



A MODEL OF GOAL ORIENTATION, WORK ENGAGEMENT, JOB-RELATED LEARNING, NEED FOR ACHIEVEMENT AND INNOVATION.

HUI Kin Peng

MBA, M.Sc (Mech), B.Eng (Mech) National University of Singapore

Student No c3036211

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Declaration

Statement of Originality

This work contains no material which has been accepted as an award for any other degree or diploma in any other university or tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due references has been made in the text.

Statement of Authorship

I hereby certify that the work embodied in this Dissertation Project is the result of original research, the greater part of which was completed subsequent to admission to the candidature for the degree.

Signature:

Date: 17 January 2013

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Completing this doctoral dissertation has been one of the most challenging and fulfilling activities I have undertaken in my life. It would not have been possible without the help of people around me.

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Abstract

Goal orientation (i.e. learning goal orientation, performance-approach goal orientation and performance-avoidance orientation) is a psychological construct that directs an individual towards different patterns of cognition, affection and behaviour. Work engagement is a positive and self-fulfilling state of mind that leads to one putting discretionary effort into one's work. Past studies have found that employees who are engaged in their jobs are likely to enhance organisational productivity and profitability, probably because they are likely to acquire skills and knowledge through job-related learning. The first research question is therefore about the influence of work engagement on the relationship between goal orientation and job-related learning.

The ability to innovate at work is considered to be a component of an individual's performance. The need for achievement characterises an individual's desire for significant accomplishment. Job-related learning and need for achievement have both been reported to positively influence performance, which includes being innovative at work. The second research question is therefore about the influence of need for achievement on the relationship between job-related learning and innovation.

The study utilised a quantitative method with a cross-sectional design to examine the above research questions. Using an online survey questionnaire, data were obtained from 203 employees from organisations in the manufacturing industry.

The findings in relation to the research questions are as follows: i) work engagement fully mediates the relationship between performance-approach goal orientation and job-related; ii) work engagement fully mediates the relationship between performance-avoidance goal orientation and job-related learning; iii) work engagement partially

mediates the relationship between learning goal orientation and job-related learning; and iv) need for achievement moderates the positive relationship between job-related learning and innovation such that the strength of this relationship decreases as need for achievement increases.

The implications of the findings for practitioners are discussed, as are the limitations of the study and suggestions for future research.

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Chapter 1 Introduction

1.1 Background to the Research

Recent surveys (e.g., American Society of Training and Development 2008; Towers Perrin 2008) by professional organisations showed that work engagement is strongly correlated with organisational performance and profit. Organisations can benefit from an engaged workforce by achieving higher performance in areas such as increasing sales, improving productivity and customer service (Cascio & Bordreau 2008; ASTD 2008; Towers Perrin 2008). However, it was also reported (ASTD 2008; Towers Perrin 2008) that many organisations have employees who are not fully engaged in their work.

Engaged employees are able to contribute to their organisations because these employees experience positive emotions from their work, such as vigor, dedication and absorption, that are beneficial to the employees and to the organisation (Schaufeli & Bakker 2002). Organisational learning has been closely linked to work engagement and the effect of this learning has been shown to benefit organisations (ASTD 2008). In many cases, these benefits are critical to an organisation's survival and growth.

Work engagement, particularly in the manufacturing and service industries, is important due to the high demands that are placed on workers. For example, workers are increasingly asked to perform more than one role and the fast pace of technological changes requires workers to learn quickly in order to respond to these changes.

In recent years, competitive companies that have reported high productivity levels also required their employees to be involved in continuous improvement programs such as TQM and Lean/Six Sigma (Womack, Jones & Roos 1990; Liker & Hoseus 2008). These programs require workplace learning, problem solving and a level of innovative

thinking (Liker & Hoseus 2008). In the bid to achieve higher performance, there will therefore be a higher demand for workers to learn continuously, acquire new skills and at the same time, be positive, focused, productive and innovative.

1.2 Justification for the Dissertation

Research on work engagement and organisational learning would be beneficial to practitioners in terms of understanding human performance issues. However, little is known about how work engagement is related to other important aspects of work such as goal orientation, job-related learning, need for achievement and innovation

Work engagement can be influenced by many factors such as personal, motivational and situational factors (Xanthopoulou et al. 2009). It has been suggested that work-based learning is important for increasing engagement and further studies are needed to fully understand engagement in this area (ASTD 2008). There is a general lack of standardisation in the definition of work engagement although work engagement is cited frequently in the management literature (Kahn 1990; Csikzentmihalyi 1990; Rothbard 2001; Scaufelli & Bakker 2002). One common definition for work engagement is that it is a positive, self-fulfilling state of mind that is assumed to be made up of three constructs: vigor, dedication and absorption (Scaufeli & Bakker 2002).

Two constructs that might enhance our understanding of work engagement and human performance are goal orientation and job-related learning. Goal orientation is a psychological construct that influences the cognitive, affective and behavioural patterns of individuals (Dweck & Leggett, 1988).

Goal orientation can be characterised by three independent dimensions: learning goal orientation, performance-approach orientation and performance-avoidance orientation (Elliot 1996; Silver, Dwyer & Alford 2006). Job-related learning is the acquisition knowledge and skills that are

necessary to perform a task effectively (Loon & Casimir 2008) and is an important part of organisational learning. As workplace learning has been linked to work engagement (ASTD 2008), it would be useful to study how these three concepts are related so that practitioners can design programs to encourage engagement and job-related learning which would presumably improve performance, especially innovation.

Innovation is an important component of work performance (Welbourne et al. 1998). Organisational interventions such as TQM, Lean, Six Sigma require a certain degree of creative thinking and innovation in terms of making suggestions, solving problem and finding ways to achieve continuous improvements (Reid 2005; Liker & Hoseus 2008).

Achievement motivation is also known to influence performance. The need for achievement refers to an individual's desire for accomplishment or to perform a task to a desired level of competency. Need for achievement has long been used (e.g., McClelland 1961 and Atkinson 1957) to explain work motivation.

Organisational interventions (e.g., company-wide organisational learning programs and TQM) require effort and time as well as valuable company resources (Waddell, Cummings & Worley 2001). An understanding of how workers become engaged, how their learning is affected, and how they can be more innovative at work will help these programs to achieve greater success.

Organisational learning at all levels is a key to becoming more competitive. It would be useful for practitioners to understand how employees' goal orientation affects work engagement and job-related learning. Understanding how innovativeness at work is affected by job-related learning and the need for achievement can be beneficial to organisations in raising their levels of competitiveness. There is therefore a need to understand more deeply how organizations can help their employees to become more innovative through organizational learning

and work engagement. The relationships between goal orientation, work engagement, job-related learning, need for achievement and innovation will be examined in this study.

1.3 Research Questions and Hypotheses

The literature review revealed knowledge gaps from which the research questions were formulated. The first research question is how does work engagement influence the relationship between goal orientation and job-related learning. The second research is how job-related learning and need for achievement influence innovation.

1.3.1 Hypotheses

The following are the hypothesis that are tested in this study:

- i) Hypothesis 1: The relationships between the three types of goal orientation and job-related learning are mediated by work engagement.
- ii) Hypothesis 2: The relationship between job-related learning and innovation is moderated by the need for achievement. Specifically, the strength of the positive relationship between job-related learning and innovation increases as need for achievement increases.

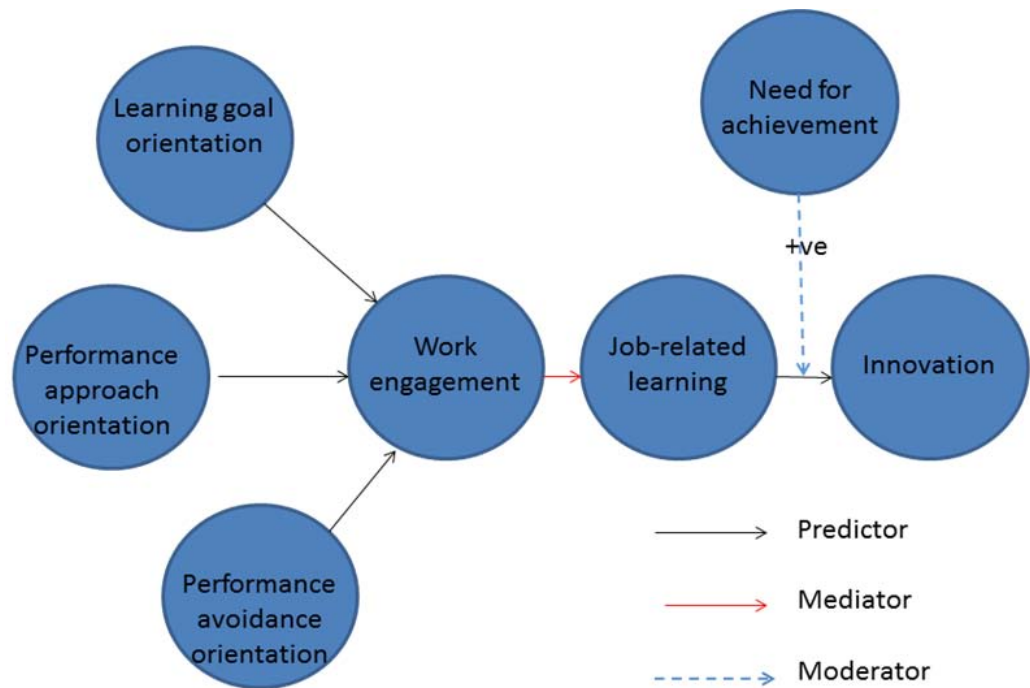


Figure 1.1 Proposed conceptual model

1.4 Research Methodology

To test the hypotheses, a cross-sectional, quantitative design was used. A number of manufacturing companies were asked for permission for their employees to participate in the study. The snowball sampling technique, which is a non-probability method, was used to select organisations. Data were gathered using an anonymous online survey questionnaire that was hosted on Qualtrics, which is a Web-based survey hosting site that is approved by the University of Newcastle. The research was conducted in accordance with the ethical guidelines stipulated by the University of Newcastle.

1.5 Findings

Finding One: *Learning goal orientation is positively correlated to job-related learning.*

Finding Two: *Performance-approach goal orientation is positively correlated to job-related learning.*

Finding Three: *Performance-avoidance goal orientation is positively correlated to job-related learning.*

Finding Four: *Learning goal orientation is positively correlated to work engagement.*

Finding Five: *Performance-approach goal orientation is positively correlated to work engagement.*

Finding Six: *Performance-avoidance goal orientation is positively correlated to work engagement.*

Finding Seven: *Work engagement is positively correlated to job-related learning.*

Finding Eight: *Work engagement partially mediates the relationship between learning goal orientation and job-related learning.*

Finding Nine: *Work engagement mediates the relationship between performance-approach goal approach orientation and job-related learning.*

Finding Ten: *Work engagement mediates the relationship between performance-avoidance goal orientation and job-related learning.*

Finding Eleven: *The need for achievement moderates the relationship between job-related learning and innovation. Specifically, the strength of the relationship decreases with higher levels of need for achievement.*

Contrary to Hypothesis 2, the strength of the positive relationship between job-related learning and innovation decreases as need for achievement increases. The major findings are depicted in Figure 1.2.

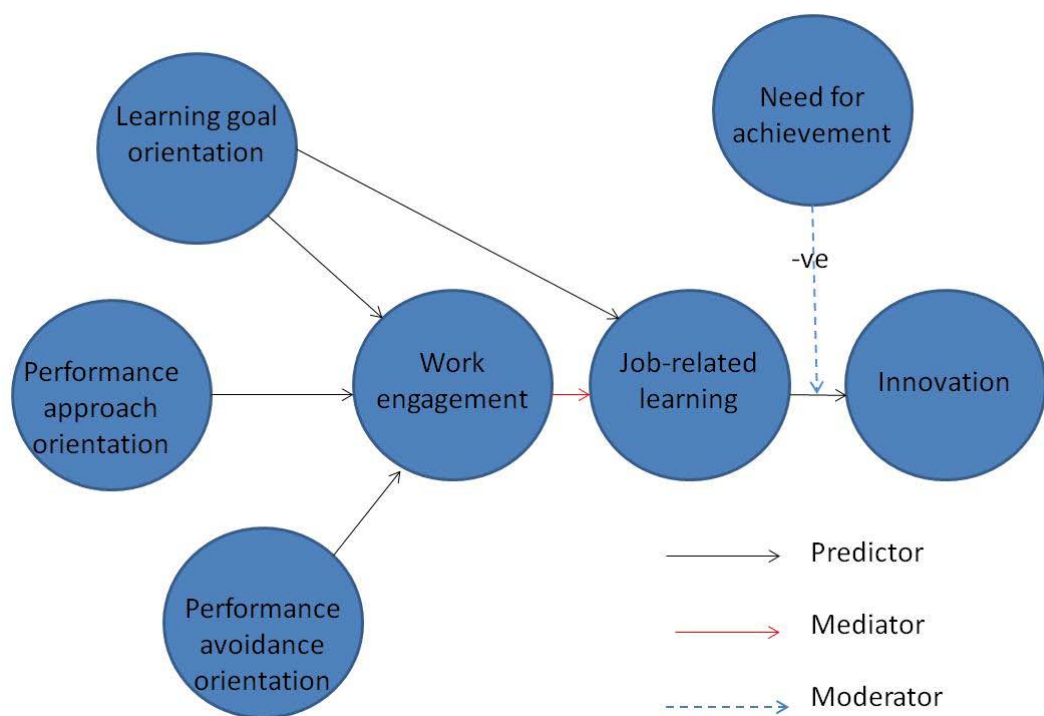


Figure1.2 Major findings.

1.6 Significance of the Research Findings

Work engagement was found to fully mediate the relationship between performance-approach goal orientation and job-related learning as well as the relationship between performance-approach goal orientation and job-related learning. Work engagement was found to partially mediate the relationship between for learning goal orientation and job-related learning. The significance of these finding is that workplace learning appears to occur through people being engaged with or feeling positive about their work.

Need for achievement moderates the relationship between job-related learning and innovation. However, the strength of the positive relationship decreases as need for achievement decreases. Job-related learning therefore has a greater effect on people with lower levels of need for achievement than it does with people with high need for achievement. A possible reason for this finding is that people with high need for achievement are already intrinsically motivated to do their work efficiently. The findings highlight the importance of work engagement with regards to job-related learning as well as the importance of job-related learning for people with lower levels of need for achievement.

The study contributes to the management literature in that it affirms the importance of creating a learning mindset in employees as well as increasing learning opportunities in organizations as these will lead to increased work engagement and job-related learning. Another contribution is that job-related learning has been shown to be important for innovativeness, especially for employees with lower levels of need for achievement.

The findings have practical applications for increasing work engagement and job-related learning. For example, managers could increase engagement by creating more learning opportunities. In goal setting, they could also match task difficulty with the levels of need for achievement of their workers. Managers could also consider providing workers with

greater autonomy through job crafting in order to increase work engagement.

1.7 Limitations and Future Research

This study has several limitations. Firstly, the use of convenience sampling in the research methodology has a disadvantage as the sampling was not random and the sample may therefore not be representative of the population. As such, the sample may potentially be biased and the generalisability of the findings is questionable. Secondly, the use of a cross-sectional design does not allow for comparisons with a base-line or across different time frames nor does it allow causal statements to be made. Thirdly, the use of an online survey has the disadvantage of limiting the sample to people who can access and use a computer. This limitation creates further doubts over the representativeness of the sample. Lastly, the single-source, common method that was used has been known to create problems although it was estimated that the effects of common method variance was not a major issue in this study.

There are several recommendations for future research in this area. Future research may consider a longitudinal design wherein interventions for job-related learning and work engagement can be studied over a period of time. Secondly, the current study only considered work engagement as a single dimension. Further work in this area should include an in-depth study on the various aspects work engagement with regard to outcome variables.

The current research only considered the effects of need for achievement as a moderator. The need for growth is also seen as a major trait which may influence behaviour in the workplace. It is therefore recommended that future studies look into the combined effects of the need for achievement and the need for growth on job-related learning and innovation.

Future research should also consider the use of data from a second source such as supervisors or management to overcome the disadvantages of using a single-source, single-method design. Finally, a qualitative analysis can be used to explore the meaning of concepts, such as innovation, as used in manufacturing organisations. Shopfloor innovations may range from making suggestions, studying problems to fully implementing solutions, each of which associated with different degrees of task difficulty and requires different degrees of autonomy. Qualitative research on workers' perceptions of innovative behaviour in relation to task requirements may reveal insights into how workers allocate their resources to cope with job demands and the requirement to be innovative.

1.8 Structure of the Dissertation

Chapter One is an introduction to the thesis and serves as a summary of the study. Chapter One contains an explanation of the background of the study and the development of the ideas that led to the study being conducted. It also provides an overview of the inquiry touching on the hypothesis, the research methodology and the findings. Section 1 also contains summaries for the significance of the findings, the limitations of the current study and suggestions for future research.

Chapter Two is a literature review on the topics of motivational theories, goal orientation, work engagement, job-related learning, need for achievement and innovation. Chapter Two lays the groundwork for investigating what other researchers have been studying in this area and also points to the knowledge gaps in this area. Chapter Two contains an in-depth discussion on the research questions and the development of the hypotheses.

Chapter Three provides a discussion of the research methodology. It contains a discussion of the research principles, the research design, the

research methodology, data collection, instruments used and ethical considerations.

Chapter Four contains a discussion of the analyses that were conducted. Chapter Five provides a discussion of the major findings. It also provides a discussion of the implications of the findings for practitioners, limitations of the current study as well as some suggestions for future research in this area.

Chapter 2 Literature Review

2.1 Introduction

A large body of literature exists for the topics related to the concepts that are to be studied in this research. This chapter covers motivation, goal orientation, work engagement, learning and job-related learning, the need for achievement and the relationships between these variables.

Section 2.2.1 contains a review of the major schools of thought for motivational theories. The major theories of goal orientation are explained in Section 2.2.2. In Section 2.2.3, work engagement is examined. This is followed by a review of major studies in relation to job-related learning in Section 2.2.4. In Section 2.2.5, the need for achievement is examined. Studies that have been conducted on the relationships between goal orientation, work engagement and performance are reviewed and discussed in Section 2.2.6. Section 2.2.7 contains a discussion on the literature relating to innovation, in particular the role-based performance measures developed by Welbourne and colleagues. Section 2.3 provides a review of current major organisational development interventions used in operations management as regards worker motivation, work engagement, job-related learning and innovative behaviour. Section 2.4 follows with the development of the research questions. Finally Section 2.5 presents the hypotheses and the conceptual model.

2.2 Review of Major Works

2.2.1 Theoretical Framework for Motivation

Motivation is the stimulus for behaviour and motivational theories describe what drives people to action. Motivation can be used to change the behaviour of people in ways that can benefit the organizations for which they work. Over the past several decades, various motivational theories have been developed by researchers such as Maslow (Hierarchy of Needs), Herzberg (Two Factor Theory), Alderfer (ERG Theory) and Locke (Goal Setting Theory).

There are three main approaches to explaining motivation: Content theories, Process Theories and Reinforcement Theory (Holt, 1990). There are various theories within each of these three approaches.

Content theories identify the specific types of psychological and physical needs. Individuals respond and behave to satisfy these needs. Content theories are used to propose ways in which managers or individuals can fulfill these needs and to describe how employees may react to organizational stimuli (Holt 1990).

2.2.1.1 Content Theories

Maslow's Hierarchy of Needs (1970) categorises needs into five groups. These five groups of needs are then arranged in hierarchical order and are as follows in ascending order: physiological, safety, social, esteem and self-actualization. Physiological needs refer to the basic needs for air, food and water. Safety needs refer to the needs for security and health. Social needs refer to the need to have a sense of belonging, acceptance, relationships and friendship. Self-esteem needs refer to the need for achievement and the need to be respected. Finally, self-actualization needs refer to the need to fulfill one's full potential (Holt 1990).

Motivation is the stimulus that drives human effort to fulfill any unsatisfied needs. Maslow posited that people in general are motivated to fulfill lower order needs before moving up to the next level of needs. Once satisfied, needs are no longer a source of motivation. Critiques of Maslow such as Wahba and Gridwell (1976) argued that there is a lack of empirical evidence for Maslow's theory and that the theory was based on clinical research. Alderfer(1969) argued that needs may not occur in the sequence prescribed by Maslow and that two or more of these needs may occur simultaneously. Nevertheless, Maslow's theory provided a very solid foundation for describing behaviour upon which others could build.

In a management context, Maslow suggests that managers should identify the needs that preoccupy their workers so that they can understand them as individuals. In an organizational context, policies should cater for the lower needs of food and shelter as well as provide for social and self-esteem needs where people can interact and grow.

Alderfer (1969) offered an alternative to Maslow's theory in which he simplified Maslow's five levels of needs into three levels. He explained that human behaviour is driven by the needs for existence, relatedness and growth. This is known as Existence-Relatedness-Growth or E.R.G.Theory.

In Alderfer's (1969) modification of Maslow's theory, the need for existence refers to needs that may be satisfied by material things and are similar to physiological needs in Maslow's theory. Relatedness refers to the need for maintaining relationships with others, gaining recognition and gaining acceptance. These are similar to the social and esteem needs in Maslow's theory. Growth needs refer to the need for development and advancement, and are similar to Maslow's self-actualization needs (Alderfer 1969).

The E.R.G. model differs from Maslow's theory in that stepwise progression is not necessary and the needs from different categories can co-exist. It does not assume that the satisfaction of lower level needs is a

pre-requisite for higher level needs to be motivational. In Alderfer's (1969) model, an individual can regress to a lower level of needs if needs at a higher level are not fulfilled. This is known as the frustration-regression hypothesis. The implication for managers is that they have to provide for growth and relatedness needs otherwise frustration regression will occur. Another implication for managers is that it is also not ideal to focus on catering to needs one at a time because more than one set of needs can co-exist. A problem with both Maslow's theory and Alderfer's theory is that they are difficult to test and research in real-life situations (Wahba & Gridwell 1976; Wanous & Zwaney).

According to Herzberg (1987) in his Two Factor Theory, job satisfaction and job dissatisfaction have different causes. Herzberg attributed job satisfaction to 'motivators' and job dissatisfaction to 'hygiene factors'.

Herzberg (1987) stated that the absence of hygiene factors cause job dissatisfaction. On the other hand, the presence of motivators such as recognition, opportunities for growth and promotion cause job satisfaction and lead to higher worker morale and productivity. Hygiene factors include company policies and the work environment.

One of the criticisms (House & Wigdor 1967) leveled at Two Factor Theory was that Herzberg assumed job satisfaction is positively correlated with productivity. However, this may not always be the case. When things are going well, people tend to look at the things they enjoy however when things go bad, they will blame their dissatisfaction on external factors. Hackman and Oldham (1976) also argued that the theory does not allow for individual tastes and differences as it assumes that employees will react in an identical manner to hygiene and satisfier factors. They argued that some individuals are more likely than others to respond positively to a rich and complex work environment.

McClelland's (1961) Acquired Needs theory is another type of content motivation theory. In this theory, the needs of people are shaped by their

backgrounds and life experiences. McClelland based his theory on the work of Atkinson (1957, 1964), who wrote that people have “energy reserve” and may use them to fulfill personal goals.

There are three types of acquired needs: the need for achievement, the need for power and the need for affiliation. One of these three needs will predominate and will influence (McClelland, 1961).

People with high levels of the need for achievement strive to excel, succeed and achieve. They set challenging goals for themselves and review them regularly. People with high need for achievement do not mind working alone and may even require independence to accomplish tasks and to solve problems. With their goal-setting abilities, people with high need for achievement are potentially good leaders and have the potential to perform tasks autonomously.

People with high levels of the need for power seek to influence or control others: For example, they will want to win arguments or be influential so as to make an impact. According to McClelland (1961), there are two types of need for power, personal and institutional. Individuals with a personal need for power wants to direct others while individuals with an institutional need for power organise the efforts of others to work towards the goals of the organization.

People with high levels of the need for affiliation will want to form close associations with other people and avoid conflicts. They need to be liked and accepted. People with high need for affiliation are usually cooperative, popular and do well in teams. McClelland found through experimentation that needs can be learned and can be changed. However, these needs can also revert to previous patterns when the individual's environment changes back to its original condition (McClelland 1965).

2.2.1.2 Process Theories

Process theories explain how people make decisions and select their actions to fulfill their tasks (Holt 1990). Process theories focus on variables that influence behaviour, which is seen as an output that is a result of various inputs and conditions.

Process theories are useful for explaining the ways in which people make decisions at work when confronted with certain situations (Vroom 1964; Adams 1965). Decision making could involve conscious or unconscious evaluations and thought processes. These decisions are linked to expectations of rewards or punishments as a result of performing or not performing a given behaviour (Vroom 1964; Adams 1965).

