deliver my role competently

35. I have improved feelings of self worth

36. I now have a positive, productive attitude

**Skill-based**

1. I am able to delegate more effectively
2. I am a better manager
3. I am a better listener
4. I have better people management skills
5. I am better able to set a vision
6. I am better able to inspire others
7. I demonstrate leadership more frequently
8. I take more responsibility for projects
9. I am more focused on my goals
10. The way I now manage my team stretches them to achieve more
11. Coaching has changed how I approach and interact with various stakeholders
12. I am more flexible in how I deal with others
13. My management style reflects that I am now more understanding of others needs and working styles
14. I can generate more solutions and alternatives to problems
15. I am more flexible in the way I work to meet organisational objectives
16. I am more organised
17. I am able to prioritise more effectively
18. I communicate more effectively
19. I now contribute more frequently in meetings
20. Coaching has improved the way that I deal with senior management
21. I act in a more professional manner
22. I now engage in increased constructive reflection
23. I have adopted a more proactive than reactive approach to work
24. I now take control of issues at work

25. Coaching has allowed me to better manage my work/life balance

26. I have become more consultative than directive

27. I am able to plan more effectively

28. I behave more assertively

29. I am more tenacious

30. My body language has improved

31. I use more positive and descriptive language

32. I behave more positively in stressful situations

33. I now work in line with policy and procedure

**Individual Results**

1. I am able to manage my administration more effectively

2. I have met more of my targets as a result of my coaching

3. I have been awarded a higher grade in my annual appraisal because of my coaching

4. I have received improved scores in a 360 feedback following coaching

5. I have greater accuracy with tasks

6. I have better relationships with clients

7. I have gained more positive feedback from others (clients/senior managers/peers etc)

8. I am able to meet deadlines more effectively

9. I have achieved my goals as a result of coaching

10. Because of coaching I have increased profitability because I engage with other people more effectively

11. I have consistently achieved all my competencies and objectives

12. I have exceeded some of my objectives

13. I now meet deadlines because of coaching

14. I have increased credibility with clients and colleagues

15. I have generated additional financial savings

**Team Results**

1. My team works together more effectively

2. My team mirror my feedback technique and therefore are giving more constructive feedback to others

3. My direct reports have achieved a promotion or improved annual appraisal ratings as a result my coaching
4. My team have achieved more of their team level goals as a result of my coaching
5. My team are reporting higher levels satisfaction and motivation as a result of my coaching
6. My direct reports are more focused on their own goals
7. My team collaborates more
8. My team receives more positive feedback from others regarding their performance
9. My team delivers better results
10. My team has been able to contribute more effectively to the organisations performance.
11. My team is more cohesive
12. My team delivers higher quality work
13. My team works at a more consistent level
14. My team meets more deadlines

## Organisational Results

1. My coaching has led me to have had a greater impact on the organisations financial performance.
2. The coaching has resulted in reduced staff turnover/greater retention of staff in the organisation
3. Coaching has helped me to achieve organisational level goals.
4. My coaching led our organisation to develop its human capital
5. My coaching helped develop an organisation culture to encourage coaching and provide open feedback.
6. My coaching has had a positive impact on the way my organisation is perceived by others
7. Customer satisfaction has improved
8. Staff absences have decreased
9. There has been an increase in productivity
10. I work more efficiently, saving the organisation money
11. I have helped to develop a developmental culture within the organisation
12. The workforce is happier

**APPENDIX C – Questionnaire – Coachee Participants**

**Introductory E-mail**

Dear

Thank you for agreeing to take part in the Coaching research project.

The first stage of the project is completion of a survey which will form the base line measure of the project. Your performance can then be compared against this after the coaching has been completed. The survey should take around 25 minutes to complete. Please ensure that you are somewhere quiet and free from disturbances before you start the survey. This survey needs to be completed by **Date**. The link to this survey will be sent in a separate email.

I also need you to email me the name and email address of one peer, one direct report and your supervisor so that they can be emailed a short survey in which they will be required to rate your performance. Could you please confirm in your email which contact is the peer, which is the supervisor and which is the direct report so that I can make a record of this. I will also need these completed surveys by the **Date** so I would be grateful if you could email me the names as soon as possible.

Once all surveys have been completed (yours and the feedback), I will email you to arrange your first coaching session.