Vroom (1964) developed the Expectancy Theory in which he reasoned that people make work-related decisions based on their perceived ability to perform the task and the reward(s) they expect for performing the work. Decision making is based on the following three variables: (1) expectancy, which refers to the degree of confidence a person has in his or her ability to do a job, (2) instrumentality, which refers to the confidence a person has that he/she will be rewarded if the job is performed successfully, and (3) valence, which refers to how much value or emphasis a person places on receiving the reward or avoiding the punishment.

The implication of Expectancy Theory for management is that workers place value on the outcomes of the job performed. Managers should discover what workers want from their jobs by asking them about their expectations. Managers should then jointly set goals with their subordinates. The difficulty in the application of the theory is that managers may find it difficult to implement something that is fair and equitable for all employees (Nadler & Lawler 1983). Each worker is different and it may be difficult to standardise an approach or set a goal that suits all employees.

Early research conducted by Adams (1963) showed that perceived inequities lead to changes in the behaviour of workers. Equity refers to perceived fairness in rewards and treatment at work. Adams (1965) later developed the Equity Theory where he argued that the individual's perception about equity (i.e. how fairly are they being treated compared with their peers) affects their performance. When individuals compare their rewards with the rewards given to others performing similar tasks and feel that there are inequities, they may react in a number of ways. They may (1) increase their performance and work output to justify receiving a higher reward if they receive a positive equity (i.e. more than others doing a similar task), (2) decrease their work performance to compensate for lower rewards if they perceive a negative equity (i.e. they received less than what others receive for doing a similar task), (3) try to change the compensation they receive (especially when it is lower than expectations) through legal means or other means such as pilferage or theft, (4) modify the comparisons by persuading others to change their behaviour (e.g. discouraging high performers from putting in too much effort), (5) psychologically justify the perceived inequities and in the process distort reality, and 6) leave the organisation or change jobs.

The practical implication of Equity Theory is that managers need to think of the individual and collective reward systems used in their organisations because individuals modify their behaviour based on their perceptions of fair treatment and equitable rewards (Lawler & Porter 1967). It is also important for managers to understand that equity and fairness exist in the minds of those affected and this may not be the same as the manager's definition of equity and fairness (Markham & Vest 1987).

Motivation theory can be used to explain how individuals react when there is a perceived difference between one's goal and the current situation. If the perceived outcome is important in determining final performance, then there should be a definite relationship between goal setting and performance. Such a relationship is described in Locke's (1968) Goal Setting Theory. Locke postulated that the setting of goals is a cognitive

process which allows people to define their tasks and to direct their efforts. Locke and Latham (1990) posited that goal setting affects behaviour by (1) directing a person to a task, (2) mobilizing the task effort, (3) developing task standards, (4) facilitating persistence and (5) setting higher levels of task proficiency.

Goals can be regarded as intentions, aims, purposes or objectives as goals are cognitive representations of what people hope to achieve (Harackiewicz, Barron & Elliot 1998). Fishbach (2007) defined goals as internal cognitive representations of the desired outcomes or endpoints that impact evaluations, emotions and behaviours.

Goals have to be meaningful and important to the individuals concerned (Locke & Latham 2006). In addition, the individual must also believe that it is achievable. For this reason, assigned goals and self-determined goals (including participatively-set goals) may elicit different responses from individuals. Erez et al. (1985) suggested that people are more likely to accept goals which are set participatively than assigned goals because people feel a greater sense of control over the goal definition process when goals are set participatively. Locke and Latham (2002) argued that performance with assigned and self-determined goals will not be different as long as they are accepted by the individuals.

Locke and Latham (2002) also found that task difficulty and task specificity were good predictors of performance. Specifically, easy goals are not motivational as are goals that are not clearly specified.

Therefore as a motivational tool, goals should be achievable but not too easy (Locke and Latham 2002). Goals should be challenging enough to encourage performance as difficult goals tend to create and arouse greater effort and persistence than do easy goals. Furthermore, people generate commitment to the task through the use of psychological incentives. The goals must therefore be realistic so that people feel that they can get the results they expect.

Goals should also be specific and measurable (Locke and Latham 2002). Goal specificity leads to higher commitment and lower variability in performance. Having goals that are specific and measurable will result in higher performance than not having any goals because goals that are specific and measurable eliminate ambiguity and vagueness. Specific and measurable goals also provide a yardstick to measure progress such as performance over time, production output per unit time, financial savings per week.

Critiques of Goal Setting Theory (e.g., Ordonez et al. 2009) have argued that the goals of the organization and those of the individual are not always the same and this may lead to goal conflicts. Secondly, goals do not always foster the same level of interest in everyone. Goals that are too challenging may lead to risky behaviour when employees shift their attention away from important but non-specified goals. This generally leads to failure if the employees do not have the resources or capabilities to perform all of the needed tasks. Ordonez et al. (2009) cited the example of the development of the Ford Pinto where Ford executives focused on challenging goals (such as speed to market, fuel efficiency and cost) at the expense of other equally important features (such as safety and ethical behaviour). One of the consequences was the omission of safety checks whereby the fuel tank was located in less than six inches of crush space, thereby causing a potential hazard.

In contrast to the content and process approaches to motivation, Skinner (1953), in his Reinforcement Theory, describes behaviour in terms of the consequences individuals have learned from past experiences. Desirable or undesirable outcomes or experiences force a person to learn to behave in certain ways. Thorndike (1911) used the term operant conditioning to describe the tendency of individuals to repeat behaviours which lead to good outcomes and the tendency to avoid behaviours which lead to bad outcomes. The implication for management is that managers should use a reward and punishment system for influencing workers to behave or work in a certain manner.

2.2.1.3 Intrinsic and Extrinsic Motivation

Motivation can be regarded as intrinsic or extrinsic. Intrinsic motivation can be defined as the willingness of an individual to engage in an activity for its own sake (Lepper 1981; Ryan & Deci 2000). People who are intrinsically motivated engage in activities out of their own curiosity or enjoyment of the activity in order to achieve intellectual or personal goals. For example, students who are intrinsically motivated are better adjusted to the learning environment and do not need external motivators (Brewster & Fager 2000).

Extrinsic motivation, on the other hand, refers to being moved to do something because it leads to rewards such as approval (Ryan & Deci 2000). Extrinsically motivated actions can be performed with an attitude of resentment and resistance or alternatively with an attitude of willingness if one has accepted the value of the task. Ryan and Deci (2000) identified four types of extrinsic motivation, (1) external regulations, (2) introjected regulation, (3) identification and (4) integration.

Extrinsic motivation due to external regulation refers to behaviour or actions that are performed to obtain externally imposed rewards such as a promotion or a pay rise. Introjected regulation causes people to perform actions with the feeling of pressure to attain pride or to avoid guilt or anxiety. An example of introjected regulation is studying to pass an examination because one wishes to avoid a failing grade. Identification is a third form of extrinsic motivation whereby the individual has identified with the importance of a behaviour and accepted it. For example, one has accepted that memorizing spelling lists is an activity that is relevant to writing which is in turn valued as a life skill. The last form of extrinsic motivation is integrated regulation whereby one has fully internalised and assimilated the reasons for an action. Integrated regulation is similar to intrinsic motivation in that it is self-determined and autonomous. However, integrated regulation is different from intrinsic motivation in that integrated regulation leads to a separable outcome (Ryan & Deci 2000).

2.2.2 Goal Orientation

Goal orientation refers to whether individuals hold a learning orientation or a performance orientation towards tasks (Dweck 1986). According to Dweck and Leggett (1988), there are two types of goal orientation – a learning (or mastery) goal orientation and a performance goal orientation. Individuals who are learning goal orientated strive to learn something new or extend their mastery in order to increase their level of competence (Dweck & Leggett 1988). They view all achievement situations as opportunities to increase competence.

When people have a learning goal orientation, the current level of abilities (even if it is low) should not be a deterrent to their pursuit of the goal. On the other hand, people with a performance goal orientation seek to prove the adequacy of their abilities and at the same time, avoid showing evidence of insufficiencies. They view tests as a measure of their competence. Therefore in such situations, they seek to be judged as competent and not incompetent.

2.2.2.1 Significance of Goal Orientation

Goal orientation directs people towards different patterns of cognition, affectivity and behaviour (Dweck & Leggett 1988). First of all, people with different goal orientations set up different cognition patterns as they approach a situation with different concerns, ask different questions and seek different information.

Difference in goal orientations may explain how people view effort. They view effort either as a chance to increase ability in the case of learning goal oriented individuals or as a sign of their ability (or lack of ability) in the case of performance oriented individuals (Dweck and Leggett 1988). Individuals with a learning goal orientation want to increase their abilities and therefore see their achievements as feedback about their

performance. Individuals who are concerned about their competency are performance goal orientated and might regard a high level of effort as indicating low ability and a low level of effort as indicating high ability.

Secondly, Dweck and Leggett (1988) described how different goal orientations result in different affective reactions to challenges and setbacks. For individuals with a performance goal orientation, failure and effort exertion imply low abilities, which is a threat to self-esteem. This causes anxiety which in turns lead to depressed affect and a sense of shame. They may alternatively adopt a protective stance by devaluing the task and expressing disdain towards it. Low effort for performance oriented individuals may imply high abilities. On the other hand, for individuals with a learning goal orientation, failure signals that more effort is required. For some of these people with a learning goal orientation, increased effort may create a more satisfying experience and therefore heightened engagement. For others, effort in learning may bring intrinsic rewards such as pride and pleasure. As examples, Dweck and Leggett (1988) reported that children with learning goal orientation may feel bored with low-effort success while children with performance goal orientation may feel proud with low-effort success.

Lastly, as goal orientation influences the interpretation of events, Dweck and Leggett (1988) posited that there are differences in behaviour between individuals with a learning goal orientation and individuals with a performance goal orientation. The first difference is in task choice. A person with a performance goal orientation strives to demonstrate or gain favorable assessment of performances and if they are under the threat of failure, they tend to avoid negative judgments. Their task choice would be one that maximises pride but minimises negative judgments, anxiety and shame. Therefore individuals with high abilities may seek challenging tasks while those with lower abilities may seek easy tasks to minimise negative outcomes.

Table 2.1 (shows that performance goal orientation may result in individuals seeking or avoiding challenges with high or low persistence levels. Individuals with performance orientation goals may seek challenges and exhibit higher persistence if they feel they have ability to perform the task well. Conversely they may withdraw or avoid challenges and choose easier tasks in the face of challenges (Dweck & Leggett 1988). Since performance goals measure ability, it tends to produce helplessness after a setback or negative feedback if a person does not believe he has the ability to do it.

Table 2.1 Theories, and Goals and Behavioural Patterns in Achievement Situations (Source: Dweck & Leggett 1988).

*Theories, Goals and Behavior Patterns
in Achievement Situations*

Theory of intelligence	Goal orientation	Perceived present ability	Behavior pattern
Entity (Intelligence is fixed)	Performance (Goal is to gain positive judgments/ avoid negative judgments of competence)	High	Mastery oriented (Seek challenge; high persistence)
		Low	Helpless (Avoid challenge; low persistence)
Incremental (Intelligence is malleable)	Learning (Goal is to increase competence)	High or low	Mastery oriented (Seek challenge that fosters learning; high persistence)

A learning goal orientation, on the other hand, fosters learning and seeks to increase ability and mastery. People with a learning goal would persist in the face of adversity even if they currently have low abilities. Therefore their task choice would be one that maximises growth and skills acquisition (Dweck & Leggett 1988). Learning goal orientation gives rise to an adoptive or mastery behaviour which is less concerned about performance acquisition (Dweck, Chiu & Hong 1995).

Table 2.2 Cognitive and Affective Mechanism of Debilitation and Facilitation in the Face of Difficulty (Source: Dweck & Leggett 1988)

<i>Cognitive and Affective Mechanisms of Debilitation and Facilitation in the Face of Difficulty</i>	
Performance goal: Debilitating factors	Learning goal: Facilitating factors
1. Loss of belief in efficacy of effort, given low ability attribution	Continued belief in efficacy of effort: Effort self-instruction instead of low ability attribution; positive rule emphasizes utility of effort
2. Defensive withdrawal of effort: Effort confirms low ability judgment; inverse rule creates conflict between task requirements and goal	No defense required: Effort is consonant with task requirements and goal
3. Attention divided between goal (worry about outcome) and task (strategy formulation and execution)	Undivided, intensified attention to task that directly serves goal
4. Negative affect can interfere with concentration or can prompt withdrawal	Affect channeled into task
5. Few intrinsic rewards from effort (or high-effort progress) to sustain process.	Continuous intrinsic rewards for meeting challenge with effort

Dweck and Leggett (1988) also argued that the cognitive and affective mechanisms affect the quality of performance when people are faced with failures or difficulties. Table 2.2 shows that in the face of failures or difficulties, people with a performance goal orientation may display a loss of belief in the efficacy of effort, a withdrawal of effort, divided attention and lack of concentration, which are debilitating factors. However, people with learning goal orientation tend to display facilitating mechanisms to overcome challenges when faced with failure or difficulty. These facilitating mechanisms include self- instruction, utility of effort and intensified attention (Dweck & Leggett 1988).

While Dweck and Leggett (1988) made little reference to the dimensionality of goal orientation, their writing suggests that goal orientation is a single continuum with performance goal orientation and learning goal orientation on opposite ends (Button & Mathieu 1996). Button and Mathieu (1996) postulated that learning goal orientation and

performance goal orientations are neither mutually exclusive or contradictory constructs. They contend that it is possible for individuals to be simultaneously oriented to each type of goal although there may be a predominant goal orientation. Using a study involving 374 psychology undergraduates, they went on to provide evidence that goal orientation is two-dimensional construct (Button & Mathieu 1996).

Phillip and Gully (1997) integrated goal orientation with self-efficacy, locus of control, ability and need for achievement to predict performance (see Figure 2.1). In this model, they explained that the two goal orientations together with ability and locus of control influences self-regulation which in turn affects performance.

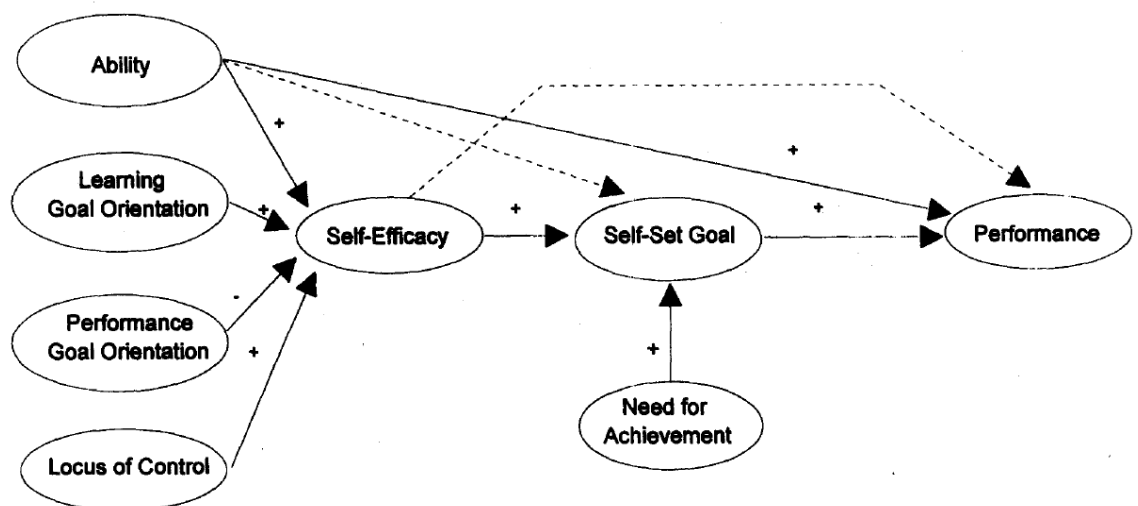


Figure 2.1. An integrated Model of Goal Orientation (Source: Phillip and Gully 1997)

Elliot and Harackiewicz (1996) contended that it was useful to partition the performance goal dimension into performance-approach and performance-avoidance goal orientations. They argued that third dimension of performance-avoidance or the avoidance of failure undermined intrinsic motivation. A performance-avoidance orientation is a type of self-protective process to avoid negative outcome and therefore predicts motivation and behaviour differently from learning goal and

performance approach orientations. Individuals with a performance-avoidance orientation perceive negative outcomes as a threat and therefore try to escape by avoiding evaluation.

Silver, Dwyer and Alford (2006) found that learning goal orientation and performance-approach goal orientation correlated positively with performance in a sales context while performance-avoidance goal orientation correlated negatively with performance. They argued that the model was improved with the addition of performance-avoidance goal orientation as shown in Figure 2.2.

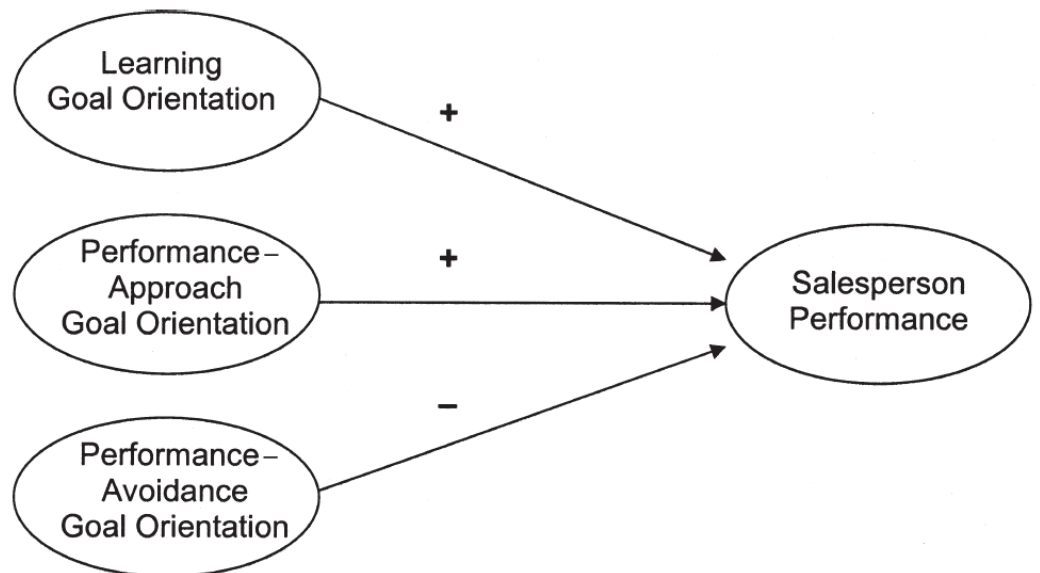


Figure 2.2. Model of Goal Orientation and its Relationship with Performance (Source: Silver, Dwyer & Alford 2006)

The model shown in Figure 2.2 breaks down achievement motivation (as defined by performance goal orientation) into performance-approach orientation and performance-avoidance orientation. The performance-avoidance goal orientation is important in explaining why some individuals seek to avoid negative evaluations in order to be seen in positive light. Their behaviour is different from people with performance-approach orientation who is seeking to demonstrate their abilities or seeking to receive recognition for their abilities. According to Silver, Dwyer and Alford

(2006), performance-avoidance orientation is failure focused while performance-approach orientation and learning orientation are ability focused.

2.2.3 Theoretical Framework for Work Engagement

While there are many aspects of motivation and behavioural changes which can impact human performance at the workplace, work engagement is one specific growing area of interest as more and more companies start to emphasise the power of human capital (Cascio & Bordreau 2008). Engagement itself takes on meanings with subtle differences depending on the researcher.

In early research work, Goffman (1961) found that people get attached to the role that they are performing. The attachment to the role can also vary from time to time. There could be momentary attachments and detachments from the role (Goffman 1961). Role distance is used to describe situations when people become detached from the role. In an organizational context, factors affecting the person, groups, inter-groups and organizational factors all work interactively to determine a person's work motivation which in turn gives rise to psychological drives and work-related attitudes (Hackman & Oldham 1980).

Hackman and Oldham (1975) described a Job Characteristic model which focuses on how the work environment coupled with the personal attributes determines a person's behaviour and outcomes at the workplace. Positive personal work outcomes (such as high motivation, high interest, high quality work performance and low absenteeism) are obtained when the three critical psychological states (meaningfulness of work, responsibility for work outcomes and feedback for performance) are present. These three psychological states are affected by the corresponding job dimensions (skill variety, task identity and task significance) as shown in

Figure 2.3. A particular job may not yield the same motivational score for different individuals.

This led to the development of a Job Diagnostic Survey, a diagnostic for measuring and assessing the workplace design (Hackman and Oldham 1975). The job characteristics model is influential as it shows how job characteristics interact with growth needs to determine work outcomes. It is possible to redesign a job by reviewing the key components of a job. Examples of its application include varying work to enable skill variety, assigning work to groups to enhance significance, delegating tasks to their lowest possible level to create autonomy and responsibility, connecting people to the outcomes of their work and providing feedback for learning (such as the customers feedback). Another important application is to factor in employees' growth needs when designing jobs.

As illustrated in Figure 2.3 the employee's growth needs moderates the relationship between core job dimensions (the job requirements), the psychological states and the behaviour and outcomes. Subsequent research has generally supported Hackman and Oldham's (1975) theory that there is the relationship between job characteristics and outcomes moderated by the need for growth (e.g. Schaufeli & Bakker, 2004; Bakker & Demerouti, 2007).

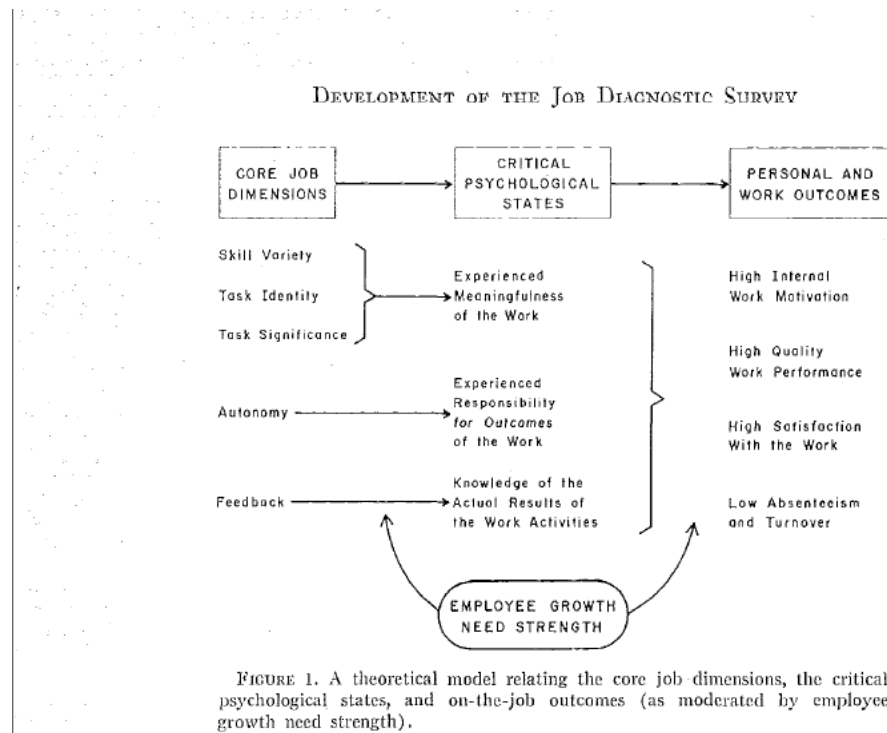


Figure 2. 3 Job Characteristics Model. (Source: Hackman & Oldham 1975)

Kanungo (1982) argued that work involvement in a specific task context may be different from work involvement in a general work context. A person's psychological identification with a job is a different construct from a person's motivation to do a job.

Stryker (1968) postulated that people define concepts and meanings for each of the positions they occupy in society. These psychological self-conceptions are called role identities. Role identities give meanings to people's roles by providing concrete role specifications as well as distinguishing between concurrent roles, complementary roles or counter-roles. A person can have different role identities, for example, a person may be a father, a husband, a son, a volunteer fireman, and a manager all at the same time. It is also noted that it is through social interactions that people acquire meaning in role identities. Therefore these role identities are dynamic in nature as they are reflexive and others respond to a person in terms of his or her role identities. These responses from other

people, may cause a person to give new meanings or definitions to the existing role identities.

Stryker and Serpe (1982) then postulated that behaviour comes about because of the relationship between individual and the social structure. An individual creates the behavior as a response to the roles set in the social structure. Therefore the result is a set of expectations which determines socially appropriate behaviour or behaviour acceptable by others. A person's status as an accepted role member in the social structure depends on the satisfactory fulfilment of roles. Validation of the role reflects positively during self-evaluation and consequently enhances an individual's self-esteem. Poor role performance, however may cause an individual to have doubts about one's self-worth, which may then produce psychological distress. Distress may arise if feedback from others (e.g. reflected appraisals) is perceived to mismatch one's identity. In order to reduce stress, people will be driven to action by changing or modifying their behaviour to match their own internal standards for the identity. (Stryker 1968; Stryker & Serpe 1982)

Commitment to a role, on the other hand shows how much an individual is attached to the role (Stryker & Serpe 1982). A person's commitment to a role depends on the salience of a particular identity. How a person perceives that significant others want him or her to occupy a role may affect commitment. Commitment to a particular role identity would be high if it is perceived that the sustenance of important social relationships depends on the fulfillment of the role. Conversely, the loss or failure in the role may negatively affect a person's social relationships which will in turn negatively affect a person's self-concept and self-esteem. Two types of commitments were identified: (1) interactional commitment, reflecting the number of roles associated with a particular identity and (2) affective commitment, which is the saliency of these social relationships. In other words, more important social relationships and the greater number of relationships in the social network will create a more salient identity and

commitment (Stryker 1968; Stryker and Serpe 1982).

Later, Rothbard (2001, p. 657) suggested that identification with and commitment to a role might be predictors of work engagement. According to Rothbard (2001), engagement can be distinguished from the two constructs of role identity and role commitment. He reasons that identification and commitment to a role are the reasons why a person is psychologically present or engaged in a role.

Kahn (1992) described how people used varying degrees of themselves (physically, cognitively and emotionally) in their work roles. The “self in process” describes how people bring or remove themselves in a role. Kahn (1992) was the first to describe an engagement model using three psychological constructs of meaningfulness, safety and availability. Kahn (1990) carried out qualitative studies on summer camp counsellors and members of an architectural firm to generate these ideas.

Psychological meaningfulness can be defined as the feeling or the perceived returns on investment for a person's cognitive and emotional energy (Kahn 1990,1992). People who experience meaningfulness will feel worthwhile, useful and valuable. They are able to give to others, work in their roles and make a difference at the workplace. Lack of meaningfulness makes people feel that little is asked of them and they have little to contribute in terms of work. This is similar to saliency of roles in the role identity theory (Stryker 1968) and the dedication construct in later work engagement model (Schaufeli & Bakker 2002). It also finds support in earlier motivation theories (Alderfer 1969; Maslow 1970) that people invest their energy in activities that will satisfy their needs at the work.

Psychological safety refers to the feeling that one can work without fear of negative consequences such as failures or feedback that may affect one's image, status or career (Kahn 1990, 1992). Safe situations are the ones in which one will not suffer negative outcomes. Support for psychological

safety in people can be found in the achievement goal theories where people with performance-avoidance approach takes a lower risk approach in order avoid having negative feedbacks or evaluation (Elliot & Harackiewicz 1996). People with learning goal orientation do not mind failing or having negative feedback for the sake of learning as they do not see this as a risk (Dweck & Leggett 1988).

Psychological availability is the feeling of being able to employ one's resources (i.e. their physical, emotional and mental resources) to engage in a job (Kahn 1990, 1992). People generally experience distractions when they engage in work. Research by Kahn (1990, 1992) showed how people make themselves available to different role performances and how they coped with the various demands of both work and non-work aspects of their lives. Availability also refers to an ability to engage in coping strategies.

Kahn (1992) posited that people use varying degrees of themselves in their work role by engaging themselves or withdrawing themselves cognitively and emotionally. Locke and Latham (1990) related engagement to goal setting and offered a slightly different opinion that attention and intensity of focus are both the result of motivating factors and goal setting mechanisms.

Maslach and Leiter (1997) considered burnout to be an opposite dimension of engagement. They considered energy, involvement and efficacy to be 3 different dimensions of work engagement. High worker engagement is associated with high energy levels, high involvement and high self-efficacy. Burnout–engagement therefore is defined by three dimensions with three continuums from exhaustion at work to high energy levels at work, from cynicism to pride and dedication, and from a reduced sense of accomplishment and lack of self-efficacy to high confidence and self-efficacy.

Rothbard (2001) argued that worker role engagement is a two-factor concept comprising attention and absorption. Attention means the amount

of time being spent thinking about the task and absorption means to be engrossed in the work and to the intensity of the focus on the work

Absorption in a work was investigated earlier by Csikszentmihalyi (1982, 1990) in which he postulated a flow concept that people absorbed in their work do not experience themselves as separate from their work. According to Rothbard (2001), attention is a material resource while absorption is a motivational construct which can have a positive or negative emotion (an example of a programmer debugging a software can have negative or positive emotions). Rothbard (2001) also wrote about the effect of negative or positive emotions arising from engagement in one role leading to positive or negative emotions in another role. The depletion concept revolves around the idea that engagement can lead to negative responses as a result of high demands and strain. The enrichment concept focuses on the idea that benefits from a role can increase one's self-worth leading to positive emotional response to that role and more importantly to increase engagement in other roles.

Scaufelli and Bakker (2002) hypothesised engagement is a separate independent construct opposite to burnout and extended this concept to include a three-factor definition of engagement comprising vigor, dedication and absorption. Engaged employees often have a sense of energy, affective connection to their work and colleagues, and deal well with job demands.

Contrary to the work of Maslach and Leiter (1997), which assumes that engagement and burnout are opposite ends of a continuum, Schaufeli and Bakker (2002) argued that these are two independent constructs. In the Maslach Burnout Inventory (MBI; Maslach, Jackson & Leiter 1996), burnout and work engagement can be measured using scales with reverse-worded items. In other words, scoring low on the exhaustion scale and cynicism scale is equivalent to scoring high on the efficacy scale of the MBI are indications of engagement.

Schaufeli and Bakker (2002), however, argued that burnout and engagement are not perfect opposites as a person who is not burned-out is not necessarily engaged in work. Conversely, low engagement does not mean burnout. Secondly, in earlier studies, the relationships between the two concepts were measured using the same questionnaire. Scaufeli and Bakker(2002) argued that the concurrent validity of these concepts need to be examined and that these concepts should be considered separately. This being the case, an employee with low burnout scores may have high or low engagement scores. An employee with high engagement scores may have high or low burnout scores. A separate scale was then created for the reasons above to study the three constructs of engagement – vigor, dedication and absorption.

According to Schaufeli and Bakker (2002, p.5), work engagement is defined as follows:

‘Engagement is a positive, fulfilling, work-related state of mind that is characterised by vigor, dedication, and absorption. Rather than a momentary and specific state, engagement refers to a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behaviour. Vigor is characterised by high levels of energy and mental resilience while working, the willingness to invest effort in one’s work, and persistence even in the face of difficulties. Dedication refers to being strongly involved in one’s work and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge. Absorption is characterised by being fully concentrated and happily engrossed in one’s work, whereby time passes quickly and one has difficulties with detaching oneself from work’

The continuum spanned by vigor – exhaustion is known as activation and the continuum spanned by cynicism – dedication is known as identification. The researchers, however, felt that the third construct of burnout, professional efficacy, does not have an equivalent in the engagement measure. They argued that self-efficacy seem to play a less

important role in burnout and secondly through qualitative research work, employees seem to report that immersion in work and being happily engrossed in work seem to be a more prominent pattern than efficacy in engagement. They therefore suggested that a state known as absorption should be used as a distinct aspect of work engagement (Schaufeli et al. 2002).

A self-report questionnaire known as the Utrecht Work Engagement Scale (UWES) was developed to measure work engagement based on the above rationale (Schaufeli & Bakker 2002). Over time, other researchers have shown that worker engagement relates positively with performance, job satisfaction and higher organizational commitment, and relates negatively with absenteeism and turnover (Salanova et al., 2003; Schaufeli & Bakker 2004; American Society of Training and Development 2008).

Karasek (1979) found that work strain is a result of the combined effects of job demands and job latitude or the discretion allowable at work. Low job latitude results in exhaustion, depression, nervousness and anxiety. One way of increasing job latitude is to increase the opportunity to use intellectual skills during work. Increased job latitude also increases the individual's self-efficacy and coping abilities.

Karasek developed a job strain model in which he showed the relationship between job demands, job strain and job latitude. Karasek (1979) went on to suggest that changing the administrative structure of an organisation to enable workers to make decisions about their own job tasks would help to decrease stress. Although not stated explicitly, Karasek's (1979) original research, found that decreasing stress and exhaustion decreases the chances of burnout since burnout comprises a measures of exhaustion and cynicism defined in Maslach Burnout Inventory (Maslach, Leiter & Jackson 1996). Since vigor is on the opposite end of the exhaustion dimension on Maslach Burnout Inventory, a decrease in stress may lead

to positive effects on an individual's vigor and engagement (Bakker and Schaufeli 2002).

Karasek's (1979) recommendation for increased job latitude in the work strain model also runs contrary to Frederick Taylor's classic work in scientific work design, where workers are assigned fixed tasks (Taylor 1911) . However, Karasek's (1979) recommendation is supported by research in the areas of multi-skilled worker, autonomous work teams where job latitude is shown to be a factor in increasing productivity (Kirkman & Rosen 1999).

The Conservation of Resources (COR) theory offers an explanation of how people use and allocate their energy and personal resources to deal with stressful situations (Hobfoll 1989). In the COR theory, resources are defined as the basic units of characteristics (such as energy) that are used by individuals to deal with stress. Stress experienced by people could arise from a number of possible situations involving: (1) a loss of resources, (2) a threat of loss of resources, or (3) a net loss of resources after investing in resources.

When confronted with stress, an individual's behaviour is to minimise the net loss of resources. When not confronted with stress, people tend to build up or accumulate resources in order to offset potential future losses. Build-up of resources in this manner results in positive well being. Individuals may also invest other resources in the hope of gaining more resources. This line of reasoning is used to explain why people invest their time and money to gain love and affection or in other cases, power and money. COR theory attempts to explain people's coping behaviour when dealing with stress.

COR theory defined a few types of resources (Hobfoll 1989). Object resources are things of a physical nature such as equipment or facilities. Situational resources refer to conditions that are sought after such as

marriage, tenure and seniority. Critics argued that such conditions need to be qualified e.g. a good marriage or a bad marriage (Rooks 1984; Thoits 1987). Personal characteristic such as personal orientation is a type of resource and can aid resistance to stress. Energies are the last type of resource it refers to time, money and knowledge. It has intrinsic value and aids people in the gaining of other resources.

An application of COR theory is the refocusing of attention on stress by reinterpreting threat as a challenge. By doing so, individuals invest their resources for a potential gain instead of guarding against a potential loss. This can be related to the setting of achievement goals, actively monitoring threats and taking actions to guard against potential threats could be triggered from a performance-avoidance goal orientation where the main aim is to minimise risk of a bad evaluation or outcome. Therefore to reframe this as a challenge, an individual may have to change orientation to a performance goal orientation where a good outcome or evaluation is sought.

Another application of COR theory is in the expectations of net gain of resources. The expectation of a long-term payoff explains what motivates some people to accumulate resources even when they are not experiencing stressors. Learning new skills with a view to get long-term benefits is one such example of a net gain of resources. This correlates well with Dweck and Leggett's (1988) model that people with mastery or a learning goal orientation tend to exhibit enhanced persistence and effort in order to learn something. COR theory also explains how people cope with failures and why people are able to persist in the face of failure or to learn something. The theory explains that having enough of the relevant resources implies an ability to readjust the perceived value of an event or failure. The individual counteracts the impact of loss by internally revaluing the importance of the event. For example, a person may devalue education after experiencing an examination failure. COR theory suggests a set of cognitions which supports Achievement Goal theory (Dweck &

Leggett 1988) and a set of behaviour which supports work engagement theory (Bakker & Schaufeli 2002).

Incorporating earlier works by Karasek (1979;1998) on job demands and job strain as well as works by Hobfoll (1989) on correlation of work resources to engagement, Bakker and Demerouti (2007) developed an integrated model for job demands, job resources, strain (burnout) and engagement which is known as the Job Demands-Resources Model (JD-R Model). A version of the JD-R Model is shown in Figure 2.4.

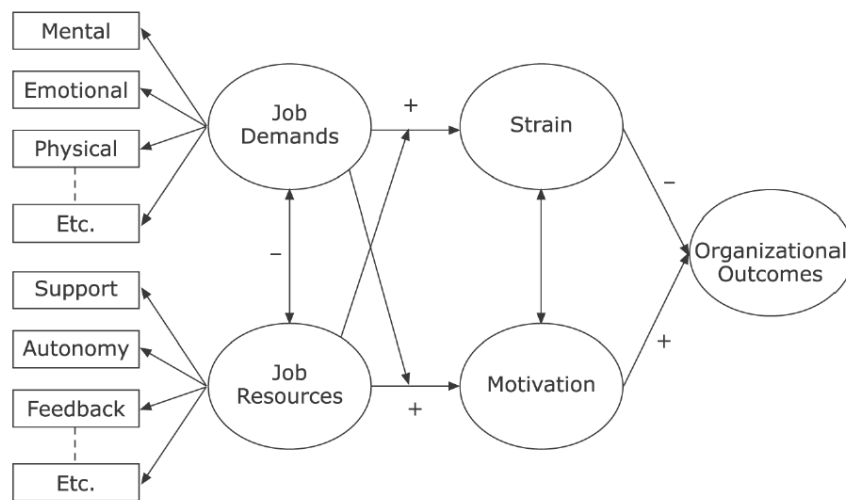


Figure 2.4 The Job Demands-Resources Model (Source: Bakker & Demerouti 2007).

According to the JD-R Model (Bakker & Demerouti 2007), work characteristics has two dimensions:

1. Job demand is the physical, psychological, social organizational aspects of the job that requires sustained mental efforts.
2. Job resources are the physical, social, psychological and organizational aspects of the job that do the following:
 1. Are functional in achieving the goals.
 2. Reduces the job demands and associated costs

3. Stimulates learning, growth and development

Work-related well-being is closely related to engagement and burnout. Well-being is seen as involving both positive and negative aspects in terms of engagement and burnout.

The buffer hypothesis in the JD-R Model (Bakker, Demerouti and Euwena, 2005) states that the relationship between job demand and burnout is weakened as a result of increased job resources. This means higher levels of job resources mitigates the effects of high levels of job demand on burnout. This correlates well with Karasek's (1979, 1988) job strain model where high levels of support and control mitigates high job demands.

Xanthopoulou (2007) extended the JD-R Model to include a new dimension of personal resources. In this model (shown in Figure 2.5), job resources and personal resources drive work engagement.

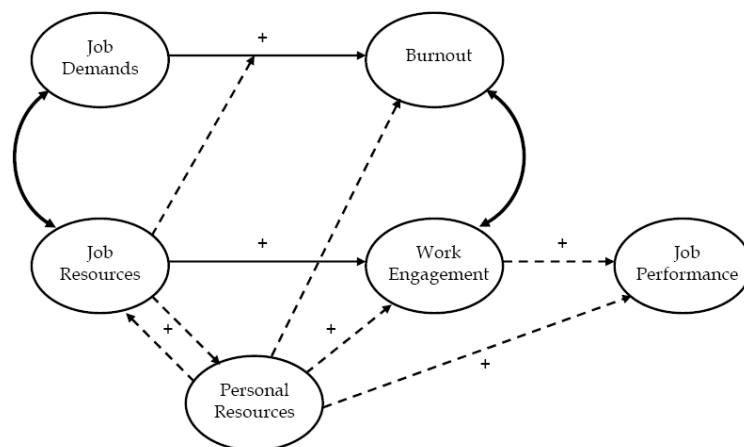


Figure 2.5 The expanded Job Demands-Resources Model. (Source: Xanthopoulou 2007).

(Note: dotted lines represent the new relationships integrated in the model.)

The JD-R Model (Bakker & Demerouti 2007) emphasised the work environment and job characteristics as the main determinant of worker well being. However the expanded JD-R Model includes the additional dimension of personal resources taking into consideration the individual characteristics of the person performing the work (Xanthopoulou 2007). Personal resource is a dimension that has three constructs: self-efficacy, self-esteem and optimism.

Self-efficacy refers to how an individual perceives his own capability to complete a task. People who has a greater sense of self-efficacy see themselves as having greater influence over the environment and therefore more likely to succeed (Bandura 1982).

Self-esteem refers to individuals seeing themselves as effective contributors to their organizations. The concept of an organisation-based self-esteem is defined as how much employees see themselves as worthy contributors in the organization (Pierce, Gardner, Cummings and Dunham, 1999). Research has shown self-efficacy to be more of an affective construct involving an individual's emotions (Chen et al. 2004). Finally the last construct of optimism refers to expectations of the of goal directed action. It is related to expectations of the situation and the world (Seligman, 1979).

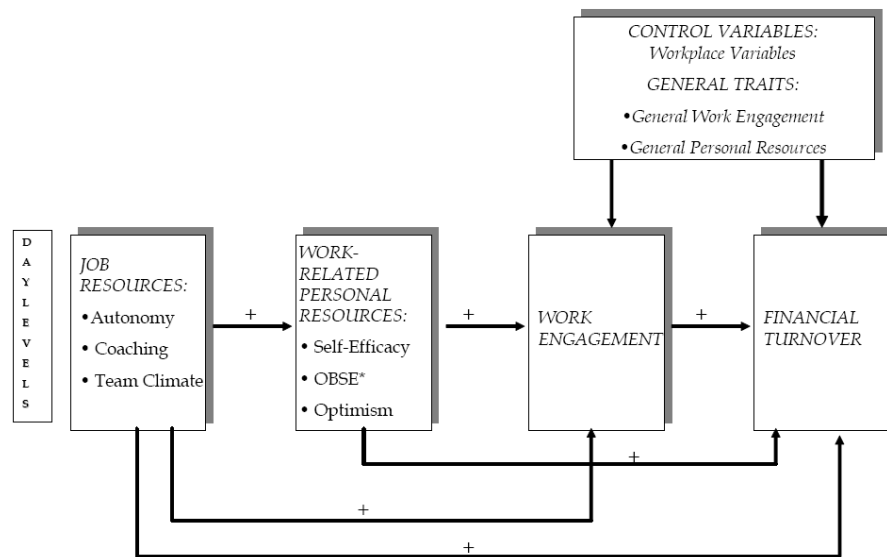


Figure 2.6 Relationship of Personal Resources to other Elements of the JD-R Model. (Source: Chen, Gully, & Eden 2004).

Chen et al. (2004) found that personal resources are positively correlated with work engagement which in turn is positively related to financial turnover and organisational goals. Chen et al. (2004) considered self-efficacy as a motivational construct and self-esteem to be affective construct as illustrated in Figure 2.6 above.

Research supported the finding that a high level of job resources encouraged work engagement in situations that involve high job demand (Hakanen et al. 2005). In a study on Finnish dentists in the public sector, Hakanen (2005) reported that job resources such as variability in professional skills and job contacts boosted work engagement while being able to mitigate the effects of high workloads and poor environmental conditions.

In job situations that are highly demanding, which are also referred to as active jobs, employees should be encouraged to learn and develop skills (Karasek 1979). This is supported by research which found work engagement to be linked to active learning behaviour. Employees learn new things through work activities, search for challenging tasks and ask

for feedback (Bakker and Demerouti 2007). Hyvonen et al. (2009) also found that engaged managers are more likely to develop themselves and increase occupational knowledge. In their study on 750 Finnish managers, Hyvonen and colleagues (2009) reported that engaged managers develop themselves, increase their own occupational knowledge and experience increased productivity.

Hakanen and his colleagues (2005, 2007), in their studies on Finnish dentists, also found positive links between engagement and personal initiative. They found that engaged dentists are likely to do more work, ask for feedback and ideas for improvement than non-engaged dentists.

2.2.3.1 Applications of Work Engagement in Organisational Job Design

Job design theories (Hackman & Oldham 1975; Xanthopoulou et al. 2009) that explain the interaction of job characteristics and motivation have found practical applications in organisations seeking higher productivity and performance. In the process of applying job design, managers have to find ways to motivate and retain employees by giving meaningful work to employees.

Job resources refer to those physical, social and organisational aspects of the job that may: (a) reduce job demands and the associated physiological and psychological costs; and (b) be functional in achieving work goals; or (c) stimulate personal growth, learning, and development (Schaufeli & Bakker, 2004; Bakker & Demerouti, 2007). These aspects are important for facilitating work engagement.

Job resources play a role in intrinsic and extrinsic motivation. In an intrinsic motivational role, performance feedback fosters learning and competence while social support and autonomy fosters a sense of belonging (Lawler & Hall 1970). In an extrinsic motivational role, a good work environment fosters a willingness to expend more efforts and time in their jobs.

Bakker and Demerouti (2008) found that job resources positively predict work engagement. Job resources may include autonomy, social support, feedback, goal setting linked to appraisal and organisational climate. Job resources are important facilitators of employee engagement, particularly under conditions of high job demands (Bakker & Demerouti, 2008). This engagement, in turn, has a positive impact on job performance (Bakker 2009).

Personal resources are positive characteristics of a person such as optimism, self-efficacy, hope and resilience. This is also referred to as psychological capital (Sweetman & Luthans 1995). People with adequate personal resources tend to be more engaged as they see adversity as a challenge and transform problems into opportunities. Rothmann and Storm (2003), in their cross-sectional of 1,910 South African police officers, found that engaged employees tend to use an active coping style, focus on solving problems, and are proactive with regards to removing or rearranging stressors.

Bakker (2009) offered four reasons why engaged workers work better than their non-engaged colleagues (Bakker 2009). Firstly, work engagement is closely linked to other positive outcomes where engaged employees typically experience positive emotions, happiness and joy. Therefore people who are engaged tend to work on enhancing their personal resources (Frederickson 2001). Secondly, these positive emotions lead to better health which allows them to focus and direct their energies on important tasks (Cotton et al. 2006).

Engaged employees are excellent proactive job-crafters who mobilise their own job challenges and job resources. Engaged employees craft their own jobs to sustain their own engagement taking initiatives to proactively anticipate and create changes in how work is performed (Grant & Parker 2009). Finally, these engaged employees then transfer their happiness to

others in the work environment (Bakker & Demerouti 2009; Bakker & Xanthopoulou 2009). This final reason also explains why collaborative teams with engaged employees perform well.

Xanthopoulou and colleagues' (2009) research in the JD-R Model supports COR theory. In the JD-R Model, personal resources (self-esteem, self-efficacy) and job resources (job autonomy, coaching and feedback) related positively with performance.

Hobfoll (1989) described in his COR theory that the accumulation of resources drives human behaviour. Resources could refer to social support and new skills and abilities. People invest their resources to deal with stress. The greater one's resources, the greater the ability to deal with stresses. Conversely the less the resources, the more vulnerable a person is. Secondly people invest in resources to build more resources to protect against future loss. This results in a gain spiral where people use up old resources to gain new resources which ultimately lead to sustained performance. Learning new skills is an example of using resources to build new resources.

Linking and accumulating resources at the workplace creates a more resourceful environment which promotes better coping, adapting and engagement. This linking of resources is known as resource caravan that in turn aids in mobilizing resources (Hobfoll 2011).

Engagement has a positive effect on mobilizing job resources. As people mobilise resources on the job, they also create their own jobs in a process known as job crafting (Grant & Parker 2009). Employees who craft their own jobs are more likely to be involved in active learning as they get constructive feedbacks, given a chance to try to improve their work, given a chance to suggest things and given recognition for the work they produce. Job crafting in this way sustains the vigor and dedication in work engagement. The work produced is also likely to be innovative as the

workers adapt the work to improve the operations (Berg, Wryzienewski & Dutton 2009).

2.2.3.2 Engagement as used by Industry Practitioners

Apart from academic research, there are also many sources of definitions for engagement used in the industry by human resource practitioners, non-profit organizations and large consultancies such as the Gallup Organization and Towers Perrin. Each of these sources places a different emphasis and provides a different scope to the term engagement. Some of them could include factors such as commitment, focus, role clarity, disengaged/cynical employees and specificity of goals. Generally, organizations was found to be positively correlated to engagement and company performance (Harter et al. 2002; ASTD 2008). Disengaged employees could be a potential source of untapped human potential. The following is a review of some of the key ideas used by practitioners (Harter et al. 2002; ASTD 2008).

The Gallup Organization, based on the work of Buckingham and Coffman (1999) surveyed more than 1 million employees in various industrial sectors in the United States and found key areas which contribute significantly to the company's profitability. The survey found that people tend to lose their work engagement after some time with their organizations. The survey found many possible causes including having little or no feedback on work performance, no guidance from their superiors, a lack of opportunity to give feedback or talk about problems, a lack of opportunity to give inputs and suggestions, a lack of resources to improve work methods or work on problems, not sufficiently rewarded or not getting recognition for good efforts put in, lack of opportunity to develop potential, the push for higher performance levels with less resources, lack of opportunity to interact socially, unresolved conflicts, office gossip, cynicism and difficulties in work-life balance.