If you have any questions, please do not hesitate to contact me.

Regards,

Rebecca Jones
Doctoral Researcher
Work & Organisational Psychology Group
Aston Business School

# Consent Form

Thank you for agreeing to take part in my research. The present study is one in a series of experiments that make up my doctoral research. This study is designed to examine how effective coaching is on a variety of outcomes.

Participation in the study will consist of two main activities. The first is the completion of a series of questionnaires. You will be required to complete these questionnaires at two time points – before and after the coaching. In addition to completing the questionnaires about yourself, you will be required to nominate your supervisor; a direct report and a peer to complete a confidential questionnaire regarding your performance at work, again - before and after the coaching.

Secondly, you will receive four, one hour coaching sessions, spread over a maximum of 12 months. These sessions will be conducted by telephone.

All information you provide will be kept strictly confidential. The content of the coaching sessions is confidential. They will not be recorded and any notes made will be stored confidentially and will only be for the purpose of facilitating the coaching sessions. Only I will have access to the data and you will not be able to be identified from any responses you provide. All data you provide will be stored securely after this session. Electronic data will be kept on password protected servers for a maximum of 5 years before deletion. Hardcopy data will be kept in a locked filing cabinet for 2 years and then destroyed.

Participation in this study is entirely voluntary. As such, refusal to participate involves no penalty or loss of benefits to which you are otherwise entitled. You reserve the right to withdraw at any time without needing to provide a reason for doing so and you reserve the right to refuse to answer any question asked. This includes any period subsequent to the experiment itself. If you decide at any point in the future that you no longer wish to participate, please contact me and I will delete all your data without any question or penalty to you.

☐ I have read and agree to all the above.

Further Information

If you would like to know more about the present study, your rights as a research participant or details of my research in general, please do not hesitate to contact me at the address below:

Rebecca Jones

Work & Organisational Psychology Group,

Aston University,

Aston Triangle,

Birmingham.  B4 7ET.

jonesrj2@aston.ac.uk

**Personality Questionnaire**

Please read the following statements and describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence.

Indicate for each statement how accurate it is as a description of you:

*1. Very Inaccurate*

*2. Moderately Inaccurate*

*3. Neither Accurate Nor Inaccurate*

*4. Moderately Accurate*

*5. Very Accurate*

Questions:

1. Get angry easily
2. Am not interested in other people's problems
3. Carry out my plans
4. Make friends easily
5. Am quick to understand things
6. Seldom feel blue
7. Respect authority