The Gallup Organization created a 12-question survey known as the "Q12" that measures employee engagement. The survey known as the Gallup

The Workplace Audit (or GWA) basically measured an employee's engagement at work on a five-point scale ranging from weak to strong. The questions addressed areas generally classified as clarification of resources and goals, clarity of goals and expectations, status of relationships in the roles and organisations, and growth opportunities in the organisation. The results show that companies with high Q12 scores generally experience superior performance in terms of sales growth, better productivity and customer loyalty (Buckingham & Coffman 1999).

Gallup's definition of engagement has three categories: (1) Engaged employees are those who work with passion and feel connected to their company. They are creative and drive innovation in their company; (2) not-engaged employees are basically at work, putting in their time but at the same time not expending much energy or showing passion in their work; and (3) actively disengaged employees are employees who are not only unhappy at work but also act out their unhappiness and undermining efforts put in by their co-workers. It was reported that disengaged employees potentially cost the American economy billions of dollars in lost productivity.

By classifying engagement levels in this way, it was suggested that efforts to raise engagement begins with the twelve questions. Interventions can then be devised for the not-engaged employees. This includes providing employees with goals rather than tasks. Actively disengaged employees should be terminated to avoid damage to staff morale. Employees who are not disengaged but not fully engaged are those that hold back their efforts and get by with minimal amount of work. This is similar to the people with a performance-avoidance approach in the achievement goal model. These employees can be made to improve using improved communication and working on internal organisation structure and programs to help them feel connected.

To help employees stay engaged, involved and committed, organisations should attempt to clarify work expectations and performance

measurement. As such, employees need clear communication and strong support from their managers. Employees need to be clear about what is expected of them. Managers need to be aware that employees need to be stimulated and challenged to grow in areas where they have talent and potential. (Buckingham & Coffman 1999).

Measurement is crucial as it provides a form of feedback on the progress of work. The explanations given in Gallup's Q12 approach for employee engagement and disengagement is in line with the learning goal orientation model wherein growth and learning are important. The explanations are also supported by role identity theory and the work engagement model in that employees need to feel connected and have a purpose in the organisation they work for.

Coffman and Harter (2001) earlier established the relationship between employee perceptions and business outcomes. Soft numbers such as employee engagement using the GWA are leading indicators of company performance as opposed to hard financial numbers as trailing indicators. Harter et al. (2004) later extended the concept of engagement to Human Sigma, the Six Sigma equivalent of engagement, with an aim to measure and reduce variability in employee engagement.

Towers Perrin (2008) surveyed many organizations and found that many companies have disengaged employees whom they described as having a disengagement gap. They described employee engagement in terms of commitment and focus rather than engaged/disengaged. Focus is referred to as line of sight or how much employees feel that they have a good understanding of the part they play in making the organization successful.

Employees who are engaged understand the big picture, are able to see how their actions move the company closer to the goal, how to take appropriate actions without direction and are able to respond swiftly as they adapt to changing situations. As practitioners, Towers Perrin's (2008)

focus is on intervention rather than explanation of the mechanism of engagement.

Towers Perrin (2000) advocates creating internal communications program to generate awareness and understanding of goals, directions and policies. The argument presented here was that not all employees are the same in any organization and that employees can be segmented into four categories: those who are fully engaged, those who are committed but out of focus, those who lack commitment, and those who are cynical. Through better communication, companies can tailor programs to reach out to the bottom tier performers.

The American Society of Training and Development (2008) reported that disengaged employees are a potential force of untapped human potential and that training and development, coaching, top management communication rank highly in the effort to engage 'disengaged' employees. The definition used for engagement was the three-dimensional construct of vigor, dedication and absorption used by Schaufeli and Bakker (2002). The emphasis of the report was on intervention and it recommended many measures to increase engagement such as communication and leveraging on training. Firms need to use training and development to leverage learning opportunities to help drive engagement. This can be done by design learning with engagement in mind and providing training on how to coach employees.

2.2.3.3 Engagement in Relation to Self-efficacy and Goal Setting

Self-efficacy is a major cognitive factor in human behaviour. It is mentioned in goal setting theory where commitment to goals is enhanced by self-efficacy (Locke and Latham 2006). Goal setting by organizations and individuals influences the intensity and focus of the worker. Therefore workers may feel compelled to focus more on demanding jobs and relax on easier jobs (Locke & Latham 1990).

It is used in Vroom's Expectancy Theory (1964) to describe how people make work-related decisions based on their perceived abilities to perform the tasks and to receive the rewards. Self-efficacy has also been studied in motivational studies and found to be the major social cognitive factor in human behaviour (Bandura 1997). Ng, Ang and Chan (2008) also found self-efficacy as a mediator of the relationship between both personality and job autonomy and leadership effectiveness.

Many self-help courses such as the Dale Carnegie courses emphasise self-efficacy. These are reported (Bernstein 1990) to have trained thousands of employees at major corporations. There are also evidence of people reporting success with self-efficacy principles in Total Quality management work in major corporations like Compaq and First Chicago (Dutton 1992).

2.2.4 Job-related Learning

This section contains a discussion of workplace learning and job-related learning. Section 2.2.4.1 provides a discussion of how job demands influences workplace learning. Section 2.2.4.2 provides a discussion on job-related learning in relation to adult learning theories and workplace learning. Section 2.2.4.3 contains a discussion on how job-related learning is related to positive emotions and positive behaviour.

2.2.4.1 Job demand and Learning

The concept of job demand was first proposed by Karasek (1979). Karasek's Job Demand Model suggests that mental strain from jobs could be predicted by an interaction of two factors - job demand and job decision latitude. Job demand could include workload and time pressure.

Bakker and Demerouti (2007) combined Karasek's (1979) Job demand Model and Hobfoll's COR theory to show that job demands and job

resources interactively determine organizational outcomes through worker engagement.

Performing difficult tasks will stimulate learning because it provides an opportunity and motivation to acquire new knowledge (McCauley et al. 1994). They provided evidence that on-the-job experiences form a basis for learning which is not provided by formal training. Three experiences include job transitions, task-related characteristics and obstacles. Supporting this argument, Nyhan et al. (2004) argued that demanding jobs will make individuals more compelled to learn through adaptation.

The primary external stimulus for learning in the workplace is the job demand for learning (Loon & Casimir 2008). This is the pressure placed on individuals to learn new skills in the workplace considering the pace and intensity of change on the job and the rate of learning required to do a job. Job demand for learning can increase because of number of task (multi-skilled worker situation) or a change in task or new task (e.g. continuous improvement project to solve a problem). Therefore job demand for learning can be considered a situational factor in an individual's goal orientation.

2.2.4.2 Job-related Learning

Job-related learning is a set of skills and knowledge acquired to do a job effectively (Loon and Casimir 2008). A lot of job-related learning occurs when performing the actual job (McCauley et al. 1994; Loon and Casimir 2008). Job-related learning is a measure of effectiveness of the worker who has acquired the skills and knowledge that will bring value to the company. This is of value to the company because the same skill or knowledge is usually sought by the company's competitor. Loon and Casimir (2008) found that the need for achievement moderates the relationship between job demand for learning and job-related learning. Job-related learning can be facilitated by increasing the need for achievement through measures such as establishing learning and

performance goals. In other words, learning and performance goals affect the need for achievement which in turns determines the job-related learning.

The idea that learning and performance goals and the individual's need for achievement affect job-related learning is supported by research in the area of adult learning in the workplace (Kolb 1984; Meizrow 1997).

According to Kolb (1984), learning takes place in a real environment that is learner controlled and is characterised by self-direction and freedom from distraction. Experiential learning was described as the process of having (1) concrete experience, (2) reflective observation, (3) abstract conceptualization and (4) active experimentation.

Learning involves three dimensions of content of knowledge (understanding, skills, and abilities), incentive dimension (emotions, feelings, motivation and volition) and social dimension (interaction, communication and cooperation). Learning therefore does not necessarily trigger personal development. For example, learning factual knowledge, however important, may not imply personal development.

Experience is a subjective matter and the learner should be in a situation where he/she is ready and willing to learn. Therefore learning should include all three dimensions above. According to Illeris (2007), all of these three dimensions can be found in the workplace. When people are ready and motivated to learn through learning goals or performance goals, they will invest their personal energy, experience positive or negative emotions which may affect their learning.

Another adult learning theory that supports job demand for learning and job-related learning is Mezirow's (1997) Transformational Learning Theory. Transformational Learning is described as the change in the individual's "frame of reference". People use this frame of reference, which is basically a set of personal assumptions, to interpret and understand the world around them.

As individuals begin to reflect and critically think about their frame of reference (i.e. existing personal set of assumptions), they tend to become more open and receptive to change. However, Meizrow(1997) argued that critical reflection is the key to transformational learning and that positive experience alone does not lead to effective learning.

Mezirow (1997) described two domains of transformation – (1) the ‘instrumental domain’ and (2) the ‘communicative domain’. The instrumental domain involves an understanding of cause-effect relationships and problem solving concepts, for example concepts in engineering, training, trades, other technical skills and management skills. The learner creates meaning through deducting and experimenting.

The second transformation domain of communicative domain involves relationships between people, how people communicate and how beliefs and practices of human communication occur. This domain includes the communication of intentions, values, ideas, feelings and reasoning. This is where people learn about culture and social norms of behaviour (Meizrow 1997). This is significant in that for a transformation to take place (such as job-related learning), there must be a change in frame of reference. This can come about through setting up learning goals and going through the actually engaging in the work in both the instrumental domain of doing the work and communicative domain of cooperating and working well within the organisation.

2.2.4.3 Workplace Learning and Engagement

Workplace learning is seen as an important part of any job where the responsibility for learning lies with the adult learner (Knowles 1965). Workplace learning is a process rather than a discrete activity. Workers have to be proactive and engage in workplace activities.

Crant (2000) showed that pro-activity by workers taking an active role can be characterised by behaviour such as seeking information and creating

favorable conditions of work. Frese and Fay (2001) stated that personal initiative related to learning is linked to self-efficacy and self-esteem.

Learning at the workplace can also be seen as a dispositional factor as the individual may choose to engage or withdraw from work activities. Billett (2001) investigated two factors that shape workplace learning – (1) how organizations create opportunities for learning and (2) how individuals elect to be engaged in these work activities. Participation alone may or may not lead to learning. This depends firstly on the opportunities for workplace learning in terms of job demands, tools and access given to the individuals. Secondly it also depends on the individual's disposition towards the company's goal and his willingness to engage (see Figure 2.7).

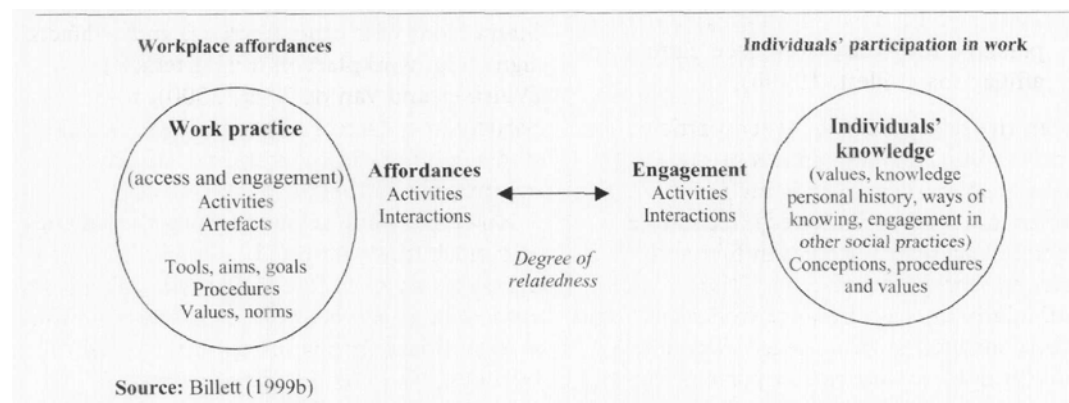


Figure 2.7 Workplace Affordances and Work Engagement (Source: Billett 2001)

Bryson et al. (2006) investigated the correlation between development capabilities at work and engagement, and found that the developmental environment seemed more expansive when individuals are proactive and development becomes more limited when individuals are restrictive.

People who are more engaged at work will experience or feel they have more learning opportunities than those who are less engaged. This will in turn influence self-esteem and self-efficacy (Bryson et al. 2006).

2.2.5 The Need for Achievement

The need for achievement is central to how people think, feel and behave with regards to goal setting. The need for achievement concept was used by McClelland (1961) to describe an individual's desire for accomplishment or to perform a task to desired level of competency. People with a high level of need for achievement seek out difficult tasks in order to feel challenged while people with a low need for achievement choose easier tasks to minimise their risk of failure. The need for achievement has relevance to the concept of goal orientation as it is an attempt to explain the preferred behavioural direction of an individual. The need for achievement can be measured using scales developed for measuring personality traits such as those used by the International Personality Item Pool (2001).

The need for achievement has been used as a basis for explaining work motivation (McClelland 1961; Atkinson 1957). High achievers are not gamblers and they will assume an acceptable level of risk compatible with their abilities. They may choose the middle ground and at the same time think about how to do a job better. McClelland also noted that individuals with high need for achievement will not be bothered with tasks they do not care about. On the other hand, in the case of low need for achievement, Elliot and Harackiewicz (1999) posited that this will lead to an achievement goal grounded in avoidance which will in turn undermine intrinsic motivation (with task involvement being a mediating factor). It is important to note that situational factors such as cultural issues affect the need for achievement and achievement goals and it is therefore important to clarify the framework used (Grant & Dweck 2001).

2.2.6 Goal Orientation, Engagement and Performance

This section describes some of the studies conducted by researchers in correlating goal orientation, engagement and performance. Rothbard

(2001) found that when people are engaged in two or more roles, the first role directly affected engagement in the second role. This means current or previous experience in other roles creates emotions which influence engagement in other roles. Rothbard (2001) went on to postulate that these emotions could be positive or negative in nature. Although Rothbard (2001) did not explain the nature or types of positive or negative emotions, engagement with good performance and engagement in learning can be positive emotions that will stimulate engagement.

McGregor and Elliot (2002) investigated the effects of goal orientation and concluded that goal orientations are important predictors of achievement-relevant variables (such as challenge, aspiration, controllability, calmness before the event and even procrastination) prior to, during and after task engagement. They postulated that task engagement itself is not a single process but a series of unfolding events that comprise different processes before task engagement, during task engagement and after task engagement.

McGregor and Elliot (2002) found that a learning goal orientation predicts many of the achievement-related variables mentioned above. A performance approach is also positively correlated with some of these variables while performance-avoidance is negatively correlated with most of the variables studied. In particular they found that learning goal orientation and performance approach predict absorption.

McGregor and Elliot (2002) suggested that intervention methods for achievement goals should facilitate mastery or learning and discourage performance avoidance. In relation to the learning orientation, Paloniemi (2006) suggested that workplace learning is a source of competence which in turns lead to performance and abilities.

Porath and Bateman (2006) studied the effects on performance of the three types of performance goals and four types of self-regulation in an

academic context. Self-regulation is the process individuals use to guide goal-directed activities.

Self-regulation (Kanfer 1970; Vancouver & Day 2005) comprises feedback-seeking behaviour, proactive behaviour, emotional control and social competence. Feedback-seeking behaviour includes actively gathering information about how to improve and develop mastery skills. Proactive behaviour implies effecting constructive changes rather than passively accepting what is to come. Emotional control includes behaviour to stop anxiety and negative emotions from interfering with the task. Finally, social competence is a measure of the social skills needed to interact with others.

Porath and Bateman (2006) showed that a learning goal orientation and a performance-approach goal orientation can function effectively together and these are important predictors of self-regulation strategies. They also stated that depending on the circumstances, individuals use a combination of self-regulation tactics. Performance-avoidance goal orientation was found to be negatively correlated with self-regulation tactics.

Based on the Social Exchange Theory, Saks (2006) positively correlated with various antecedents of engagement (such as perceived organizational support, perceived supervisor support, distributive justice, and procedural justice) and also found engagement to be a predictor of job satisfaction, commitment and organizational citizenship behaviour. This is illustrated in Figure 2.8.

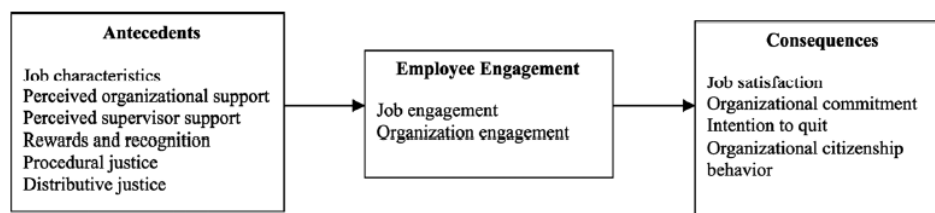


Figure 2.8 Antecedents and Consequences of Employee Engagement (Source: Saks 2006).

Saks (2006) found that rewards and recognition are essential to determining engagement. Rewards and recognition are defined as the perceived benefits that a person receives from a role. These include tangible as well as intangible benefits, which can be taken as the return on their investment in efforts.

Perceived organizational support and perceived superior support (from Figure 2.8) relate closely to Kahn's (1990) definition of safety in that individuals are able to fully take on a task without negative consequence. Distributive justice and procedural justice relate to how an employee perceives he or she will be treated in terms of fairness of decisions and to the perception of the procedures used in the determining outcomes. Distributive and procedural justice therefore also relate closely to Kahn's (1990) concept of safety.

Radosevich et al. (2008) found that goal orientation is positively correlated with cognitive engagement and performance. Cognitive engagement is the process by which individuals direct their cognitive resources towards tasks and activities. Radosevich and his colleagues (2008) claimed that cognitive engagement is the explanatory mechanism between goal orientation and performance.

In Radosevich et al.'s (2008) study, which was conducted in a school using an academic setting, the Cognitive Engagement Battery (Miller et al., 1996) was used to assess cognitive engagement. The study used five self-report scales (for self-regulation, deep and shallow cognitive strategy use, persistence, and effort) which had been used successfully in previous research by Miller et al. (1993) to assess the level of student engagement. Self-regulation measured the extent to which students planned, organized, set goals and monitored their own progress. The deep processing items were concerned with the strategies employed to understand mathematics and related work. Shallow processing items were concerned with the students' strategies for memorisation and rote learning. Student persistence was measured by how the students dealt with class work and, finally, effort was measured by how students feel they

have expended themselves for their current math class. This study was done in an academic setting where the students evaluated themselves using relative self-report scales.

2.2.7 Performance and Innovation.

Welbourne et al. (1998) applied role theory and identity theory to the measurement of performance. In the role theory, roles are positions created by individuals within a social framework. The expectations of the roles within the framework are influenced by the attributes of the person and the context. Welbourne et al. (1998) argued that a performance measurement system based on the role theory provides an accurate measure of performance as it provides for the measurement of personal attributes in a social (organisational) context. Five roles were identified – job role, organisational role, team role, career role and innovation role. In identity theory, saliency of a role also influences the behavioural response of an individual. Therefore an individual's perception of the importance of the role will influence his behavioural response.

Employees' innovation role is particularly important for organisations to be competitive (Welbourne et al. 1998). Being innovative applies not only in an individual's own role but also in their organisational role. For example, useful suggestions or new ways of doing things will help the organisation differentiate itself from the competition. Being innovative and finding solutions are also important for problem solving which is a big part of operational strategies such as Lean/Six Sigma or TQM (Axtell et al. 2000; Zu & Frendendall 2009).

2.3 Current Organisational Development Interventions with Applications in Goal Orientations, Work Engagement, Job-related Learning and Innovation

Organisations trying to improve operations normally follow accepted and successful industry organisational development interventions. Some of the successful models of company-wide change management programs used widely in the manufacturing and service industries include management leadership development, total quality management, lean manufacturing, six sigma and business process re-engineering (Waddell, Cummings & Worley 2001; Liker & Hoseus 2008; Arthur 2005; Zu & Frendendall 2009). This section contains a critical review of some of the thinking behind these techniques and how they are related to themes of employee motivation, work engagement, job-related learning and innovation.

2.3.1 Total Quality Management

Although the concept of quality has existed for a long time, it is only in the past two decades that people has used it as a driver for organisational change. Quality is seen as something encompassing the whole organisation rather than just the production process or the inspection process. All functional areas in the organisation share the responsibility for product quality and share the costs of poor quality.

An important milestone in the development of the field of quality management is the development of the Total Quality Management (TQM) concept. The roots of the TQM movement can be traced to 1950's when Edward Deming assisted Japanese companies in improving their product quality after World War II. He emphasised the role of management in building quality systems and organisation and that quality cannot be achieved without organisational change.

Deming introduced his "14 quality principles" in which quality can drive organisational change. Joseph Juran broadened the definition of quality to include "being fit for use" rather than just conformance to specifications.

He also introduced the concept of cost of quality to measure quality in dollars rather than in subjective terms. Kaoru Ishikawa introduced various quality tools which operators can use effectively in small groups as focal points for analysis and discussion. Armand Feigenbaum in the 1960's emphasised the use of statistical quality control techniques in the production lines (Reid 2010).

The key idea behind TQM is that quality applies to all aspects of the organisation and using it as a unifying goal for all employees to engage in problem solving and improvement processes. Companies that embark on TQM have to empower their employees to be involved in improvement activities through investigation, fact finding, problem analysis, working in teams to find and propose solutions or better ways of doing things.

Setting quality improvement and continuous improvement goals is a way of clarifying goals in a manner useful to the company and borrows the principles of the goal setting theory (Locke 1968). It also helps align employee's intrinsic achievement goals with the company's goals.

Problem solving involves fact gathering, confirmation, analysis and creative solutions and is a form of active learning (Knowles 1965; Kolb 1984; Paloniemi 2006). The use of Ishikawa's quality tools helps streamline the problem solving process into a structured manner.

Engaged employees working on real work problems will be forced to learn. As employees become involved, they are more motivated due to greater autonomy and greater latitude allowed in improving and redefining their own work. This method is supported by the Xanthopoulos's (2007) JD-R model described earlier where job resources and personal resources interact to influence work engagement.

2.3.2 Lean Manufacturing

Lean manufacturing is modelled after the Toyota Production System. The key idea behind lean manufacturing is a set of manufacturing principles based on just-in-time production and systematic elimination of waste. More than just a set of tools, the implementation of a lean system requires an organisation-wide cultural change that encourages continuous improvement or Kaizen activities (Ohno 1988). The system first gained worldwide attention when researchers from the Massachusetts Institute of Technology investigated the reasons why a GM-Toyota, NUMMI, venture located in California had significantly higher productivity than other American GM plants even though both plants have the same indigenous workforce. They attributed this to the Toyota influenced style of management at NUMMI (Womack, Jones & Roos 1990). Further evidence that lean manufacturing system enhance organisation performance and morale are well documented. Engine manufacturer Pratt-Whitney, German car maker Porsche and aircraft manufacturer Boeing and even Starbucks are examples of organisations that have effectively used lean manufacturing (Womack, Jones & Roos 1990).

A lean manufacturing system is best represented by the House of Toyota illustrated below. The house comprises a base (representing operational efficiency tools of levelled production, standard work and continuous improvement), two pillars representing the just-in-time and automation (or use of intelligent automation). The most important of the house is, however, the centre of the house which represents people and respect for people. This necessitates lean organisations to have a culture where people can be respected for their ideas in continuous improvement and solving problems (Ohno 1988).

The implementation of a lean manufacturing system involves culture change based on the creation of mutual trust between organisation and employees through problem solving (Liker and Hoseus 2008). Workers solve problems which bring benefits to the company. In return, the company rewards workers for their efforts.

Continuous improvement involves giving workers a chance to improve work, a chance to learn through active learning. Lean has a wider focus than quality as it also includes waste elimination. Waste elimination may include finding solutions to quality problems as well as making improvements to current processes which do not see any quality related issues.

In order for waste elimination and continuous improvement activities to take place, Liker and Hoseus (2008) argued that organisations must have the proper human resource infrastructure in place for the culture change to occur. There must be proper hiring policies, reward systems and opportunities for employees to apply the tools.

2.3.3 Six Sigma

Six Sigma is a rigorous process improvement strategy first introduced by Motorola in 1986. It was later adopted by many large corporations like General Electric, Raytheon, and Honeywell etc and reported to have significant improvements in reliability, quality and customer service with remarkable financial results (Henderson & Evans 2000; Yilmaz and Chatterjee 2000).

Six Sigma improves the quality of process outputs by identifying and removing the causes of defects and minimizing variability using a structured approach. This approach typically involves the use of structured problem solving steps together with statistical tools. Apart from process improvements, Six Sigma has been extended to product design. One of the strong points of Six Sigma is the use of quantifiable metrics in defining goals and in tracking improvements. In many instances, organizations have combined the use of Six Sigma with Lean techniques to reap the benefits of both intervention methods (Zu and Frendendall 2000).