8.      Leave my belongings around

9.      Take charge

10.     Enjoy the beauty of nature

11.     Rarely get irritated

12.     Feel others' emotion

13.     Waste my time

14.     Am hard to get to know

15.     Have difficulty understanding abstract ideas

16.     Am filed with doubts about things

17.     Insult people

18.     Like order

19.     Have a strong personality

20.     Believe in the importance of art

21.     Get upset easily

22.     Inquire about others' well-being

23.     Find it difficult to get down to work

24.     Keep others at a distance

25.     Can handle a lot of information

26.     Feel comfortable with myself

27.     Hate to seem pushy

28.     Keep things tidy

29.     Lack the talent for influencing people

30.     Love to reflect on things

31.     Keep my emotions under control

32.     Can't be bothered with other's needs

33.     Mess things up

34.     Reveal little about myself

35.     Like to solve complex problems

36.     Feel threatened easily

37.     Believe that I am better than others

38.     Follow a schedule

39.     Know how to captivate people

40.     Get deeply immersed in music

41.     Change my mood a lot

42. Sympathize with others' feelings

43. Finish what I start

44. Warm up quickly to others

45. Avoid philosophical discussions

46. Rarely feel depressed

47. Avoid imposing my will on others

48. Am not bothered by messy people

49. Wait for others to lead the way

50. Do not like poetry

51. Rarely lose my composure

52. Am indifferent to the feelings of others

53. Don't put my mind on the task at hand

54. Rarely get caught up in the excitement

55. Avoid difficult reading material

56. Worry about thinks

57. Rarely put people under pressure

58. Want everything to be "just right"

59. See myself as a good leader

60. See beauty in things that others might not notice

61. Am a person whose moods go up and down easily

62. Take no time for others

63. Get things done quickly

64. Am not a very enthusiastic person

65. Have a rich vocabulary

66. Am easily discouraged

67. Take advantage of others

68. Am not bothered about disorder

69. Can talk others into doing things

70. Need a creative outlet

71. Am not easily annoyed

72. Take an interest in other people's lives

73. Always know what I am doing

74. Show my feelings when I'm happy

75. Think quickly

76.   Am not embarrassed easily

77.   Seek conflict

78.   Dislike routine

79.   Hold back my opinions

80.   Seldom get lost in thought

81.   Get easily agitated

82.   Don't have a soft side

83.   Postpone decisions

84.   Have a lot of fun

85.   Learn things slowly

86.   Become overwhelmed by events

87.   Love a good fight

88.   See that rules are observed

89.   Am the first to act

90.   Seldom daydream

91.   Can be stirred up easily

92.   Like to do things with others

93.   Am easily distracted

94.   Laugh a lot

95.   Formulate ideas clearly

96.   Am afraid of many things

97.   Am out for my own personal gain

98.   Want every detail taken care of

99.   Do not have an assertive personality

100.   Seldom notice the emotional aspects of paintings and pictures

**Self-ratings of performance**

Please rate yourself on a scale of:

*1= outstanding*

*2 = good*

*3 = average*

*4 = poor*

On the following items

1. Partnership/Teamwork
2. Client skill/Customer focus
3. Technical skills
4. Responsiveness/dependability
5. Judgment/Decision making
6. Management
7. Leadership
8. Quickly assesses the "big picture" in complex situations and identifies what is critical
9. Recognizes patterns and connections in information from different sources and their business implications
10. Creates simple, compelling messages and a few key priorities that guide and focus the efforts of others
11. Simplifies complex projects or situations by focusing on key issues, activities and goals.
12. Delegates detailed overview and responsibility to those with the necessary skills and information.
13. Provides clear goals, written performance appraisals and follow-up discussions annually.
14. Provides coaching and feedback to improve performance.
15. Negotiates realistic resources to achieve results.
16. Respectfully confronts problematic behaviour
17. Encourages and is open to feedback and coaching from others
18. Stands firm in the face of opposition/disagreement from influential others when appropriate.
19. Makes tough choices and decisions in a timely fashion.
20. Invests time and resources to enhance the effectiveness of management team.
21. Responds to others' needs to balance personal and work demands.
22. Seeks out and listens to customers' and colleagues' views to establish their concerns.
23. Involves those who are directly affected by decisions in the decision-making process.

24. Gains cooperation by explicitly addressing others' interests and concerns.
25. Accurately assesses the impact of own behaviour and decisions on others.
26. Accurately identifies own strengths and weaknesses and works to overcome weaknesses.
27. Treats people respectfully regardless of personal views, disagreements, or level.
28. Likes calculated risks needed to achieve results.
29. Demonstrates technical expertise to resolve business issues.
30. Maintains composure and positive attitude during stressful situations.
31. Proactively seeks new experiences and knowledge.
32. Quickly adjusts in response to changing situations.
33. Looks for ways to do things better, faster and more cost efficient.
34. Shows by his or her actions a strong commitment to diversity.
35. Overall rating

**Goal Orientation Questionnaire**

Please indicate the extent to which you believe the following statements to be true of yourself:

*1 = strongly disagree*
*2 = disagree*
*3 = slightly disagree*
*4 = neither agree nor disagree*
*5 = slightly agree*
*6 = agree*
*7 = strongly agree*

1. It is important to me to do better than the other employees.
2. I want to learn as much as possible in my current role.
3. I often think to myself, "What if I do badly at work?"
4. My goal is to perform better than most of the other employees.
5. It is important for me to understand everything about my job as thoroughly as possible.
6. I worry about the possibility of getting a bad performance appraisal at work.
7. I am striving to demonstrate my ability relative to others.

8. I hope to gain a broader and deeper knowledge in my field.

9. My fear of performing poorly at work is often what motivates me.

10. I am motivated by the thought of outperforming my peers.

11. I desire to completely master my job.

12. I just want to avoid doing poorly at work.

13. It is important to me to do well compared to others.

14. I prefer working in areas that arouses my curiosity, even if it is difficult to learn.

15. I'm afraid that if I ask a "dumb" question, my colleagues or supervisor might not think I'm very smart.

16. I want to do well at work to show my ability to my family, friends, colleagues, or others.

17. I prefer to work in situations that really challenge me so I can learn new things.

18. I wish that we did not have a performance appraisal.


**Approach/Avoidance Motivation Questionnaire**

Please review the following statements and indicate how accurately this statement describes you.

*1 = strongly agree*

*2 = agree*

*3 = disagree*

*4 = strongly disagree*

1. If I think something unpleasant is going to happen I usually get pretty "worked up."

2. When I get something I want, I feel excited and energized.

3. When I want something, I usually go all-out to get it.

4. 1 will often do things for no other reason than that they might be fun.

5. I worry about making mistakes.

6. When I'm doing well at something, I love to keep at it.

7. I go out of my way to get things I want.

8. I crave excitement and new sensations.

9. Criticism or scolding hurts me quite a bit.

10.     When good things happen to me, it affects me strongly.

11.     If I see a chance to get something I want, I move on it right away.

12.     I'm always willing to try something new if I think it will be fun.

13.     I feel pretty worried or upset when I think or know somebody is angry at me.

14.     It would excite me to win a contest.

15.     When I go after something I use a "no holds barred" approach.

16.     I often act on the spur of the moment.

17.     Even if something bad is about to happen to me, I rarely experience fear or nervousness.

18.     When I see an opportunity for something I like, I get excited right away.

19.     I feel worried when I think I have done poorly at something.

20.     I have very few fears compared to my friends.


**Job Satisfaction Questionnaire**

The following set of items deals with various aspects of your job. I would like you to tell me how satisfied or dissatisfied you feel with each of these features of your present job with the following scale:

*1. I'm extremely dissatisfied*

*2. I'm very dissatisfied*

*3. I'm moderately dissatisfied*

*4. I'm not sure*

*5. I'm moderately satisfied*

*6. I'm very satisfied*

*7. I'm extremely satisfied*

Questions:

1. The physical work conditions

2. The freedom to choose your own method of working

3. Your fellow workers

4. The recognition you get for good work

5. Your immediate boss

6. The amount of responsibility you are given

7. Your rate of pay

8. Your opportunity to use your abilities

9. Industrial relations between management and workers in your firm

10. Your chance of promotion

11. The way your firm is managed

12. The attention paid to suggestions you make

13. Your hours of work

14. The amount of variety in your job

15. Your job security

## Organisational Commitment Questionnaire

Listed below are a series of statements that represent possible feelings that individuals might have about the company or organization for which they work. With respect to your own feelings about (company name), please indicate the degree of your agreement or disagreement with each statement:

*1 = strongly disagree*

*2 = moderately disagree*

*3 = slightly disagree*

*4 = neither disagree nor agree*

*5 = slightly agree*

*6 = moderately agree*

*7 = strongly agree.*

Questions:

1.      I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful.

2.      I talk up this organization to my friends as a great organization to work for.

3.      I would accept almost any type of job assignment in order to keep working for this organization.

4.      I find that my values and the organization's values are very similar.

5.      I am proud to tell others that I am part of this organization.

6.      This organization really inspires the very best in me in the way of job performance.

7.      I am extremely glad that I chose this organization to work for over others I was considering at the time I joined.

8.      I really care about the fate of this organization.

9.      For me this is the best of all possible organizations for which to work.

**Demographics Questionnaire**

What is your gender?      MALE / FEMALE

What is your age in years?      _____YEARS

Please indicate your ethnic origin by choosing one option from the table below (please tick):

| Ethnic Origin | Tick (□) | Ethnic Origin | Tick (□) |
|---|---|---|---|
| White | | Indian | |
| Irish Traveller | | Pakistani | |
| Mixed – White and Black Caribbean | | Bangladeshi | |
| Mixed – White and Black African | | African | |
| Mixed – White and Asian | | Caribbean | |
| Chinese | | Arab | |
| Any other White background (*please specify*)........................................................ | | | |
| Any other Mixed Ethnic background (*please specify*)............................................. | | | |
| Any other Asian background (*please specify*)........................................................ | | | |
| Any other Black/African/Caribbean background (*please specify*).............................. | | | |
| Any other Ethnic Group (*please specify*).............................................................. | | | |