As Six Sigma involves the use of specialist knowledge in problem-solving and statistical tools, employee training is a key factor in its success. Based on the implementation experience at General Electric, Henderson and

Evans (2000) reported that implementation of Six Sigma programs need to be linked to human resources action. The implementation of Six Sigma programs requires a unique human structure where trained technicians have a role and responsibility in carrying out improvements. Using data collected from 95 U.S. plants employing six sigma, Zu and Friendendall (2009) found that three human resource practices of employee involvement, employee training and staff recognition significantly affected the successful implementation of six sigma programs.

Six Sigma helps organizations to be competitive through a structured process of having employees solve workplace-related problems or make improvements to existing processes. Employees are expected to learn through fact finding and problem investigation (Arthur 2005).

Six Sigma programs also require employees to achieve certain improvement and performance targets as the outcome of these investigation. As the employees tackle these problems, they will learn gain in-depth about their work through the problems they try to solve i.e. job-related learning takes place. The employees are expected to use statistical tools to help them analyse problems and ascertain root causes (Zu & Friendendall 2009). Solution of the problems will require creativity and innovative thinking which will ultimately raise the competitiveness of the business.

Six Sigma is now recognised as a tool for business competitiveness as an ISO standard (ISO13053 Quantitative methods in process improvement – Six Sigma), has been in place since 2011 (ISO 2011). This standard defined teaching, mentoring and management roles including requirements for interpersonal skills, motivational skills and coaching skills as part of the organisational setup in employing Six Sigma. It is therefore relevant to the conceptual model as the application of this intervention would involve learning, performance targets, job-related learning, need for achievement (in goal setting) and being innovative in terms of coming up with solutions.

2.4 Research Questions

The literature review covers a wide area of knowledge. Through the literature review, it appears that there are knowledge gaps in linking goal orientation to work engagement and to job-related learning. There are also gaps in understanding how performance and particularly innovation at work is affected by job-related learning and the need for achievement.

Firstly, work-related learning is a measure of competence and therefore a predictor of performance. What is the role and mechanism of work engagement in determining workplace learning and performance? Knowing that workplace learning affects performance, how does achievement motivation (i.e. the need for achievement) affect the relationship between learning and performance? In particular, how does the need for achievement affect the relationship between job-related learning and innovative aspect of performance?

These knowledge gaps are discussed in detail in sections 2.4.1 to 2.4.4. Section 2.4.1 discusses knowledge gaps related to work engagement and performance and section 2.4.2 discusses knowledge gaps related to goal orientation, work engagement and job-related learning, through which the first research question and hypothesis were then developed. Section 2.4.3 discussed the gaps in our understanding of job-related learning and innovation, through which the second research question and hypothesis were then developed.

2.4.1 Engagement and Performance

The ASTD (2008) report on employee engagement focused on a number of key issues in the fields of workplace learning and performance. The report was based on survey data from 776 high-level human resource and learning professionals. It identified work engagement as one of the most critical issues in organizations today and has linked engagement to

employee satisfaction, organizational performance, and bottom-line business results.

A highly engaged workforce has a dramatic impact on an organization's ability to grow and succeed. The ASTD (2008) report found that only a third of the workforce is highly engaged, four in ten are moderately engaged and one fourth is minimally engaged. Despite the importance of engagement, few workers report that they are highly engaged and there is little information on how to engage workers. The report highlighted a need to understand links between engagement and organizational success. The report also found that learning is closely linked to work engagement. The provision of training opportunities and the removal of obstacles that prevent people from performing were important. Sonnentag's (2003) survey of six public institutions found that work engagement is directly related to taking initiative and pursuing learning goals. Levinson (2007) suggests that organizations with high employee work engagement have cultures of learning and employee development.

Similar earlier research by the Gallup organization (Harter 2002) also found that engagement correlates highly with performance. Companies that reported the top 25% of engagement typically had higher earnings per share. While it was suggested that engagement is produced by specific aspects of the workplace, the individual also brings along personal motivation, perceptions, emotions and well being. Therefore it is important to investigate the mechanism of engagement starting with the role of personal motivation on behaviour. It should also be noted that the literature review showed that researchers have used different ways to define and measure work engagement (e.g. Schaufeli et al. 2002, Towers-Perrin 2006, ASTD 2008).

2.4.2 The Relationships Between Goal Orientation, Work Engagement and Job-related learning

Dweck and Leggett (1988) described a mechanism involving the cognitive and affective effects of goal orientation on behaviour. They showed that individuals with different goal orientations setup different response patterns in their behaviour. Goal orientation creates frameworks with which individuals interpret information and respond to events (Dweck & Leggett 1988). The cognitive aspect of the framework is about how individuals perceive their situation. Individuals with different goals orientation setup different framework and approach situations with different concerns. They ask different questions and seek different information to address these concerns. The interpretation of the information they received also depends on what are their focal points.

People with a performance goal orientation desire to achieve highly on indicators of success. A person with a performance goal orientation seeks information about capabilities, competence or performance. They seek to gain positive judgments of their competence or they may avoid challenges which will give negative outcomes. Positive information or success could lead to sense of pride, achievement and worthiness (Dweck and Leggett 1988). A person with a learning goal orientation seeks information concerning improvement and mastery. They seek feedback on their capabilities with a view to enhance performance. Failure or success is taken as inputs to an improvement process (Dweck and Leggett 1988).

Goal orientation also influences affective reactions in people. A performance goal oriented person would take failure to mean low abilities and this in turn could lead to low self-esteem, low self-confidence and even a sense of shame (Dweck and Leggett 1988). Performance-avoidance behaviour could also stem from devaluation of the task leading to boredom, anxiety and even defiance (Silver, Dwyer & Alford 2006). A learning goal oriented person would normally have more allowances for failures as they may invest greater effort for the sake of mastery and may

have even some sense of pride in undertaking challenges e.g. battle cries (Dweck and Leggett 1988).

Performance and learning orientations could influence differences in task choice in individuals. Depending on one's cognitive and affective inclinations, one may choose an easy task to avoid negative judgments and to get affirmation of ability. One may choose challenging tasks for the purpose of proving competence, building abilities or show some standard of excellence. A person's goal orientation may therefore produce different reactions to task choice.

Engagement was defined as positive, fulfilling state of mind characterised by vigor, dedication and absorption (Schaufeli & Bakker 2002). Vigor, dedication and absorption can be correlated to the effort, attention and persistence mentioned by Dweck and Leggett (1988). Tables 2.1 and 2.2 show that some of these behaviours are consistent with the definition of engagement suggested by Schaufeli et al. (2002). Engagement defined in this manner extends from the definition of burnout defined in the Maslach Burnout Inventory (Maslach & Leiter 1997) and represents the opposite end of the spectrum from burnout.

Engagement deals with the behaviour of people when they channel their energy into the physical, cognitive and emotional aspects of work (Schaufeli & Bakker 2002). There is an activation dimension which can range from exhaustion (in the case of burnout) to vigor. Vigor is characterised by high energy levels, mental resilience and a willingness to invest energy to work (Schaufeli & Bakker 2002). Some of the responses described by Dweck and Leggett (1998) such as task selection, amount of effort or resources allocated to a task are similar to the qualities of vigor.

Dedication belongs to the identification dimension of engagement. Identification can range from cynicism (in the case of burnout) to dedication. Dedication is characterised by a person's sense of pride, significance, inspiration enthusiasm and challenge in a job (Schaufeli &

Bakker 2002). These characteristics also coincide with the responses described in the goal orientation frameworks (Dweck and Leggett 1988).

For a performance-approach goal-oriented individual, challenge and significance may be present (Elliot & Harackiewicz 1996). In a performance-avoidance goal oriented individual, a sense of defiance, boredom and lack of enthusiasm may be present (Elliot & Harackiewicz 1996). In a learning goal oriented individual, pride, challenge and significance may be present (Elliot & Dweck 1988).

Dweck and Legget (1988) included self-efficacy as a facilitator and predictor of performance. However, Schaufeli and Bakker (2002) argued that efficacy or lack of efficacy is an aspect of burnout. Work engagement is closely related to but is different from burnout. Therefore, self-efficacy was omitted in their study of the engagement construct and was instead replaced by a dimension called absorption, which is a measure of how immersed or focused a person is on the task.

The relationship between goal orientation and engagement is supported by Rothbard (2001) who found that positive and negative emotions from another role can affect engagement in a task. Performance goal orientation and learning goal orientations are both positive emotions with good intentions which can lead to work engagement. Learning goal orientations have been directly correlated with work engagement (Billet, 2001; Bryson et al., 2006).

Porath and Bateman (2006) showed that goal orientations are important predictors of self-regulation. Self-regulation includes feedback seeking behaviour, proactive behaviour and emotion regulation. Feedback seeking and proactive behaviour may be an indicator of presence of vigor or energy level of an individual at work. Emotion regulation, which was defined as the ability to control anxiety and negative emotions, may be an indicator of dedication. Dedication was defined as pride and opposite to cynicism (Bakker& Schaufeli 2002).

Saks (2006) gave further evidence by describing the antecedents of engagement as factors of job characteristics, organizational support, superior support, distributive and procedural justice and rewards and recognition. Rewards and recognition relate closely to the expectations upon successful outcome. Therefore the goal orientations can be associated with expected outcomes of the individual.

Organizational support and superior support, according to Saks (2006) is the same as Kahn's (1990) definition of safety. It refers to what the employee can rely on should he/she fail. It associates closely with performance-avoidance in the case of low levels of organizational or superior support.

Procedural and distributive justice refer to the fairness of outcomes of decisions. Therefore this also relates closely to how worker perceive he will be judged. This will impact the way a person decides on the approach to performance. The person may choose to fully engage or avoid negative evaluations (i.e. similar to having a performance-avoidance goal orientation).

Xanthopoulou (2007) added personal resources as an additional construct in the expanded JD-R Work Engagement Model. Personal resources (such as self-esteem and self-efficacy) are the strength and characteristics which the individual will draw on to perform a job. Optimism, a positive emotion, is one of the personal resources mentioned in the JD-R Model. Optimism refers to the expectations of the individual and directs the goals of individuals. Goal orientation is a goal directing characteristic and influences the optimism of an individual.

Finally, Radosevic et al. (2008) found that goal orientation is positively related to cognitive engagement and performance in academic setting. Cognitive engagement is defined in terms of self-regulation, deep and shallow strategies, persistence and effort. Persistence and effort can be closely associated with vigor and dedication.

From the above it can be seen that there are gaps in the current literature. It can be seen that goal orientation of an individual can somehow be correlated with work engagement since the three types of goal orientations can cause positive or negative emotions. As described above, various aspects of the three constructs of work engagement (i.e. vigor, dedication and absorption) are closely related to the responses of an individual's goal orientations (e.g. Dweck & Legget 1988; Elliot and Harackiewicz; Porath & Bateman 2006; Radosevich et al. 2008)

Job-related learning takes place when employees do their work (Loon and Casimir 2008). In fact, it was shown that work experience is the main factor in influencing workplace learning (Kolb, 1984; Paloniemi 2006). Therefore as employees get involved in their work and perform their assigned tasks, they gain experience, resulting in job-related learning.

Goal orientation influences the cognitive and affective reactions in people (Dweck & Leggett 1988). These reactions (which could be positive or negative emotions) could be linked to work engagement (Rothbard 2001; Porath & Bateman 2006). Work engagement could affect the performance of the task (Xanthopoulou 2007; ASTD 2008). Performing the tasks itself will lead to job-related learning (Kolb 1984; Paloniemi 2006).

It follows that people with a learning goal orientation will likely make deliberate attempts to master new skills as they are likely to have positive feelings about outcomes of learning (Dweck & Legget 1988; Button et al 1996). Performing the tasks is likely result in job-related learning. Learning then positively promotes performance as employees are able to do a job better.

People with a performance-approach goal orientation seek to excel and do better than their peers (Elliot & Harackiewicz 1996; Silver, Dwyer & Alford 2006). They may have positive emotions about doing better than others which in turn lead to high levels of energy and dedication (Radosevich et al. 2008). As their expectation is that they will perform well in their jobs

(since they expect themselves to do better than others), it is likely that they will also learn in the process of performing the tasks (job-related learning).

A person with a performance-avoidance approach goal orientation seeks to minimise negative evaluations of their work (Elliot & Harackiewicz 1996; Silver, Dwyer & Alford 2006). Performance-avoidance goal orientation was reported to have undermined intrinsic motivation (Elliot & Harackiewicz 1996). People with a performance-avoidance goal orientation may have negative emotions about their work since they avoid challenges in order to avoid a negative evaluation. As they avoid negative outcomes and challenges, it may lead to lower levels of performance and job-related learning.

The first hypothesis for this research is therefore as follows:

H1: The relationships between the three types of goal orientation and job-related learning are mediated by work engagement.

2.4.3. Job-related Learning and Innovation

Goal orientation has been found to be a useful predictor of performance in past research (e.g. Dweck and Leggett 1988, Button & Mathieu 1996, Silver, Dwyer & Alford 2006 etc). Goal orientation influences the way an individual regulates cognitive, affective and behavioural processes. This directly influences the results or performance.

Many studies that have been conducted by professional research organizations (e.g. Perrin Towers, Gallup Organisation, ASTD etc) have found work engagement to be an important factor for influencing performance. In these studies, engagement correlates closely to individual, group and organizational performance in all areas (finance, human resources, manufacturing, and quality control). Although the

definition of work engagement was not uniform, these studies established a relationship between an employee's connection to his/her work and organizational success and performance.

Performance can be defined and measured in many ways. A role-based performance measure uses job roles, team roles, organization roles, career roles and innovation roles. Innovation roles are important as organizations face increasing global competition. Innovation refers to finding new novel ways of doing things or solving problems, which is also a key feature of learning organizations and organizations involved in continuous improvement activities. Innovation leads to differentiation which in turns makes companies more competitive (Welbourne et al. 1998).

Current best business practices in operations management such as TQM, Lean techniques and Six Sigma require employees to be involved in a certain degree of innovative thinking in terms of making suggestions for improvements and problem solving. Problem solving, in particular, is a structured process involving workplace information gathering, structured analysis and finding novel ways to solve problems or improve processes. (Liker & Hoseus 2008). The link between workplace learning (through problem solving) and innovation is supported by research evidence that problem-based learning is important for self-directed learning where individuals take responsibility for their development critical thinking skills, analytical skills, generation of hypothesis, identifying necessary information and making reasonable ways to solve problems (Loyens, Magda and Riker 2008).

2.4.4 The Role of the Need for Achievement

McClelland (1961) identified human motives as relating to the need for achievement, power and affiliation. These needs can be acquired or learned during an individual's lifetime. The need for achievement is described as the goal to be successful with some standard of excellence

(Atkinson 1964). It can also be applied to accomplishing a task successfully, a desire to master something or a desire to surpass others (Daft 2008). The need for achievement is manifested in intrinsic motivation through the enjoyment or interest in an activity for its own sake (Lepper 1981).

Achievement goals in the form of performance approach and mastery goals were found to be predictive of intrinsic motivation. However, performance avoidance goals undermine intrinsic motivation (Elliot & Harackiewicz 1996). Other theorists found that performance goals have negative effects on intrinsic motivation at low levels of competence (Butler 1992).

De Pillis (1998), in his study on entrepreneurial behaviour, suggested that the need for achievement, which is also dependent on cultural background, is important in determining the innovative behaviour of entrepreneurs. Xanthopoulou (2007), in the expanded JD-R Model, included motivation as a factor which predicts job performance.

Since intrinsic motivation affects performance, it is suggested that need for achievement needs to be investigated as a factor in the mechanism between job-related learning and performance (Innovation). It is proposed in this study that the need for achievement moderates the effect of job-related learning on innovation as people with high need for achievement will want to innovate more as they want to be recognised as being successful with regards to some standard of excellence (McClelland 1961; Atkinson 1964).

Experience is the major factor in workplace learning (Paloniemi 2006). Individuals with greater engagement (i.e. individuals who invest more energy in their work, who identify with and believe in their work) experience more workplace learning and job-related learning. Intrinsic motivation in learning has been the subject of much research (Paloniemi 2006; Billet 2001). It is natural that individuals with high need for

achievement will want to learn and master tasks with greater complexity. Workplace learning should therefore lead to higher levels of performance (which includes innovation). It then follows that the strength of relationship between job-related learning and innovation should increase with higher levels of need for achievement. The second hypothesis is therefore as follows.

H2: The relationship between job-related learning and innovation is moderated by the need for achievement. Specifically, the strength of the positive relationship between job-related learning and innovation increases as need for achievement increases.

2.5 Hypotheses

- i) Hypothesis 1: The relationships between the three types of goal orientation and job-related learning are mediated by work engagement.
- ii) Hypothesis 2: The relationship between job-related learning and innovation is moderated by the need for achievement. Specifically, the strength of the positive relationship between job-related learning and innovation increases as need for achievement increases.

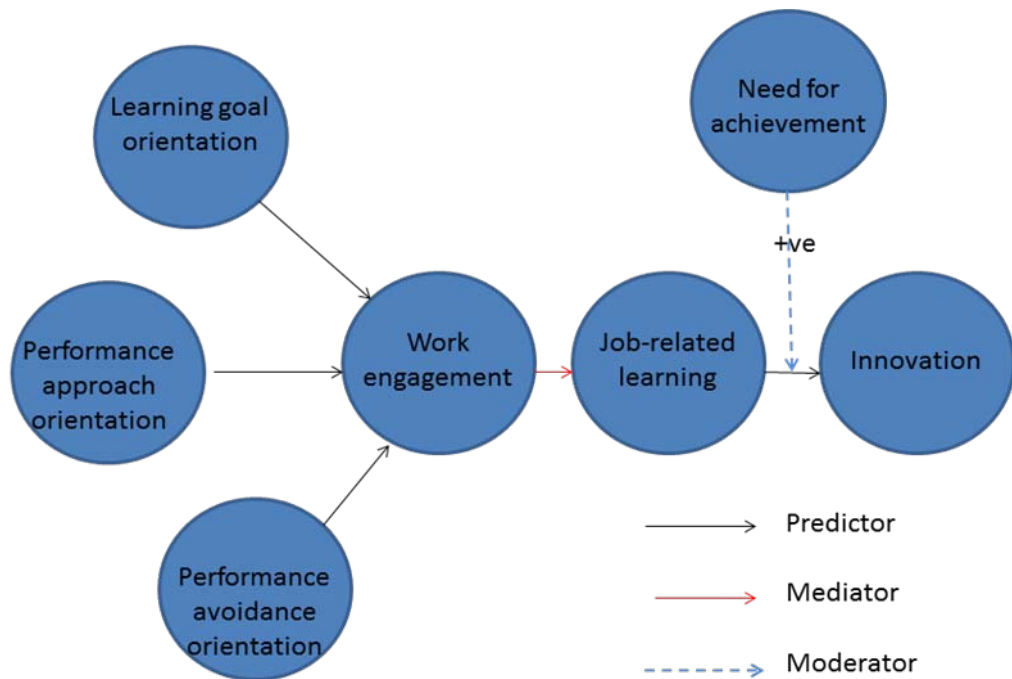


Figure 2.9 Proposed Model of the Relationships between Goal Orientation, Work Engagement Job-Related Learning, Need for Achievement, and Innovation.

Chapter 3 Research Methodology

3.1 Introduction

This chapter has nine parts and contains a discussion of the methodology used in the study. Section 3.2 provides a discussion of the research principles and the justification for the research principles used in this study. Section 3.3 provides an overview of research design and the justification for the use of a cross-sectional design. Section 3.4 contains a discussion on the sampling methods and a justification for the snowball sampling method used. A discussion of the data-collection process is provided in Section 3.5 . Section 3.6 contains a discussion of the various scales used to measure the constructs in the study. Section 3.7 contains a discussion on the design of the online questionnaire used. A discussion of the ethical considerations for the study is provided in Section 3.8. A summary of the research method used in the study is provided in Section 3.9.

3.2 Research Principles

A proper inquiry involves the use of an appropriate research methodology to provide answers to the research question(s). Research methodology comprises both principle and practice. The principles of the methodology lay down the direction of the thinking process in the inquiry. The epistemological considerations are concerned with the nature of knowledge and its validity. The ontological considerations are the viewpoints about reality and the role of players who construct reality (Bryman & Bell 2008). The assumptions made in these two considerations form the basis of the inquiry, the thinking direction and the practice and execution of the research (Williams and May 1996).

3.2.1 Epistemological Considerations

Epistemological considerations justify the question of legitimate knowledge (Blaikie 1993). Epistemology provides the guiding rules of the inquiry (Pawson 1999) by defining what is regarded as acceptable knowledge. There are two epistemological viewpoints in business research, namely a positivist viewpoint and an interpretivist viewpoint.

3.2.1.1 Positivism

In the positivist viewpoint, researchers seek to extend the methods used in the natural sciences to the realm of social sciences. The basic assumption is that reality is objective, singular and separate from the researcher. Knowledge that be confirmed by the senses can be warranted as knowledge. To be objective, researchers must be detached from the research, be unbiased and not prejudiced (Bryman & Bell 2008).

As the objective world can be observed and measured, quantitative methods are used to seek out causal relationships, and to explain and predict human activities and events in the social world. The resulting research plan is usually rigorous, rigid and based on research hypotheses. The research hypotheses are deduced from both theories and what is already known. This is then subjected to empirical scrutiny through a process of data collection and statistical analysis (Bryman & Bell 2008).

Observations by researchers may be distorted by bias and prejudice. Positivism overcomes this through the use the strict use of measurement and control in experiments, operational definition, replication and hypothesis testing (Kellingner 1986). Positivism gives a causal and factual view of reality (Burns 1996). Hence propositions that cannot be measured or observed cannot be tested. The strengths of the scientific method therefore lie in the use of factual observation in precise and controlled settings.

The main advantage in using a positivist approach is that the research is based on objective information. As the research is structured there will be

more consistency in the measurement of concepts and a greater possibility of replicating the results (Bryman 1984). However, the main disadvantage of a positivist approach is that it disregards human emotions and meanings attached to events.

3.2.1.2 Interpretivism

According to interpretivism, knowledge and understanding depend on knowing the perspectives of people. Interpretivists are concerned with phenomenology or how individuals make sense of the world (Bryman & Bell 2008).—Investigation therefore involves an effort to understand how people make sense of what is happening around them and what they deem to be important. As the researcher interacts with the research subjects, values and context becomes important aspects of the research.

The advantage of using an interpretivist approach is that it takes into consideration emotions, values and interpretations of people who are being observed. This is an important consideration in social sciences because human actions have meanings and people act on the basis of the meanings they attribute to their acts and the acts of others (Bryman & Bell 2008).

The use of an interpretivist approach, however, can lead to researcher bias. Citing the example of Benyon's qualitative study on the Ford factory at Dagenham, Bryman and Bell (2008) noted that the development of a close relationship with the research subjects may cause researchers some difficulties in disentangling from their subjects' perspectives. In addition, given the dynamic nature of the social world, the results would also be difficult to replicate (Bryman & Bell 2008).

3.2.2 Ontological Considerations

Ontology establishes from first principles the assumption about what is reality and how the researcher views the world (Bryman & Bell 2008). The

consideration here is whether organisations should be viewed objectively or be viewed as a social object constructed from the perceptions and actions of the actors like the workers and the management (Swanson 2005b, p. 21). Ontological considerations address how reality is constructed and the components of reality. There are two ontological positions used in business research, namely objectivism and constructionism (Bryman & Bell 2008).

Objectivism assumes that social phenomena are independent of the social actors. Reality is detached from people. Organisations and cultures have an existence of their own and are external to the social actors in it (Bryman & Bell 2008).

Constructionism assumes that people are consistently changing and constructing events and history. Social interaction of the workers is important and insights can be drawn from symbolic interaction and the ensuing social order (Strauss et al. 1973).

Organisational culture can play a part in shaping people's beliefs. Culture can be seen as a point of reference that shapes peoples thought's process and actions (Becker 1982). People's actions and thoughts in turn shape the events and outcomes. Organisational culture can therefore also be created continuously as people adapt and change.

3.2.3 Quantitative and Qualitative Research

The Positivist approach typical places emphasis on operational definitions, objectivity, replicability and causality (Bryman 1984). Concepts can be operationalised through the use of instruments like questionnaires and surveys. Objectivity can be maintained by the distance between the observer and observed using questionnaires. Replication can be achieved by using the same research instrument and methodology in another context. Finally, causality can achieved through the use of experiments in

which causal variables can be manipulated or controlled. Research of this nature is frequently described in positivist theory as warrantable knowledge (Bryman & Bell 2008). Due to these reasons, positivist studies are normally quantitative in nature.

The interpretivist approach, on the other hand, emphasises the need to see the world through the 'eyes of the actor' (Bryman 1984, p.77). This necessitates the involvement of the researcher in understanding the context of actions and meaning systems employed. Research of this nature therefore tends to be more fluid and relies on a qualitative approach.