What is the highest level of academic qualification you hold? (Tick one):

| Highest Level of Education | Tick (□) |
|---|---|
| No schooling or schooling with no formal qualifications | |
| Middle School, GCSEs, O-levels or equivalent | |
| Some further education (high school, A-levels) | |
| High School, A-levels or equivalent | |
| Some University | |

| | |
|---|---|
| First Degree | |
| Postgraduate Degree | |

How long have you worked in your current job?      _____YEARS _____MONTHS


How long have you worked for the organisation (if different to above)?
  _____YEARS        _____MONTHS


What is your current position?        _____


On average, how many hours per week do you work?        _____HOURS

**Participant Debrief**

Thank you very much for participating in my research. The aim of this letter is to provide you with some further information about the nature of the research you have just participated in.

The research is made up of a series of studies. The information generated from this experiment will be used to help to try to understand whether the coachee's individual differences impact on how effective coaching is. Research to-date has provided inconclusive findings on whether individual differences do have an impact on coaching effectiveness; however these studies have frequently been methodologically flawed. This research will add to this body of evidence with a longitudinal, control group study.

The findings of this research will have important practical implications as they will aid in the identification of those individuals whom are likely to benefit the most from coaching as a learning and development tool. By understanding the reasons why certain individuals do not improve to a similar degree, should allow the coach to tailor their approach and techniques to ensure effectiveness is maximised for all. It will also provide coaches and organisations with a practical method of analysing the effectiveness of their coaching intervention and consequently give an indication of the ROI of coaching.

The information you have provided will be analysed to identify whether the coaching intervention resulted in an improvement in outcomes and whether there was any difference in the magnitude of improvements for different personalities.

Once again, thank you very much for your time and participation.

**APPENDIX D - Email invitation, informed consent form and questionnaire for feedback participants**

**E-mail Invitation**

Dear

(Participant name) has nominated you to complete a feedback questionnaire regarding their performance at work. (Participant name) is currently participating in a Coaching research project in which they receive coaching focused on personal and professional development.
The survey is brief and should only take between 5/10 minutes to complete. (Participant name) cannot start their coaching sessions until the survey has been completed. The deadline for this survey is **(date)**. Please ensure that you are somewhere quiet and free from disturbances before you start the survey. The link to this survey can be found below.
If you require any further information, please do not hesitate to contact me.

Regards,

Rebecca Jones

**Consent Form**

Thank you for agreeing to take part in my research.  The present study is one in a series of experiments that make up my doctoral research.  This study is designed to examine how effective coaching is on a variety of outcomes.

Your colleague will be provided with four coaching sessions. The aim of these sessions is to help them to develop a variety of work related skills and achieve their goals. You, along with two other members of staff, will be required to complete a confidential questionnaire regarding their performance in their role.  The same questionnaire will need to be completed at three time points – directly before and after the coaching and once again approximately three months after the coaching has been completed. The data collected in these questionnaires will be used to establish whether any change in behaviour was seen after coaching.

All information you provide will be kept strictly confidential. All data you provide will be stored securely.  Electronic data will be kept on password protected servers for a maximum of 5 years before deletion.  Hardcopy data will be kept in a locked filing cabinet for 2 years and then destroyed.

Participation in this study is entirely voluntary.  As such, refusal to participate involves no penalty or loss of benefits to which you are otherwise entitled.  You reserve the right to withdraw at any time without needing to provide a reason for doing so and you reserve the right to refuse to answer any question asked. This includes any period subsequent to the experiment itself.  If you decide at any point in the future that you no longer wish to participate, please contact me and I will delete all your data without any question or penalty to you.

By clicking 'next' you are confirming that you have read and agree to all of the above.

☐I have read and agree to all the above.