3.2.3.1 Advantages and Disadvantages of Quantitative Methods

The use of quantitative methods has many advantages. The use of numerical data implies an ability to consistently measure concepts which provides for a consistent yardstick (Bryman 1984, p. 77). The proper use of various instruments like surveys and questionnaires can yield data with good reliability and validity. Data collected properly can be analysed statistically which can be used to show causality and relationships. A strong feature of quantitative methods is that outputs from statistical analyses can be used to explain cause-effect relationships. Hypotheses that have been developed can be supported or rejected in a systematic and logical manner (Oakley 1999, p. 156). The objective nature of quantitative methods also means that experiments can be replicated by others. (Bryman 1984)

One of the main disadvantages of quantitative methods is that they fail to distinguish people and social institutions (i.e., the social world) from the natural world. People have the capacity for interpretation and self-reflection and should therefore be seen differently from atoms and molecules that are observed in the natural world (Schultz 1962).

A common criticism that has been leveled at quantitative methods is that they tend to give an artificial and false sense of accuracy and precision.

The measurement of concepts is seen as flawed as the connection between the measures and the concepts are assumed rather than real (Cicorel 1964). Another criticism of quantitative research is the assumption that respondents will understand or interpret questions in a similar manner when in reality respondents may not do so. The use of fixed choices in the answers to questions also pose a problem as it limits interpretation and tends to set the research into confined narrow areas (Bryman & Bell 2008). Concentrating on the analysis of relationships between variables creates a static world which is independent of the people's lives as it omits the meanings of events and their connection to real world (Bryman & Bell 2008).

3.2.3.2 Advantages and Disadvantages of Qualitative Methods

Qualitative research emphasises words rather than numbers. The main advantage in using qualitative research is that it could provide a more realistic interpretation by seeing the research question through the eyes of others. Schultz (1962) argued that as people are capable of attributing meaning to events, an interpretive approach is more appropriate in social sciences.

Qualitative research provides a rich description of events and gives an explanation as to what goes on in the research setting. It provides context to social behaviour. Qualitative research emphasises processes and is able to explain how patterns are formed and how events unfold over a period of time (Pettigrew 1997).

As the tools used in qualitative research has less structure, qualitative research allows the researcher to keep an open mind to ideas which were not considered before. The researcher also has the flexibility to change course if necessary. As the qualitative researcher does not ask highly specific questions in advance, it does not limit the scope of the research to a confined area (Bryman & Bell 2008).

The main criticism against the use of qualitative research is that it is highly subjective as it relies on the researcher's interpretation of observed events and what they regard as significant and important (Bryman & Bell 2008). The highly unstructured nature of qualitative research and the contextualised setting also mean that experiments may be difficult to replicate. Another disadvantage of qualitative research is the relatively small sample size and contextualised research setting may limit the generalisation of findings (Bryman & Bell 2008).

3.2.4 Justification for a Positivist Approach

This inquiry seeks to understand the mechanism of work engagement in organisations in relation to goal orientation, job-related learning and innovation. The antecedents involved in work engagement and the effects of goal orientation have been rigorously investigated using quantitative methods in various previous studies (e.g., Scaufeli & Bakka 2002; Dweck & Leggett 1988; Silver, Dwyer & Alford 2006). The aim of this research is not to discover new patterns but to confirm broad principles put together based on prior research, which will explain the relationships between goal orientation, work engagement, job-related learning, the need for achievement and innovation.

Although social interaction within organisations is recognised, it is not the intention of this research to observe the behaviour of individuals at work. The need for achievement and goal orientation both have a long history in the academic literature (e.g., McClelland, 1961; Dweck & Elliot 1988). The dynamic nature of organizations also makes it impossible to account for every other variable which may contribute to work engagement. Limiting the investigation to a few key variables is therefore necessary to simplify the research. Quantitative methods can then be used for a more focused and unbiased investigation. A positivist approach is therefore more appropriate for examining the relationships between goal orientation, engagement, job-related learning and innovation.

A simplified view of the organization as one of processing of inputs to outputs (Morgan 1996) would enable universal relationships to be established. The way in which researchers visualise organizations may affect how they frame the research (Swanson 2005a , p.12).

An organization may be seen as an adaptive system comprising various process subsystems (Rummler and Brache, 1995). Other researchers have likened the organization to a machine comprising parts with clear input-process-outputs (Morgan 1996).

This research inquiry is framed such that human capital is one of the sub-systems in an organization. Goal orientation, work engagement and need for achievement function as inputs to this sub-system. Using this line of reasoning, an objective approach is therefore adopted in this inquiry.

The research seeks to demonstrate how inputs (i.e., goal orientation, work engagement, job-related learning, and need for achievement) influence innovation, which is part of the output of this sub-system. A positivist and objective approach using quantitative methods would be most appropriate as statistical methods can be used to investigate these correlations and causal relationships. An interpretative approach is excluded as the direct observation or interpretation of events is not needed.

3.3 Research Design

Research design refers to the broad framework used for the collection of data and the analysis of data (Bryman & Bell 2008). The research design guides the execution of the research method and analysis of data. There are five types of research design: 1) experimental design 2) longitudinal design 3) cross-sectional design 4) case-study design and 5) comparative designs. The choice of research design depends on the aim of the study. A study can have several aims such as examining whether there are

causal relationships, generalise behaviour, understand behaviour and meaning, or an appreciation of a social phenomenon. Several types of research design are used in business research and these are explained in Section 3.3.1 (Cavana, Delahaye & Sekaran 2001; Bryman & Bell 2008).

3.3.1 Types of Research Design

- 1) Experimental designs are observational studies that make attempts to change the experimental setting and to manipulate variables in order to observe the effects of one variable on another. True experimental studies have good reliability, validity and replicability. However, it is difficult to implement experimental research in business research because it is hard to obtain the level of control needed when dealing with real organisations.
- 2) Longitudinal designs are usually employed to map changes in variables. Longitudinal designs are used to obtain data on mechanisms and processes through which change is created (Pettigrew 1990). Longitudinal designs are good for capturing data over a period of time. However, the main disadvantage in using a longitudinal design is the time and cost involved.
- 3) Cross-sectional designs involve the collection across several cases at a single point in time. Quantifiable variables are usually used in the data-collection process. Such data can be easily collected using instruments such as questionnaires and surveys, across several locations. The main advantage is that it can be replicated easily in different contexts. The main disadvantage, however, is that there is no time ordering as such it is only possible to examine relationships between variables.
- 4) A case-study design involves, in most situations, the intensive analysis of a single case, a single organization or location or person or event. A case study is usually concerned with complex questions that are peculiar to the case itself. The main disadvantage of a case study is often a

question of its validity, reliability and replicability and whether the findings can be generalised.

5) Comparative designs allow a direct comparison between two or more cases employing similar research methods. Comparative designs provide a good basis for explaining similarities and differences in different contexts.

3.3.2 Justification for a Cross-sectional Design

This study involves the use of quantitative methods to provide a systematic investigation of social phenomena using statistical and computational means.

Firstly, this study does not involve an experiment where variables can be manipulated and observed. The researchers are merely observers of the social process taking place and make no attempts at intervention. Therefore an experimental design is not relevant in this inquiry.

This research is also not a case study involving a single organisation or a single location. It is also not about observing processes or mapping changes over a period of time. Case-study designs do not provide the coverage needed to ensure that the sample is representative of the population. As there is no start and end situations for comparison, the research design should not be a longitudinal study. A comparative design would also not be appropriate as no comparison is being made between organisations or situations.

The most appropriate design would therefore be a descriptive cross-sectional study whereby the research model can be verified through the collection of data and data analysis using statistical methods. In this cross-sectional design, data collection can occur via sampling across several locations at around the same time.

3.4 Sampling Methods

Sampling methods are generally classified as probability or non-probability. In probability sampling, the sampling is random and each case has an equal chance of being sampled. As such the sampling errors are known in probability sampling and it is possible to statistically determine the characteristics of the population from the sample (Saunders, Philip & Thornhill 2003). In non-probability sampling, sampling is not random and the extent to which the sample being representative of the population is not known. With non-probability techniques, it is generally not possible to draw statistical inferences about the characteristics of the population although it is possible to generalise (but not statistically) from the samples drawn (Saunders, Philip & Thornhill 2003).

3.4.1 Probability Sampling Methods

Probability sampling methods include random sampling, systematic sampling and stratified sampling. Every member of the population has a chance of being sampled (Cavana, Delahaye & Sekaran 2001).

The simplest method of probability sampling is random sampling wherein every element in the population has an equal chance of being sampled. The advantage of random sampling is that results can be easily generalised. However it is not efficient and may be difficult to implement when the population is large. (Saunders, Philip & Thornhill 2003)

Another method of probability sampling is systematic sampling which requires every other n^{th} item of the population to be sampled. The disadvantage is that the sampling frame may not be easily available. Systematic biases may also be introduced if the sampling frames are

ordered. For example, if the sampling frame comprises a list of bank clients listed in order of husband followed by his wife, then sampling every fourth person would result in only males being sampled. The list would first need to be re-ordered if systematic sampling is used (Saunders, Philip & Thornhill 2003).

In stratified sampling, the population is first divided into representative segments from which subjects are drawn (Saunders, Philip & Thornhill 2003). This practice allows for comparison across different segments as the subjects drawn are more representative of the stratified segments. An example of a stratified sampling would be to sample an organisation by departments and employee grade. However it could be time consuming as all segments need to be adequately sampled.

Cluster sampling refers to sampling from groupings of units of the population rather than the population itself. For example, a nationally representative sample of 500 employees from the top 100 companies in the country may be drawn by first selecting a sample of 10 companies and then randomly selecting 50 employees from each of these 10 companies (Bryman & Bell 2008, p 188).

Finally, area sampling is the practice of taking samples from a defined area or locality. It is cost effective and offers detailed information on a topic being studied.

3.4.2 Non-probability Sampling Methods

It is not always possible for sampling to be perfectly random and it is also not always possible to ensure that each case has an equal chance of being included in a sample. In this case, non-probability sampling is then used to create sampling frames (Saunders, Philip & Thornhill 2003). Non-

probability methods include convenience sampling, quota sampling and snowball sampling (Cavana et al., 2001; Bryman & Bell 2008; Saunders, Philip & Thornhill 2003).

In convenience sampling, the most easily available subjects are chosen. For example, a lecturer of a university researching on how managers deal with ethical issues in business decisions may administer a survey to a part-time MBA class where the participants are likely to be managers (Bryman & Bell 2008, p.198). Convenience sampling is quick and convenient but the results are not generalisable.

In judgement sampling, the subjects are selected based on the opinion of an expert. This is good as a meaningful start point in some investigations where it is difficult to define the population however it may introduce bias as the selection is entirely decided by the expert (Cavana et al., 2001).

In snowball sampling, an initial group of suitable subjects are first identified. More subjects are then drawn through referrals from this initial group. For example, this method was used when a researcher wanted to create a sample of visitors to the Disney theme parks (Bryman & Bell 2008, p. 200). This has the advantage of convenience and where subjects are hard to find. However the results may be biased as the sampling is not random. The main disadvantage is that it is not possible to know the extent of the population being included in the sample.

Quota sampling refers to the practice of choosing a pre-determined quota of subjects from pre-determined targeted groups. This is normally useful where individuals from certain groups must be sampled for example pensioners, married people (Saunders, Philip & Thornhill 2003, p.173).

3.4.3 Rationale for the use of Snowball Sampling

The target population for this study is employees in the manufacturing industry. Snowball sampling, which is a non-probability method, was chosen as the sampling method as it dramatically reduces the cost and increases the chance of getting respondents.

The researcher is a consultant in the manufacturing industry and has worked in this industry for the last twenty years. He is well known by many other senior employees in this industry. As a result, the snowballing sampling method, which is a non-probability one, was used to recruit participants. This technique involved asking participants for referrals to potential participants.

3.4.4 Sample Size

In general, companies in the manufacturing industry have a similar objective of converting raw materials into processed goods. While it is recognised that the specific work conditions and job requirements in each and every organisation will differ, it is not the aim of this study to account for the effects of these differences. Instead human resources within the manufacturing organisation are studied as a sub-system in itself. The effects of goal orientation, work engagement, job-related learning, innovation and the need for achievement within this sub-system are to be studied. Therefore, a small and carefully chosen sample representative of the population should be sufficient for a meaningful analysis.

A small sample may be enough to represent a good cross section of the population as the concepts involved in the study are quite general and applies to all manufacturing sectors. As recommended by Chin (1998), the number of participants should be at least 10 times the number of items in the largest scale. Based on the questionnaire, a minimum of 200 responses are required as there are 20 items in the goal orientation construct.

3.4.5 Method and Procedure

Initially, senior employees in the industry were approached to get approval for their employees to participate in the survey. These senior employees were then asked to refer employees to participate in the survey (see Appendix B). Invitations to employees were sent via e-mail which contained a link to a web-based survey tool.

The senior employees of these organisations were also asked to recommend organisations that may be interested in participating in the survey.

3.5 Data Collection

Section 3.5 contains a discussion of the data collection done in the study. Section 3.5.1 provides a discussion of the data collection method, the type of questionnaire used and the online method of collecting the data. Section 3.5.2 contains a discussion on how the companies and respondents are selected. Section 3.5.3 contains a discussion on Qualtrics, which is the Web-based survey tool used in the study. Section 3.5.4 contains a discussion on the respondents' consent to participate in the study. Section 3.5.6 provides a discussion on how the data collected from the study are kept confidential. Finally the justification for choosing this data-collection method is presented in Section 3.5.7.

3.5.1 Data Collection Method

Data for the research are based on employee's self-perceptions and how they view their orientations at work, their engagement level, their need for achievement, their job-related learning, and their innovativeness at work.

A self-report questionnaire was used. The survey questionnaire uses a five-point Likert scale for all of the items. A survey questionnaire was chosen as the research instrument because it is easy to administer and provides anonymity to the respondents.

The Participant Information Letter (see Appendix C) which contained the electronic link to the questionnaire was sent out in e-mails to respondents by the companies themselves. At the companies' request, the researchers also mailed some of the survey packages to the respondents directly. The Participant Information Letter essentially contained information pertaining to the purpose and conduct of the survey as well as a link to the survey site.

Other data-collection methods, such as a pen-and-paper survey using a reply-paid envelope were also considered. However, they were not adopted because they were too cumbersome to administer and did not provide enough safeguards for the anonymity of respondents. Other methods like a telephone survey and interviews were not considered as they were too time consuming.

3.5.2 Selection of Respondents and Companies

As the research was limited to the manufacturing industry, the data for the research could be gathered from employees working in any kind of manufacturing company. As such, the data could come from selected manufacturing companies in areas like precision engineering, machinery manufacture, oil and gas, pharmaceutical companies, printing companies and local small fabricators. These companies were selected through contacts known to the researchers.

Permission was first sought from the company representative or management to participate in the research. If the company agreed to participate in the research, the company representative was sent the participant information letters/survey package to their employees. The participant information letter included an internet link to the survey.

The selection of the employees was left to the discretion of the companies. Employees working full-time or part-time were invited to participate in the survey. In the invitational letter, the companies and the participants were also asked to recommend suitable candidates to participate in the survey. The purpose of the research, the conduct and the disposition of the data collected were explained to the companies and also detailed in the Participant Information Letter.

3.5.3 Qualtrics

The online survey was hosted at the domain of Qualtrics, which is a web-based survey tool licensed by the Newcastle Business School to conduct academic research. The Qualtrics research suite built the database and recorded the completed responses as soon as the responses were submitted. This ensured secure data storage and retrieval. In addition, the use of Qualtrics facilitated online data analysis and importing of the data into SPSS.

Qualtrics is secure and is accepted in academic settings as an online data collection tool. It overcomes many security issues faced by other commercial online survey tools.

3.5.4 Consent

Organizations participating in the research were asked to fill out an Organisational Consent Form (see Appendix B). For individual participants, consent was implied if they completed the questionnaire (see Appendix C). The participants were not coerced into taking part in the survey and they were free to opt out anytime.

3.5.5 Confidentiality

The participants were assured of complete confidentiality as they were not required to identify themselves, the departments they work at or the companies they work for. The demographics section in the survey only used to gather information to help the researchers to analyse the data in greater detail.

3.5.6 Justification of Method

Survey questionnaires were also used in past studies of a similar nature (e.g. Elliot et al. 1999; Silver et al 2006; Scaufeli & Bakka 2004). As the research is based on a model that has been developed from previous research, certain assumptions that were made in these previous studies were also made in this study. It is therefore recognised that causality or the assumption of causality may blind the researcher or limit the questions of inquiry (Lincoln 2005).

3.6 Scales

3.6.1 Reliability and Validity

As the research entails the collection and analysis of numerical data, it is important to ensure reliability and validity in the measurement of concepts in the model. Reliability refers to the consistency of the measure of a concept (Bryman & Bell 2008). The reliability of a measure depends on the stability, internal reliability and the inter-observational reliability. The stability consideration refers to how stable is the variable over time so that repeated results can be obtained. The internal reliability refers to whether the indicators on any one scale contradict any other scores in other scales. The inter-observational reliability is applied when more than one observer is used in research involving subjective data.

The validity of a measure refers to whether the measure of a concept really measures what it is supposed to measure. Bryman and Bell (2008) noted that there are different types of validity including face validity, concurrent validity, predictive validity, construct validity and convergent validity. Face validity deals with the issue of whether the measures in question seem to address the concept. This is normally done by asking people with expertise to judge whether the concept being measured reflects the concept concerned. The concurrent validity tests how well a particular measure correlates with another measure that has been previously developed. The measures could be for the same concept or for closely related concepts but both concepts have to occur simultaneously. The predictive validity, on the other hand, measures how well the concept being measured correlates with the measure of another concept which occurs later. Construct validity refers to whether the measures actually measure what they are supposed to measure. This is normally done by deducing hypotheses that are relevant to the concept. Finally, convergent validity refers to whether the measure of the concept is consistent with measures of the same concept developed by other methods.

3.6.2 Measures used in the study

The measures used in the study are described in this Section. Tables 3.1 to 3.5 show the measures and the items used.

3.6.2.1 Goal orientation

Goal orientation was measured using a separate scale for learning goal orientation, performance-approach goal orientation and performance-avoidance orientation. Learning goal orientation was measured using the eight-item scale developed by Button and Mathieu (1996). Performance-approach and performance avoidance-orientation were measured by the scales developed by Silver, Dwyer and Alford (2006).

Button et al (1996) used a four-study analysis to examine the two-dimensional structure of learning orientation and performance orientation. The measures for learning orientation showed good internal reliability for the scales used and could be used on its own without affecting the results (Button et al. 1996). The scale used to measure learning goal orientation learning is shown in Table 3.1. The following five-point Likert scale was used for the items shown in Table 3.1: 1 = strongly disagree to 5 = strongly agree.

Table 3.1 Learning goal orientation scale

1	The opportunity to do challenging work is important for me.
2	When I fail to complete a task, I plan to try harder the next time I work on it.
3	I prefer to work on tasks that force me to learn new things.
4	The opportunity to learn new things is important to me.
5	I do my best when I am working on a fairly difficult task.
6	I try hard to improve on my past performance.
7	The opportunities to extend my range of abilities are important to me.
8	When I have difficulty solving a problem, I enjoy Trying different approaches to see which will work for me.

Silver, Dwyer and Alford (2006) argued that more consistent results are yielded when performance goal orientation is measured using separate scales for performance-approach goal orientation and performance-avoidance goal orientation.

The scale used to measure performance-approach goal orientation is shown in Table 3.2. The following five-point Likert scale was used for the items shown in Table 3.2: 1 = strongly disagree to 5 = strongly agree.

Table 3.2 Performance-approach scale

1	I want to do well in my job to show my ability to my family, friends, supervisors, or others.
2	My goal is to outperform most of my peers in my firm.
3	I am motivated by the thought of outperforming my peers in my firm.
4	It is important to me to do better than my peers in my firm.
5	I am striving to demonstrate my ability relative to my peers in my firm.
6	It is important to me to do well compared to others in my firm.

The scale used to measure performance-avoidance goal orientation is shown in Table 3.3. The following five-point Likert scale was used for the items shown in Table 3.3: 1 = strongly disagree to 5 = strongly agree.

Table 3.3 Performance-avoidance scale

1	My fear of performing poorly at my job is often what motivates me.
2	I am afraid that if I ask my managers a “dumb” question, they might not think I am very smart.
3	I often think to myself, “What if I do badly in my job?”
4	I worry about the possibility of not meeting my goals or quotas.
5	I wish my job was not evaluated according to my performance.
6	I just want to avoid doing poorly in my job..

3.6.2.2 Work Engagement

Engagement was measured by the Utrecht work engagement scale (Schaufeli & Bakka 2002). The shortened version of the Utrecht engagement scale for employees was used. The Utrecht work engagement scale (or UWES) was originally developed by rephrasing the reverse-worded items in the Maslach Burnout Inventory.

Confirmatory factor analysis confirmed the three-dimensional structure of engagement as well as a one-factor structure for work engagement. As each of the three dimensions of vigour, dedication and absorption were shown to be closely interrelated, there has been many point of views as to whether work engagement should be seen as a one-dimensional or three-dimensional construct (Scaufeli & Bakka 2002; Seppali et al. 2009; Fong and Ng 2012). These three scales have good internal consistency and have been shown to be relatively stable over time. The original researchers also conducted confirmatory studies to show that these scales can be used in different cultures (Schafeli & Bakka 2002).

According to Schaufeli and Bakka (2002), the three scales can be used as separate scales or can be combined into a one-dimensional measure of engagement depending on the purpose of the research.

The scale used to measure work engagement is shown in Table 3.4 below. The following five-point Likert scale was used for the items shown in Table 3.4: 1 = strongly disagree to 5 = strongly agree.

Table 3.4 Work engagement scale

1	At work, I feel bursting with energy.
2	At my job, I feel strong and vigorous
3	When I get up in the morning, I feel like going to work.
4	I am enthusiastic about my job.
5	I am proud of the work that I do.
6	My job inspires me.
7	I am immersed in my work.
8	I get carried away when I am working.
9	I feel happy when I am working intensely

Note: Items 1-3 are for vigor; items 4-6 are for dedication and items 7-9 are for absorption.

3.6.2.3 Job-related Learning

Job-related learning was measured using a three-item scale developed by Loon and Casimir (2008). The scale also included the use of the words “in the last six months” to emphasis recent learning. The scale used to measure job-related learning is shown in Table 3.5. The following five-point Likert scale was used for the items shown in Table 3.5: 1 = strongly disagree to 5 = strongly agree.

Table 3.5 Job-related learning scale

1	In the past 6 months, I have learnt a lot of new things that have helped me to perform my job better.
2	In the past 6 months, I have acquired a lot of new knowledge. (Knowledge refers to mental abilities)
3	In the past 6 months, I have acquired a lot of new skills. (Skills refer to physical abilities to do things)

3.6.2.4 Innovation

Innovation role was measured using a four-item innovation scale which is part of the role-based performance scale (Welbourne et al. 1998). The scale had been separately validated and was found to have good internal consistencies. The role-based performance scale is based on role theory and identity theory and is a good alternative to specific job-related or company-related performance measures. The scale used to measure innovation in Table 3.6. The following five-point Likert scale was used for the items shown in Table 3.6: 1 = strongly disagree to 5 = strongly agree.

Table 3.6 Innovation Scale

1	I regularly come up with new ideas about how to do my job better
2	I regularly implement my new ideas in my job
3	I regularly find new ways to improve the way I do my work
4	I regularly find ways to improve my job-related processes and routines

3.6.2.5 Need for achievement

The need for achievement was measured using a ten-item scale obtained from the International Personality Item Pool (2001). The scale used to measure the need for achievement is shown in Table 3.7. The following five-point Likert scale was used for the items shown in Table 3.7: 1 = strongly disagree to 5 = strongly agree.

Table 3.7 Need for achievement scale

1	I work hard.
2	I do more than what's expected of me.
3	I excel in what I do.
4	I continue working until everything is perfect.
5	I work too much.
6	I plunge into tasks with all my heart.
7	I am not one of those people who do just enough work to get by.
8	I am highly motivated to succeed.
9	I do a lot of work.
10	I have a fast pace to my life.

With the exception of the scales for goal orientation and need for achievement, which were in the public domain, permission was sought and obtained from the original researchers before they were incorporated into the survey (see Appendix D for permission sought for the use of work engagement and innovation scales).

3.7 Questionnaire Design

The main instrument used in this research was a self-report questionnaire. The questionnaire was divided into six sub-sections. The first sub-section was for demographics which comprised nine questions. The second sub-section had forty-six survey questions organised in five sub-sections of the goal orientation scale (twenty questions), the engagement scale (nine questions), the job-related learning scale (three questions), the need for achievement scale (four questions) and the innovation scale (ten questions). A copy of the questionnaire is provided in Appendix E.

3.8 Ethical Considerations

The study complies with the guidelines set by the University Of Newcastle Graduate School Of Business. In accordance with the Australian National Statement on Ethical Conduct in Human Research, all research undertaken at the University of Newcastle, Australia needs to undergo a rigorous ethics approval process. As a result, approval to conduct this research was obtained from University Human Ethics Committee (see Appendix A reference no. H-2012-0185).

Although anonymous questionnaires were used in the study, there was still a need to ensure that all data relating to employee responses were confidential and handled with care. Employees were not asked for any personal identifiers such as name or employee number. The researchers took care to ensure that there was no unauthorised handling of the data through the use of password protected files.

The research was conducted at the respondents' own time and with the respondents' implied. The participants were informed in the Participant Information Letter that completion of the questionnaire implies that they have consented to participate in the research. Furthermore, the link to the web-based survey site was located only towards the end of the Participation Information Letter thereby indicating that the participants are likely to have read the contents of the Participant Information Letter before they accessed the survey site. The respondents had a right to voluntary withdraw from the survey. Participants were also informed of the purpose of the survey, the procedures and assured that there were no costs involved. There were no direct benefits to participants who participated in the survey. Participants were also assured that they could participate without fear of the findings adversely affecting them or the raw data being reviewed by management.

The researchers also ensured that they obtained formal consent form the companies to distribute the online survey (see Appendix B). In addition, the researchers were willing to share their findings by informing the

companies that they could contact the researchers for a copy of the findings.

3.9 Summary of Selected Research Method

This chapter provides a discussion of-the various considerations used to determining the research strategy. A cross-sectional research was chosen as the most appropriate research design. Data was gathered using an anonymous online survey questionnaire hosted on Qualtrics, which is a Web based tool approved by the University of Newcastle. The technique used for obtaining samples was the snowball sampling method, which is a non-probability method. The research was conducted in accordance with the ethics guidelines stipulated by the University of Newcastle.

Chapter 4 Analysis and Findings

4.1 Introduction

This chapter contains a description of the analysis that were collected using the methodology described in Section 3.7. The data collection took place over a seven-week period starting on 13 August 2012. During this period 220 responses were collected. Seventeen of these responses had to be excluded because they were incomplete. The remaining 203 responses formed the final sample used for analysis. The data were analysed using SPSS Version 16.0.

Chapter 4 has five sections. Section 4.2 contains the descriptive statistics of the respondents. Section 4.3 contains an analysis of the underlying structure of the various constructs and the internal reliability of the scales used to measure these constructs. The hypotheses described in Section 2.9 were tested and the results are provided in Section 4.4. Section 4.5 contains a summary of the key findings.

4.2 Descriptive Statistics of the Respondents

Table 4.1 shows the descriptive statistics for age, gender and workplace roles of the 203 respondents.

Table 4.1 Descriptive statistics of respondents.

		Frequency (Percent)
Age	below 25	6 (3.0)
	25-30	27 (13.3)
	31-40	57 (28.1)
	41-50	87 (42.9)
	51-60	25 (12.3)
	over 60	1 (.5)
	Total	203 (100.0)
Sex	Male	146 (71.9)
	Female	57 (28.1)
	Total	203 (100.0)
Role	Operations	142 (70.0)
	Service	12 (5.9)
	Design	6 (3.0)
	Engineering	17 (8.4)
	Administration	9 (4.4)
	Support	6 (3.0)
	IT	2 (1.0)
	Others	9 (4.4)

		Frequency (Percent)
Age	below 25	6 (3.0)
	25-30	27 (13.3)
	31-40	57 (28.1)
	41-50	87 (42.9)
	51-60	25 (12.3)
	over 60	1 (.5)
	Total	203 (100.0)

The work experience, time spent in current organisation and time spent in current roles of the respondents are described in Table 4.2.

Table 4.2 Work experience, time in current organization, and time in current role

	Range (years)	Mean (SD) (years)	Median (years)
Work experience	0 to 40	19.1 (8.4)	20.0
Time in current organisation	0 to 36	7.4 (6.1)	7.0
Time in current role	0 to 26	6.1 (4.3)	5.0

4.3 Construct Validity and Internal Reliability

In this section, the structure of the measures used for the constructs in the conceptual model (i.e., goal orientation, work engagement, job-related learning, need for achievement and innovation) and their internal

reliabilities are examined. Principal axis factoring was used to examine the internal structure of the measures and Cronbach's Alpha was used to measure their internal reliability. A Cronbach's alpha of .7 or more indicates satisfactory internal reliability (Nunnally 1978).

4.3.1 Goal Orientation

A three-factor solution was sought for goal orientation. Previous researchers have used a dichotomous model of learning goal and performance goal (e.g. Dweck and Leggett 1998; Button & Mathieu 1996) but have encountered inconsistent findings. More recent research found strong empirical support for a goal orientation as a three-dimensional concept (Cury et al. 2002; Silver, Dwyer & Alford 2006; Manal 2011) with the performance goal orientation being partitioned into performance-approach and performance-avoidance components. Silver, Dwyer and Alford (2006) argued that the three-dimensional model could possibly avoid some of the mixed results found in earlier studies using the dichotomous model. They also reasoned that the behavioural aspects of the performance-approach and performance-avoidance goal orientations are supported by earlier works on achievement motivation by McClelland (1961) and Atkinson (1964). Therefore a three-dimensional conceptualization of goal orientation is chosen for this study.

A principal axis factoring analysis with Varimax rotation yielded the results shown in Table 4.3 (see Appendix F-1 for details of analysis using SPSS). A value of 0.5 was used as the cut-off for item loadings (Hair, Anderson, Tatman & Black 1998; Coakes, Steed & Price 2008). The three factors account for 64.2% of the variance in the items.

Table 4.3 Item loadings for factors in goal orientation.

Item	Factor		
	1	2	3
LGO3			.66
LGO4			.86
LGO7			.55
PGO2	.82		
PGO3	.81		
PGO4	.80		
PGO5	.68		
PGO6	.63		
PAO1		.53	
PAO2		.63	
PAO3		.75	
PAO4		.70	

Loadings > .50 are only shown

LGO = Learning goal orientation, PGO = Performance approach goal orientation,
PAO = Performance avoidance goal orientation.

The only items from the 20-item measure of goal orientation that loaded satisfactorily on Factor 1 were five of the six PGO items. The only items from the 20-item measure of goal orientation that loaded satisfactorily on Factor 2 were four of the six PAO items. The only items from the 20-item measure of goal orientation that loaded satisfactorily on Factor 3 were three of the eight LGO items. Items with loading of less than .5 were considered to have loaded poorly and were deleted from the factors.

An overall score for LGO was created by calculating the average of the three LGO items shown in Table 4.3. Cronbach's alpha was .72. An overall score for PGO was created by calculating the average of the five

PGO items shown in Table 4.3. The Cronbach's alpha was .88. An overall score for PAO was created by calculating the average of the four PAO items shown in Table 4.3. The Cronbach's alpha was .76. All three of the modified measures have satisfactory internal reliability based on Nunnally's (1978) .7 criterion.

4.3.2 Work Engagement

A one-factor solution was sought for the work engagement construct. Scathufeli and Bakker (2002) had originally designed the work engagement scale for use as both a three-dimensional measure of work engagement as well as a composite measure for work engagement. However they also argued that the correlations between the sub-factors of the scale suggest that the three factors can be collapsed into one factor. Seppa et al. (2009) later found evidence that high correlations between the three factors of work engagement could restrict their use as three separate dimensions. Therefore to avoid problems with the high correlations of the latent factors, a one-dimensional conceptualization of work engagement was used in this study.

A principal axis factoring analysis with Varimax rotation yielded the results shown in Table 4.4 (see Appendix F-2 for details of analysis using SPSS). Items with loadings less than .5 were deleted (Hair, Anderson, Tattman & Black 1998). The single factor accounts for 39.9% of the variance in the items.

Table 4.4 Item loadings for work engagement.

Item	Factor
	1
VI2	.65
VI3	.54
DE1	.69
DE2	.76
DE3	.75
AB1	.69
AB2	.54
AB3	.54

VI = Vigor, DE = Dedication, AB = Absorption.

Of the nine items that were used to measure the work engagement construct, eight of the nine items loaded satisfactorily onto one factor. Cronbach's alpha for the eight-item scale was 0.85. The work engagement scale therefore has good internal reliability. Although the eight items in the scale can be used to measure vigor, dedication and absorption separately (Scaufeli & Bakker 2002; Seppa et al. 2009; Fong & Ng 2012), an overall score for work engagement was calculated by averaging the scores of the eight items. This is in line with the argument by Seppa (2009) that the high correlations between the latent could restrict the use of a three-dimensional model.

4.3.3 Job-related Learning

A single-factor solution was sought for job-related learning. A principal axis factoring analysis 3 (see Appendix F-3 for details of analysis using SPSS) revealed that the three items for job-related learning load satisfactorily on a single factor, which accounts for 80.7% of the variance in the three

items. Cronbach's alpha for the three-item scale is .88, which is above Nunnally's (1978) .7 criterion. An overall score for job-related learning was calculated by averaging the scores of three items.

Table 4.5 Item loadings for job-related learning

Item	Factor
	1
JRL1	.85
JRL2	.85
JRL3	.83

JRL = Job-related learning

4.3.4 Need for Achievement

A one-factor solution was sought for the need for achievement construct. As shown in Table 4.6, a principal axis factoring analysis (see Appendix F-4 for details of analysis using SPSS) revealed the ten items for need for achievement load satisfactorily on a single factor, which accounts for 44.4% of the variance in the items. Cronbach's alpha for the 10-item need for achievement scale was .89, which is above Nunnally's (1978) .7 criterion. The need for achievement scale therefore has satisfactory internal reliability. An overall score for need for achievement was calculated by averaging the scores of ten items.

Table 4.6 Item loadings for the need for achievement.

Item	Factor 1
NA1	.66
NA2	.80
NA3	.52
NA4	.51
NA5	.71
NA6	.66
NA7	.52
NA8	.54
NA9	.65
NA10	.58

NA = Need for achievement

4.3.5 Innovation

A one-factor solution was sought for the innovation construct. As shown in Table 4.7, a principal axis factoring analysis (see Appendix F-5 for details of analysis using SPSS) revealed the four items for innovation load satisfactorily on a single factor, which accounts for 64.7% of the variance in the items. Cronbach's alpha for the four-item innovation scale was .82, which is above Nunnally's (1978) .7 criterion. The innovation scale therefore has satisfactory internal reliability. An overall score for innovation was calculated by averaging the scores of the four items.

Table 4.7 Item loadings for Innovation.

Item	Factor1
IN1	.73
IN2	.73
IN3	.75
IN4	.70

IN = Innovation

4.3.6 Descriptive Statistics of the Variables.

The descriptive statistics for the variables are shown in Table 4.8 below. Skewness and kurtosis are properties of a variable that describe the shape of the distribution (Coates, Steed & Price 2008). Skewness refers to concentration of data points to the left or right of the mean. Kurtosis refers to the peaks or the flatness of the distribution. Positive values show the distribution to be peaked or leptokurtic and negative kurtosis values means that the distribution is flat or platykurtic. A distribution can be regarded as normal if the absolute value of skewness or kurtosis is less than twice the corresponding standard error (Hair et al. 2006).

Table 4.8 Descriptive statistics for the key variables.

	LGO	PGO	PAO	WE	JRL	IN	NA
Minimum	2.29	1.00	1.60	1.75	1.67	2.00	2.50
Maximum	5.00	5.00	4.80	5.00	5.00	5.00	5.00
Range	2.71	4.00	3.20	3.25	3.33	3.00	2.50
Mean	4.15	3.31	3.08	3.59	3.77	3.80	3.81
SD	.56	.74	.73	.65	.69	.54	.52
Median	4.14	3.33	3.20	3.55	4.00	4.00	3.80
Skewness	-.52	-.57	.03	-.06	-.58	-.41	.02
SE Skewness	.17	.17	.17	.17	.17	.17	.17
Kurtosis	2.24	.66	-.50	-.32	.62	.95	-.30
SE Kurtosis	.34	.34	.34	.34	.34	.34	.34

LGO = Learning goal orientation, PGO = Performance approach goal orientation, PAO = Performance avoidance goal orientation, WE = Work engagement, JRL = Job-related learning, IN = Innovation, NA = Need for achievement.

From Table 4.8, learning goal orientation, performance-approach goal orientation, job-related learning and innovation are negatively skewed as the value of skewness is more than twice the standard error of skewness. Learning goal orientation and innovation are leptokurtic as the value for kurtosis is more than twice the standard error of kurtosis.

Table 4.9 shows the correlations for the variables used in the model. It can be seen from the table that the variables PGO, WE, JRL and NA are significantly and positively correlated with the dependent variable IN. PGO and PAO are not significantly correlated with IN.

Table 4.9 Table of correlations for variables used in the model.

	1	2	3	4	5	6	7	8	9	10	11	12
1. Age												
2. Gender	.01											
3. Work Experience	.85**	.08										
4. Time in organization	.41**	.34**	.49**									
5. Time in current role	.32**	.13*	.36**	.50**								
6. LGO	-.19	-.09	-.22**	-.22**	-.21**							
7. PGO	-.07	.07	-.10	-.03	-.00	.14*						
8. PAO	-.00	.29**	.03	.18*	-.09	-.06	.32**					
9. WE	.03	.22**	-.00	.07	-.31	.25**	.21**	.27**				
10. JRL	-.12*	.19	-.09	-.02	-.07	.35**	.17	.22**	.41**			
11. IN	.03	.05	-.01	.06	-.03	.34**	.10	.07	.40**	.37**		
12. NA	-.07	.07	-.10	-.01	-.01	.25**	.20**	.27**	.59**	.31**	.49**	

* $p < .05$, ** $p < .01$.

LGO = Learning goal orientation, PGO = Performance-approach goal orientation, PAO = Performance avoidance goal orientation, WE = Work engagement, JRL = Job-related learning, IN = Innovation, and NA = Need for achievement.

4.4 Hypothesis Testing

The following section contains a description of the analyses that were used to test the hypotheses the findings from these analyses. The analyses were performed using SPSS version 16.0.

Mediation analysis and hierarchical regression analysis were used to test the hypotheses proposed in Section 2.9. Linear regression tests the relationship between independent or predictor variables and dependent variables. Multivariate linear regression establishes the relationships between a group of predictor variables and a dependent variable (Coates, Steed & Price 2008; De Veaux, Velleman & Bock 2008).

Mediation effects occur when an independent variable influences an intervening variable which directly influences the dependent variable (Muller, Judd & Yzerbyte 2005). Mediation effects are tested using techniques developed by Kenny and colleagues (Baron & Kenny, 1986; Judd & Kenny, 1981). In general, mediation effects can only be claimed if the following three conditions are satisfied: 1) the independent variable significantly predicts the dependent variable; 2) the independent variable significantly predicts the mediator variable and 3) when the dependent variable is regressed on both the independent variable and the mediator, the mediator significantly predicts the dependent variable while the independent variable becomes less significant or non-significant for predicting the dependent variable. Partial mediation effect can be claimed if both the mediator and the independent variable significantly predict the dependent variable. Kenny, Kashy and Bolger (1998), argued that only Condition 2 and Condition 3 are essential for demonstrating mediation effects.

Moderation effects occur when the relationship between the dependent variable and the independent variable is influenced by varying levels of a third variable. This third variable is referred to as the moderator variable (Muller, Judd & Yzerbyte 2005).

When testing for moderation effects a product-term has to be created. The product-term is obtained by multiplying the independent variable and the moderator variable. However, the independent variable and the moderator have to be standardised before creating the product-term to reduce the correlation between the product term and its constituents.

A two-step procedure is used to test for moderation effects. The first step involves regressing the dependent variable on the standardised independent variable and the standardised moderator. The second step involves regressing the dependent variable on the standardised independent variable, the standardised moderator and the product term. If the product term is a significant predictor of the dependent variable then a significant moderation effect exists. The moderator is then recoded into groups of high, mid and low levels by using the 33rd and 67th percentiles as cut-off points. The correlation between the independent variable and the dependent variable is then analysed for each of these groups to examine the nature of the moderation effect.

4.4.1 Hypothesis 1: Goal orientation, Job-related learning and Work Engagement

Hypothesis 1: The relationships between the three types of goal orientation and job-related learning are mediated by work engagement.

A separate analysis was conducted for each of the three types of goal orientation. Firstly, whether or not work engagement mediates the relationship between learning goal orientation and job-related learning was tested. Learning goal orientation significantly predicted job-related learning ($\beta=.35$, $p<.001$; Condition 1 met). Learning goal orientation significantly predicted work engagement ($\beta=.26$, $p<.001$; Condition 2 met). Job-related learning was then regressed on both work engagement and learning goal orientation ($\beta=.38$, $p<.001$ and $\beta=.26$, $p<.001$, respectively; Condition 3 partially met as the mediator was significant and the independent

variable was significant). Therefore work engagement partially mediates the relationship between learning goal orientation and job-related learning.

Next, whether or not work engagement mediates the relationship between performance-approach goal orientation and job-related learning was tested. Performance-approach goal orientation significantly predicted job-related learning ($\beta=.17$, $p<.05$; Condition 1 met). Performance-approach goal orientation significantly predicted work engagement ($\beta=.21$, $p<.005$; Condition 2 met). Job-related learning was then regressed on both work engagement and performance-approach goal orientation ($\beta=.43$, $p<.001$ and $\beta=.08$, $p > .05$, respectively; Condition 3 met as the mediator was significant and the independent variable was not significant). Therefore work engagement mediated the relationship between performance-approach goal orientation and job-related learning.

Finally, whether work engagement mediates the relationship performance-avoidance goal orientation and job-related learning was tested. Performance-avoidance goal orientation significantly predicted job-related learning ($\beta=.22$, $p<.01$; Condition 1 met). Performance-avoidance goal orientation significantly predicted work engagement ($\beta=.27$, $p<.001$; Condition 2 met). Job-related learning was then regressed on both work engagement and performance-avoidance goal orientation ($\beta=.42$, $p<.001$ and $\beta=.11$, $p>.05$, respectively; Condition 3 met as the mediator was significant and the independent variable was not significant). Therefore work engagement mediated the relationship between performance-avoidance goal orientation and job-related learning.

4.4.2 Hypothesis 2: Job-related learning, Innovation and Need for Achievement

Hypothesis 2: *The positive relationship between job-related learning and innovation is moderated by the need for achievement such that the*

strength of the positive relationship increases as the need for achievement increases.

The moderation effect was tested using hierarchical regression analysis. The moderator variable (need for achievement) and the independent variable (job-related learning) were first standardised. A multiple linear regression was conducted using the standardised values for need for achievement and job-related learning. The product-term was then created by multiplying the standardised job-related learning and the standardised need for achievement . Multiple linear regression was then conducted with the standardised job-related learning, the standardised need for achievement, and the product term. The output from SPSS is shown in Table 4.10.

Table 4.10 Analysis for the moderating effect of need for achievement on the relationship between job-related learning and innovation.

Results			
Predictors	R ²	β	p
NA	.294	.130	.000
JRL		.227	.000
NA	.311	.124	.000
JRL		.236	.000
NA x JRL		-.067	.028

NA= Need for achievement; JRL= Job-related learning

The hierarchical regression analysis revealed that there was a significant interaction between the need for achievement and job-related learning: For the product term, $b = -.067$, $p < .05$, $\Delta R^2 = .017$.

The moderation effect was examined more closely by splitting need for achievement into three groups (i.e., low, below 33rd percentile; medium, 33rd to 67th percentile; and high, above 67th percentile). The correlation between job-related learning and innovation was then calculated for each of the three need for achievement groups. These correlation analyses revealed the correlation between job-related learning and innovation to be significant for the low and medium groups of need for achievement ($r = .40$, $p < .01$ and $r = .27$, $p < .05$, respectively) but not significant for the high need for achievement group ($r = .19$, $p > .05$). These findings do not support Hypothesis 2 as they show that the strength of the positive relationship between job-related learning and innovation decreases rather than increases as need for achievement increases.

4.5 Summary of Findings

Table 4.11 contains a summary of the findings for the hypotheses.

Table 4.11 Summary of findings.

Hypothesis	Supported
<i>(H1) The relationships between the three types of goal orientation and job-related learning are mediated by work engagement.</i>	Yes
<i>(H2) The relationship between innovation and job-related learning is moderated by the need for achievement such that the positive relationship increases as the need for achievement increases.</i>	No

Chapter Five provides an explanation of the above findings and a discussion of the theoretical and practical implications of the findings. In particular, how goal orientation and work engagement influence job-related learning will be discussed. A discussion of why Hypothesis 2 is not supported will also be provided. The chapter ends with a discussion of the limitations of this research and recommendations for future research.

Chapter 5 Findings and Recommendations

5.1 Introduction

This chapter has six parts. The major findings are presented in Section 5.2. Section 5.3 contains a discussion of the theoretical and practical implications of the findings. Section 5.4 contains a discussion of the limitations of this study. Recommendations for future research are provided in Section 5.5 and a conclusion to the dissertation is provided in Section 5.6.

5.2 Major Findings

Finding One: *Learning goal orientation is positively correlated to job-related learning.*

People who have a learning goal orientation continually seek to increase their competence and mastery of the subject and prefer to work on tasks that extend their range of abilities (Dweck and Leggett 1988). In addition to learning through doing, they will also look for other ways such as actively asking work-related questions, seeking performance feedback to acquire task-related knowledge and taking on tasks that force them to learn new things. Learning goal orientation is also positively associated with information-seeking behaviour such as closely observing more experienced people at work or discussing work-related issues with colleagues (Billet 1999). As a result, learning goal orientation should facilitate job-related learning. The significant positive correlation that was found between learning goal orientation and job-related learning supports this line of reasoning.

The finding that learning goal orientation is positively correlated to job-related learning is consistent with the findings from other studies (Block et al. 1995; Butler 1993; Elliot & Church 1997; Phillips & Gully 1997; VandeWalle, Cron and Slocum 2001) that have been conducted in

academic settings. These studies found learning goal orientation to be positively related to academic performance.

Finding Two: *Performance-approach goal orientation is positively correlated to job-related learning.*

People with a performance-approach goal orientation seek confirmation of their competence and they also seek to surpass others (Dweck and Leggett 1988). Such individuals tend to set higher and more challenging goals than others (Ilies and Judge 2005). As a result, people with a high level of performance-approach goal orientation are likely to learn more about their jobs than would people with a low level of performance-approach goal orientation.

The finding that learning goal orientation is positively correlated to job-related learning can be linked to the finding reported by Silver, Dwyer and Alford (2006). They found that performance-approach goal orientation is positively related to performance amongst a sample of 238 insurance sales agents. The involvement of job-related learning can be inferred since job-related learning has been found to positively affect performance (Paloniemi 2006).

Finding Three: *Performance-avoidance goal orientation is positively correlated to job-related learning.*

People who have a performance avoidance orientation are particularly likely to avoid having their performance evaluated negatively. As a result, they may be reluctant to take on difficult tasks and will not avoid taking on easy tasks. As a coping behaviour, they will avoid difficult tasks which they see as a risk (Silver, Dwyer & Alford 1996). This line of reasoning finds support from the Conservation of Resources Theory, which states that people use their internal resources to cope with stressful situations (Hobfoll 1989). Their energy is then directed at completing an assigned job whilst coping with the perceived risks of negative evaluation. Using this

line of reasoning, such people will likely gain job-related learning in order to avoid negative evaluation.

Although numerous studies have shown that performance-avoidance goal orientation has negative effects on motivation and performance (Elliot & Church 1997; Elliot et al. 1999), these studies were carried out in academic environments and performance-avoidance goal orientation was linked to anxiety, a fear of failure, avoidance of negative outcomes which are all self-regulatory protection mechanisms.

The finding in our current study was based on questions such as “My fear of performing poorly at my job is often what motivates me”; “I often think to myself”; “What if I do badly in my job?”; “I worry about the possibility of not meeting my goals or quotas”; “I just want to avoid doing poorly in my job”, which are related to not wanting a negative evaluation. The finding seems to suggest that performance-avoidance goal orientation will set up a self-regulatory mechanism which may include job-related learning. In other words, in coping with the anxiety of fear of failure, an individual may actually try to learn how to do the job properly.

Finding Four: *Learning goal orientation is positively correlated to work engagement.*

The level of one’s participation at work is elective and people are likely to choose to do things that are most meaningful to them (Billet 2001).

Performing a job that one finds meaningful is likely to lead to positive feelings about one’s work and job-related learning is most likely to occur when employees are purposefully engaged in their assigned tasks (Billet 2001).