Further Information

If you would like to know more about the present study, your rights as a research participant or details of my research in general, please do not hesitate to contact me at the address below:

Rebecca Jones
Work & Organisational Psychology Group,
Aston University,
Aston Triangle,
Birmingham.  B4 7ET.
jonesrj2@aston.ac.uk

**Feedback Questionnaire**

Please rate your managing director on a scale of:

*1= outstanding*

*2 = good*

*3 = average*

*4 = poor*

*5 = unsatisfactory*

On the following items

1.     Partnership/Teamwork

2.     Client skill/Customer focus

3.     Technical skills

4.     Responsiveness/dependability

5.     Judgment/Decision making

6.     Management

7.     Leadership

8.     Quickly assesses the "big picture" in complex situations and identifies what is critical

9.     Recognizes patterns and connections in information from different sources and their business implications

10.    Creates simple, compelling messages and a few key priorities that guide and focus the efforts of others

11.    Simplifies complex projects or situations by focusing on key issues, activities and goals.

12.    Delegates detailed overview and responsibility to those with the necessary skills and information.

13.    Provides clear goals, written performance appraisals and follow-up discussions annually.

14.    Provides coaching and feedback to improve performance.

15.    Negotiates realistic resources to achieve results.

16.    Respectfully confronts problematic behaviour

17.    Encourages and is open to feedback and coaching from others

18.    Stands firm in the face of opposition/disagreement from influential others when appropriate.

19.    Makes tough choices and decisions in a timely fashion.

20.    Invests time and resources to enhance the effectiveness of management team.

21.    Responds to others' needs to balance personal and work demands.

22.    Seeks out and listens to customers' and colleagues' views to establish their concerns.

23.    Involves those who are directly affected by decisions in the decision-making process.

24.    Gains cooperation by explicitly addressing others' interests and concerns.

25.    Accurately assesses the impact of own behaviour and decisions on others.

26.    Accurately identifies own strengths and weaknesses and works to overcome weaknesses.

27.    Treats people respectfully regardless of personal views, disagreements, or level.

28.    Likes calculated risks needed to achieve results.

29.    Demonstrates technical expertise to resolve business issues.

30.    Maintains composure and positive attitude during stressful situations.

31.    Proactively seeks new experiences and knowledge.

32.    Quickly adjusts in response to changing situations.

33.    Looks for ways to do things better, faster and more cost efficient.

34.    Shows by his or her actions a strong commitment to diversity.

35.    Overall rating


**Demographics Questionnaire**


What is your gender?          MALE / FEMALE

What is your age in years?    _____YEARS

Please indicate your ethnic origin by choosing one option from the table below (please tick):

| Ethnic Origin | Tick (☐) | Ethnic Origin | Tick (☐) |
| --- | --- | --- | --- |
| White | | Indian | |
| Irish Traveller | | Pakistani | |
| Mixed – White and Black Caribbean | | Bangladeshi | |
| Mixed – White and Black African | | African | |

| Mixed – White and Asian | | Caribbean | |
|---|---|---|---|
| Chinese | | Arab | |
| Any other White background (*please specify*)............................................................ | | | |
| Any other Mixed Ethnic background (*please specify*)................................................. | | | |
| Any other Asian background (*please specify*)............................................................ | | | |
| Any other Black/African/Caribbean background (*please specify*)................................ | | | |
| Any other Ethnic Group (*please specify*)................................................................... | | | |

What is the highest level of academic qualification you hold? (Tick one):

| **Highest Level of Education** | **Tick (□)** |
|---|---|
| No schooling or schooling with no formal qualifications | |
| Middle School, GCSEs, O-levels or equivalent | |
| Some further education (high school, A-levels) | |
| High School, A-levels or equivalent | |
| Some University | |
| First Degree | |
| Postgraduate Degree | |

How long have you worked in your current job?      _____YEARS _____MONTHS

How long have you worked for the organisation (if different to above)?

 _____YEARS        _____MONTHS

What is your current position?        _____

On average, how many hours per week do you work?        _____HOURS

## Participant Debrief

Thank you very much for participating in my research.  The aim of this letter is to provide you with some further information about the nature of the research you have just participated in.

The research is made up of a series of studies. The information generated from this experiment will be used to help to try to understand whether the coachee's individual differences impact on how effective coaching is. Research to-date has provided inconclusive findings on whether individual differences do have an impact on coaching effectiveness; however these studies have frequently been methodologically flawed. This research will add to this body of evidence with a longitudinal, control group study.

The findings of this research will have important practical implications as they will aid in the identification of those individuals whom are likely to benefit the most from coaching as a learning and development tool. By understanding the reasons why certain individuals do not improve to a similar degree, should allow the coach to tailor their approach and techniques to ensure effectiveness is maximised for all. It will also provide coaches and organisations with a practical method of analysing the effectiveness of their coaching intervention and consequently give an indication of the ROI of coaching.

The information you have provided will be analysed to identify whether the coaching intervention resulted in an improvement in outcomes and whether there was any difference in the magnitude of improvements for different personalities.

Once again, thank you very much for your time and participation.

**APPENDIX E - Coaching session confirmation email sent to experimental group participants**

Dear

I am happy to confirm that your first coaching session is scheduled for **time** and **date**.

Please can you ensure that you are somewhere private, confidential and free from disturbances.

I have attached two documents. The first is an information sheet which has some additional details about the coaching process. The second is a coaching assessment sheet. Please spend some time completing this prior to our session. Once you have completed it, please email it back to me and you will also need to have it handy so that we can discuss it in the first session.

Finally, **please can you confirm the telephone number** I should call you on for our coaching session.

If you have any further questions, please do not hesitate in contacting me.

Regards,

Rebecca Jones

## Information Sheet

**Rebecca Jones**

Work & Organisational Psychology Group, Aston Business School, Aston University, Aston Triangle, Birmingham, B4 7ET

Tel: 07817 732834     Email: jonesrj2@aston.ac.uk

**Coach Background Information**

I am a Member of the British Psychological Society (BPS), the BPS Special Group in Coaching Psychology and the BPS Division of Occupational Psychology, an Associate Member of the Association for Coaching, an Affiliate Member of the International Society for Coaching Psychology and an Associate Fellow of The Higher Education Academy. I have an undergraduate degree in Psychology, a Master's degree in Occupational Psychology, Level A and B certificates in Occupational testing and a certificate in coaching. In addition to providing executive coaching I am a doctoral researcher and sessional lecturer at Aston University.

**Codes of Ethics**

I subscribe to the Aston University, British Psychological Society and Association for Coaching codes of ethics.

**Coaching Approach**

Coaching can be described as a helping relationship, where the coach uses a wide variety of behavioural techniques and methods to help the coachee achieve a mutually identified set of goals to improve his or her professional performance and personal satisfaction and, consequently to improve the effectiveness of the client's organisation. The underlying approach that I follow is cognitive behavioural coaching which maintains that the way we think impacts the way we feel which in turn impacts how we behave. By learning to think differently we can change our feelings and our behaviour.

**Process**

The coaching program will consist of four, hour long sessions. These sessions will span roughly three to four months in total, however the exact length of time between sessions will depend on your circumstances and will be agreed during the first session.

Before the first session you will be asked to complete a coaching assessment form which we will discuss during our first session. The aim of this form is to encourage you to think about your goals which will then become the focus of our sessions.

All sessions will be conducted by telephone. Please ensure that you are in a private space away from distractions where you will not be interrupted.

**Contact & appointments**

Please contact me by telephone or email and I will endeavour to respond as soon as possible. If you are unable to make your coaching session, please provide as much notice as possible but ideally a minimum of 24 hours notice is required.

**How can coaching help me?**

A coach aims to help you to develop the skills and attitudes required to enable you to get the best from life. Together we will identify what might be limiting you from reaching your full potential and what action you need to take to achieve your goals.

**Homework/commitment**

The key to coaching success is the coachee's commitment to change. Habits are often deeply rooted and require hard work and persistence to break. You will only get out as much as you are willing to put in, therefore for the coaching process to be truly effective you must be committed to completing any homework or action plans agreed upon.

**Coaching: Goal Assessment**

Please complete this form and have it available to discuss in your first session. We will work together to form your goals based on the information in this form. During the first session we will record your goals on the coaching contract.

1.  **What is really important in your life?**

2.  **What issues would you like to focus on or what skills would you like to develop?**

3.  **What is your goal regarding this issue?**

4.  **What would your life be like if you achieved this goal?**

5.  **What personal strengths would help?**

6.  **What blocks might hinder you?**

7.  **How could you state your commitment/how important is this goal to you?**

**APPENDIX F - Coaching Contract**

Organisation:

Coachee name:

Coachee position**:**

| | Coaching Objective | Outcome Measurement |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |

**Confidentiality**

Whilst recognising the need for discretion and confidentiality, all parties agree to take into account all aspects relating to the law and duty of care.