Bryson et al. (2006), in a qualitative study on workplace affordances and engagement in New Zealand wineries, found that people at all levels in their organisations selectively choose their learning activities in a proactive

manner. Citing the works of Crant (2000) and Frese and Fray (2001), Bryson et al. (2006) explained that proactive behaviour (and personal initiative) at work with regards to learning opportunities can be linked to self-esteem and self-efficacy. (Gardner & Pierce 1998). High self-esteem is a positive emotion. Self-efficacy refers to an individual's perception of his/her abilities to deal with problems or to perform tasks (Bandura 1982). According to Xanthopoulou's (2007) extended JD-R Model, self-esteem and self-efficacy are types of personal resources, which in turn, are predictors of work engagement.

Considering that learning goal orientation in the study was measured using items such as 'I prefer to work on tasks that force me to learn new things.', 'The opportunity to learn new things is important to me.' and 'The opportunities to extend my range of abilities are important to me.', the finding suggests that a positive response for learning goal orientation (i.e. seeking learning opportunities) would lead to positive affect such as positive self-esteem and positive feelings about one's abilities.

Radosevich et al. (2008), using an on-line survey on a sample of 657 business students in a large university, found that cognitive engagement was positively influenced by learning goal orientation. Elliot et al. (1999) examined the goal orientations, study strategies and performance of 165 undergraduate psychology students and reported that learning goal orientation is a positive predictor of persistence and effort, which are similar to the vigor aspect of work engagement. This finding therefore supports past research where learning goal orientation positively influenced work engagement.

Finding Five: *Performance-approach goal orientation is positively correlated to work engagement.*

People who have a performance-approach goal orientation seek recognition and confirmation of their competence (Dweck and Leggett 1988). They consequently focus on performing their tasks well so that they

can do better than their peers. People who have a performance-approach goal orientation feel positive only when they have achieved a standard of performance that surpasses their peers (Ilies and Judge 2005). As positive affect leads to positive work behaviour (Bindl and Parker 2010), individuals with high performance-approach goal orientation will likely engage in tasks that gives them a good chance of doing better than others. Radosevich et al. (2008) reported that cognitive engagement is positively influenced by a performance-approach goal orientation. Similarly, Elliot et al. (1999) reported that a performance-approach goal orientation is a positive predictor of persistence and effort. The finding from the current study is therefore consistent with those from previous studies in that performance-approach goal orientation was found to be positively associated with work engagement.

Finding Six: *Performance-avoidance goal orientation is positively correlated to work engagement.*

Considering that performance-avoidance goal orientation in this study was measured with questions such as “My fear of performing badly is what motivates me” and “I just want to avoid doing poorly in my job”, people with a performance-avoidance goal orientation may have positive emotions about their job because they do not want to do badly.

Frese and Fay (2001) found that proactive behaviour is not always welcomed when it is seen as ‘rocking the boat’. In situations where positive behaviour is perceived as a risk, such as behaviour that is unacceptable to supervisors and peers, the individual may refrain from proactive and adaptive behaviour even though they experience positive affect from such behaviours. This is due to the negative evaluation they expect to receive from their supervisors and peers (Bindl and Parker 2010).

Radosevich (2008) reported that a performance-avoidance approach was negatively correlated with cognitive engagement. Elliot et al. (1999),

however, reported that performance-avoidance goal has a non-significant relationship with persistence and effort, both of which are aspects of work engagement.

Despite the inconsistencies of the findings from other studies, the finding that performance-avoidance goal orientation is positively related to work engagement can be used to suggest that individuals with a performance-avoidance goal orientation do not necessarily dislike their work or have negative emotions about their work. According to the finding, such individuals are likely to be engaged (i.e. have positive emotions about their work) but because they fear doing poorly, they may refrain from proactive behaviour if they sense there is a risk of getting a negative outcome.

Finding Seven: *Work engagement is positively correlated to job-related learning.*

According to Griffin, Neal and Parker (2007), positive work performance behaviour is composed of work proficiency, proactivity at work and adaptability. Bindl and Parker (2010), using this definition of work-performance behaviour, reasoned that positive emotions at work lead to positive work-related behaviour. The meaning of positive affect as used by Bindl and Parker (2010) can also be thought of as a positive state of mind, which is also the definition of work engagement that was used by Schaufeli and Bakker (2002).

Experience gained in the workplace is a way of learning (Kolb 1984) and is a pre-requisite for workplace competence (Paloniemi 2006). Job-related learning should therefore be positively related to good work performance (Paloniemi 2006). Since positive affect influences work performance, it follows that positive affect will also influence job-related learning. Finally, Collin (2007), in an ethnographic study on Finnish design engineers working in high-tech industries, found that work engagement is closely connected with learning. After all, it is through doing that engineers learn.

The finding that work engagement is positively correlated to job-related learning is consistent with the findings from (Collin 2007).

Finding Eight: *Work engagement partially mediates the relationship between learning goal orientation and job-related learning.*

Although individuals with a learning goal orientation are likely to experience positive emotions, they may not have the chance to choose what they wish to learn or take on tasks that force them to learn or that require a wide range of abilities. As a coping behaviour, they may invest additional personal resources into what they think are meaningful activities (Hobfall 1989). These activities, such as taking night classes or reading up on a subject in their own time, may not even be part of their assigned work. This line of reasoning finds support from Xanthopoulou et al. (2009) who reported that job resources, such as learning opportunities, positively influence performance. Therefore, work engagement may not fully account for all job-related learning for high-learning goal oriented individuals.

Radosevich et al. (2008) reported that academic performance was positively influenced by cognitive engagement and learning goal orientation. In other studies (Bakker and Demerouti 2007; Schaufeli and Salanova 2007), it was reported that learning opportunities influence work engagement which ultimately influences performance.

Finding Nine: *Work engagement mediates the relationship between performance-approach goal approach orientation and job-related learning.*

This finding can be used to infer that people with a performance-approach goal orientation are likely to learn by completing tasks that can demonstrate their competence. They will likely get positive emotions as described by Bindl and Parker (2010) when they complete their assigned tasks better than their peers. They will also learn whilst performing these tasks. This rationale is supported by Radosevich et al. (2008) who reported that academic performance was positively influenced by both

cognitive engagement and performance-approach goal orientation. As mentioned earlier, job-related learning can be linked to performance because job-related learning has been shown by Paloniemi (2006) to be a pre-requisite for work competence.

Finding Ten: *Work engagement mediates the relationship between performance-avoidance goal orientation and job-related learning.*

Although past studies have reported (Elliot & Church 1997; Elliot et al. 1999; Silver, Dwyer & Alford 2006) that performance-avoidance goal orientation is negatively correlated with performance, there is no direct evidence to show that performance-avoidance goal orientation is negatively correlated with job-related learning.

As mentioned when discussing Finding Three, people with a performance-avoidance goal orientation may try to learn about their job as part of their self-regulatory coping behaviour. As mentioned when discussing Finding Six, people with a performance-avoidance goal orientation may experience positive emotions from their work. At the same time, it seems that people with a performance-avoidance goal orientation will still try to learn to do their jobs properly as part of their coping behaviour because they still feel positive about and engaged with their work. As a result, they learn more about their jobs.

Finding Eleven : *The need for achievement moderates the relationship between job-related learning and innovation. Specifically, the strength of the relationship decreases with higher levels of need for achievement.*

The relationship between job-related learning and innovation was found to be moderated by the need for achievement. However, contrary to the hypothesis, the strength of this relationship was observed to decrease as need for achievement increases.

People with a high need for achievement seek success by demonstrating their competence (McClelland 1961) and are likely to take calculated risks

and opt for moderately difficult tasks or goals that they have a good chance of succeeding at (Atkinson 1964). In this study, the need for achievement was measured with questions such as “I do more than what's expected of me.”, “I excel in what I do.” and “I continue working until everything is perfect.”; “I continue working until everything is perfect.” People with a high level of need for achievement are intrinsically motivated to be innovative. This is supported by Shaver and Scott (1991) who argued that innovative behaviour, such as venture creation, is found particularly amongst entrepreneurs. Entrepreneurs tend to have very high levels of need for achievement (McClelland 1961). Given that people with a high level of need for achievement are intrinsically motivated to succeed and innovate, job-related learning may have a reduced effect on innovation.

People with lower levels of need for achievement tend to be driven by a fear of failure (Atkinson 1964). They therefore choose either very easy jobs that are almost certain to be completed successfully or very difficult jobs where failure would not lead to embarrassment. Very easy jobs are likely not to have a high innovation requirement. Very difficult tasks (which are likely to have higher innovation requirements) stand a higher chance of failure (which would not be of concern to people with low need for achievement anyway). Therefore people with low levels of need for achievement are less intrinsically motivated to be innovative than are people with high levels of need for achievement.

Innovation was measured with questions such as “I regularly come up with new ideas about how to do my job better.”, “I regularly implement my new ideas in my job.” and “I regularly find new ways to improve the way I do my work.” Job-related learning has a greater effect on innovation as need for achievement decreases because the motivation to be innovative decreases as need for achievement decreases. This argument is supported by the significant positive correlation that was found between need for achievement and innovation.

5.2.1 Summary of findings

The major findings are as follows and are depicted in Figure 5.1:

Finding One: *Learning goal orientation is positively correlated to job-related learning.*

Finding Two: *Performance-approach goal orientation is positively correlated to job-related learning.*

Finding Three: *Performance-avoidance goal orientation is positively correlated to job-related learning.*

Finding Four: *Learning goal orientation is positively correlated to work engagement.*

Finding Five: *Performance-approach goal orientation is positively correlated to work engagement.*

Finding Six: *Performance-avoidance goal orientation is positively correlated to work engagement.*

Finding Seven: *Work engagement is positively correlated to job-related learning.*

Finding Eight: *Work engagement partially mediates the relationship between learning goal orientation and job-related learning.*

Finding Nine: *Work engagement mediates the relationship between performance-approach goal approach orientation and job-related learning.*

Finding Ten: *Work engagement mediates the relationship between performance-avoidance goal orientation and job-related learning.*

Finding Eleven: *The need for achievement moderates the relationship between job-related learning and innovation. Specifically, the strength of the relationship decreases with higher levels of need for achievement.*

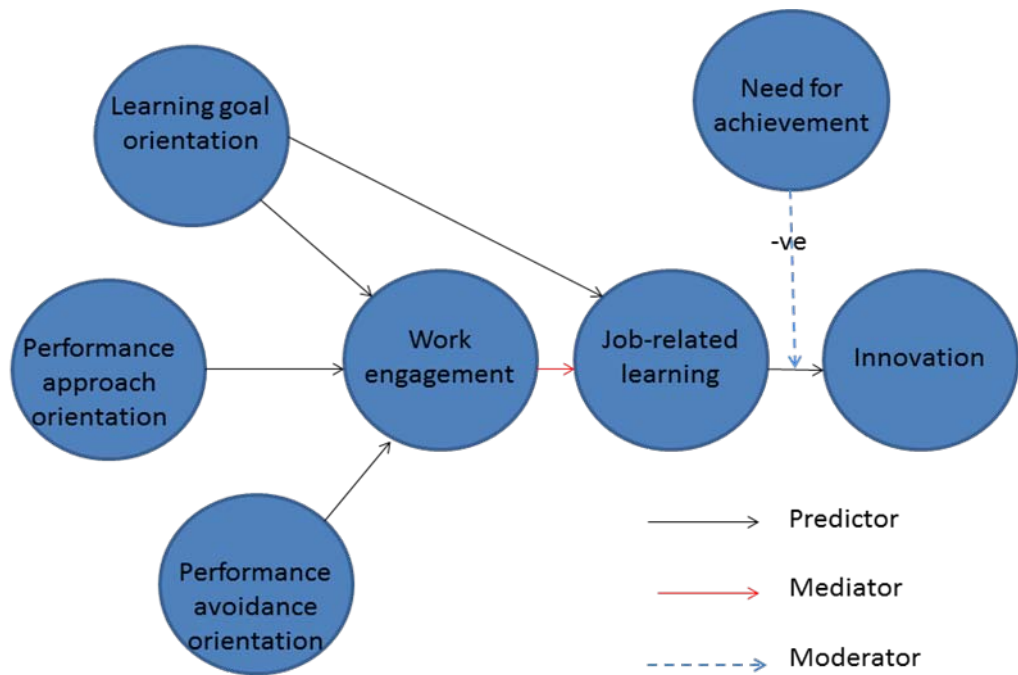


Figure 5.10. A model of goal orientation, work engagement, job-related learning, need for achievement and innovation.

5.3 Implications for Theory

This study contributes to the existing literature on goal orientation. The findings reveal that goal orientation can be conceptualised as a three-dimensional construct comprising of a learning goal orientation, a performance-approach goal orientation, and a performance-avoidance goal orientation. This conceptualization is consistent with previous research (e.g., Elliot & Harackiewicz 1996; Silver, Dwyer & Alford 2006).

Work engagement can be measured as a three dimensional construct (comprising vigor, dedication and absorption) or a one-dimensional construct (aggregating vigor, scale and absorption) (Schaufeli & Bakker 2002). This study demonstrated the use of work engagement as a one-dimensional construct.

This study contributes to our understanding of how goal orientation and work engagement might affect job-related learning. The finding that work engagement mediates the relationship of all three types of goal orientation and job-related learning shows that goal orientation might evoke positive feelings about work and subsequently enhance job-related learning.

This study contributes to the literature on job-related learning and innovation. In particular, the study demonstrated that a personality trait (i.e., need for achievement) might influence the effects of job-related learning on innovation.

5.4 Implications for Practice

The finding that work engagement mediates the relationship between all three types of goal orientation and job-related learning has several implications for managers. The first major implication of this finding is that work engagement plays a major role in organisational learning because job-related learning by individuals ultimately influences organisational

learning (Billet 2001; Waddell, Cummings & Worley 2001). Additionally, the findings indicate that, regardless of the type of internal goal orientation, job-related learning will occur if people are engaged in their work.

Managers need to develop programs to increase the vigor, dedication and absorption of employees. Such programs should be supported with social, psychological and organisational resources (Xanthopoulou 2007). Social and psychological support from teams, supervision and personal resources such as autonomy, coaching and team climate are important for facilitating work engagement (Bakker & Demerouti 2007). Organisational resources such as physical resources are also important for improving work engagement. Salanova et al. (2005) found that providing proper job resources has positive effects as it improved work engagement and service climate which in turn improved performance and customer loyalty. Hakanen et al. (2007) found that job resources improved the work engagement and personal initiative in a study involving 255 Finnish dentists. It is therefore recommended that managers consider putting in place an infrastructure of job resources to create a climate that is conducive to increasing work engagement.

Managers can increase opportunities for job-related learning through activities such as problem solving which requires learning, fact finding, problem investigation and analysis as well as innovation (Liker & Hoseus 2008). Managers could systematically create learning and innovation opportunities through interventions such as TQM, lean systems and Six Sigma programs. These programs, which are typically used in manufacturing organisations, require workers to actively participate in problem solving and make continuous improvements in their jobs.

Problem solving is in itself an active learning activity (Knowles 1965; Kolb 1984) as it requires the worker to investigate and find out about the problem area. When solving problems, workers come up with new and better ways to do things. Problem solving is a form of active learning which has been linked to work engagement (Bakker & Demerouti 2007).

Workers who are engaged in solving work-related problems will be forced to learn. They will become more motivated due to greater autonomy and the greater latitude allowed in improving and redefining their own work. It should be noted that the technical requirements for these types of programs vary from the application of simple quality-control tools in Total Quality Management to the use of statistical techniques in Six-Sigma programs. The degree of difficulty for these continuous improvement projects should be regulated through proper training and human resource policies (Zu & Frendendall 2009).

The role of the manager should be to coach, and to provide necessary resources such as time, support and infrastructure for these activities to take place. The findings from this study indicate that the effect of job-related learning on innovation depends on the level of need for achievement. The role of the manager includes setting goals together with workers. However, these goals need to be appropriate, in terms of the level of difficulty, for workers who have different levels of need for achievement.

The use of the TQM, lean systems and Six Sigma also has the effect of creating meaningful work which will then help to build commitment to the organisation (Liker & Hoseus 2008). This would improve the dedication component of work engagement, which refers to having a sense of significance, enthusiasm, pride and challenge in one's work.

It has been well documented that Toyota has for years created a system of 'respect for people' in their Toyota Production System (Liker & Hoseus 2008). Employees are required to participate in continuous improvement programs wherein they are supported to solve problems in teams. Any improvements made by the employees are recognised by the company. Benefits gained from these improvement programs are channelled back to the employees through an improved work and stable work environment. It was reported that this culture of continuous improvement created a sense

of mutual trust between employees and the employer (Liker & Hoseus 2008).

Similar interventions which use the Toyota Production System are known as lean programs. These programs promote the use of simple tools like 5S and structured problem solving. In 5S programs, companies support their workers to systematically organise, improve and maintain their immediate work areas. This in turn has the effect of workers taking pride in their work. Successful implementation of such kind of interventions would normally require an organisation-wide culture change.

Human resources practices could be used to encourage workers to develop a learning goal mindset (Waddell, Cummings & Worley 2001; ASTD 2008). Work engagement was found to partially mediate the relationship between learning goal orientation and job-related learning. This finding indicates that the effect of learning goal orientation on job-related learning does not need to occur solely through work engagement.

The importance of having a learning goal orientation is supported by the Conservation of Resources Theory (Hobfoll 1989), according to which people invest their own personal resources in things which they can use later on. Workers therefore have to be educated about and convinced of the long-term benefits that come with learning new skills and acquiring new knowledge.

On a larger scale, the organisation can also extend the same learning idea to the entire organisation in the form of a comprehensive organisational learning program (ASTD 2008). Key features of an organisational learning program could include creating structures to promote teamwork, networking across organisation, information sharing, knowledge exchange, use of information systems for learning, human resource practices to promote learning, and a culture of openness and sharing (Waddell, Cummings & Worley 2001).

The findings showed that workers with low need for achievement may still be innovative because of their job-related learning. This finding underlies the importance of ensuring that all employees are provided with opportunities to increase their job-related knowledge and skills.

Another recommendation based on the findings is for managers to consider work redesign by giving greater autonomy and job latitude to workers. Increasing autonomy and job latitude are known to reduce work stress (Karasek 1979) and as a result increase work engagement (Bakker & Demerouti 2008; Xanthopoulou et al. 2009).

Lastly, it is recommended that practitioners allow the use of job crafting in organisations to increase work engagement. In job crafting, people mobilise resources to create their own jobs. This has a positive effect on work engagement as it sustains vigor and dedication (Grant & Parker 2009). These engaged employees are more likely to be active learners as they are given a chance to suggest things, improve things and are given recognition for the work they produce: Workers tend to be more innovative under such situations (Berg, Wryzienewski & Dutton 2009).

5.5 Limitations of the current research

This study has several limitations. Firstly, the use of convenience sampling in the research methodology has several disadvantages. The sample was not random and is based on organisations and people known to the researcher. As with other non-probability sampling methods, the error cannot be determined and the sample may potentially be biased. The sample may therefore not be representative of the entire population.

The use of a cross-sectional design also has disadvantages as all of the data were collected at a fixed period of time. This type of design does not allow for comparisons as there was no base-line or further follow-up conducted.

The use of an online survey has the disadvantage of limiting the responses to people who had access to a computer or at least knew how to use a computer. People who do not have access to a computer may have been excluded thereby bringing into question the representativeness of the sample.

The single source common method that was used (i.e. self-reporting and a questionnaire based solely on Likert-scales) may also create problems. However, the mediation effects found indicate that common method variance is not a major problem in this study.

To estimate the effects of common method variance (Sharma, Yetton & Crawford 2009), a factor analysis was conducted on all of the items that were used in the final versions of the measures for the testing of the hypotheses. This analysis revealed that a single factor explained 24.6% of the variance in all of the items thereby providing further evidence that common method variance is not a major issue in this study.

5.6 Recommendations for Further Research

There are several recommendations for future research. Future research may consider a longitudinal design where interventions for job-related learning and work engagement can be studied over a period of time.

The current study only considered work engagement as a single dimension. It is recommended that work engagement be studied as a three dimensional construct of vigor, dedication and absorption which can be then explored in greater detail and depth.

The current research studied the effects of need for achievement as a moderator. The need for growth is also seen as a major trait which may influence behaviour in the workplace. It would therefore be interesting to

see the combined effects of the need for achievement and the need for growth on job-related learning and innovation.

The disadvantages of using a single-source, single-method design can be overcome by obtaining data for job-related learning and innovation from a second source (e.g. the supervisors of the respondents) that is in a position to gauge the job-related learning and the innovative contributions of the person.

Finally, qualitative analysis may be introduced to investigate the meaning of concepts such as innovation as used in the manufacturing organisations. As argued by Axtell et al. (2000), shopfloor innovations may range from making suggestions, studying problems to fully implementing solutions. Each of these is associated with different degrees of task difficulty and requires different degrees of autonomy. It would be interesting to see how shopfloor staff perceive innovative behaviour in relation to task requirements and autonomy. Shopfloor activities are normally dictated by standard work which under most circumstances give workers little spare time and latitude in deciding job tasks. At the same time, shopfloor staff are encouraged to be innovative through activities such as investigating problems, collecting data to learn about problems, suggesting ways to improve and even find new ways to do things, which may require time and autonomy. When faced with such a dichotomous situation, workers have to allocate limited resources to these requirements such as achieving job performance, learning new things, job autonomy on top of innovative behaviour expected of them. Since innovation may mean different things to different people, it would be useful to investigate the different perceptions of innovation, how workers allocate resources to innovate (e.g. thinking about ideas, learning, experimentation, problem solving etc) and how they feel about work engagement (vigor, dedication, absorption) when they undertake innovative activities.

5.7 Conclusion

Work engagement has been given a lot of emphasis recently in the management literature because of its impact on performance (e.g. ASTD 2008; Towers Perrin 2000). In this study, the relationships between goal orientations, work engagement, job-related learning, need for achievement and innovation were examined and a conceptual model was proposed using these concepts. The model was then tested.

In answer to the first research question regarding the role of work engagement in job-related learning, work engagement was found to mediate both the relationship between performance-approach goal orientation and job-related learning, and the relationship between performance-approach goal orientation and job-related learning. Work engagement was found to partially mediate the relationship between learning goal orientation and job-related learning. The implication of this finding is that goal orientation facilitates engagement (i.e., feeling positive about one's work) and that one of the drivers of job-related learning is engagement.

In relation to the second research question regarding how job-related learning and need for achievement influence innovation, it was observed that the need for achievement moderates the relationship between job-related learning and innovation. Specifically, the strength of the positive relationship between job-related learning and innovation decreases as need for achievement increases. The effect of job-related learning on innovation therefore appears to be greater when need for achievement is low than when it is high possibly because people with high need for achievement are intrinsically motivated to be efficient and thus would seek new and innovative ways to do their work regardless of their level of job-related learning.

The findings from the study highlight the importance of having a learning mindset to increase work engagement and subsequently job-related learning, which in turn is an important factor in influencing innovativeness

at work. Job-related learning is especially important for increasing innovativeness at work for people with lower levels of need for achievement. Several practical applications of these findings for manufacturing organisations have been discussed including interventions such as lean management and TQM to increase engagement and job-related learning opportunities.

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Appendices

Appendix A Ethics Approval

Appendix B Organizational Invitation Letter and Consent

Appendix C Participant Information Letter

Appendix D Permission sought for the use of Work engagement and Innovation scales

Appendix E Survey Questionnaire

APPENDIX A

ETHICS APPROVAL

Appendix A - Ethics approval

HUMAN RESEARCH ETHICS COMMITTEE



Notification of Expedited Approval

To Chief Investigator or Project Supervisor: **Doctor Gian Casimir**

Cc Co-investigators / Research Students: **Mr Kin Hui**

Re Protocol: **A model of goal orientation, work engagement, the need for achievement, job-related learning and innovation**

Date: **01-Aug-2012**

Reference No: **H-2012-0185**

Date of Initial Approval: **31-Jul-2012**

Thank you for your **Response to Conditional Approval** submission to the Human Research Ethics Committee (HREC) seeking approval in relation to the above protocol.

Your submission was considered under **Expedited** review by the Chair/Deputy Chair.

I am pleased to advise that the decision on your submission is **Approved** effective **31-Jul-2012**.

In approving this protocol, the Human Research Ethics Committee (HREC) is of the opinion that the project complies with the provisions contained in the National Statement on Ethical Conduct in Human Research, 2007, and the requirements within this University relating to human research.

Approval will remain valid subject to the submission, and satisfactory assessment, of annual

progress reports. *If the approval of an External HREC has been "noted" the approval period is as determined by that HREC.*

The full Committee will be asked to ratify this decision at its next scheduled meeting. A formal *Certificate of Approval* will be available upon request. Your approval number is **H-2012-0185**.

If the research requires the use of an Information Statement, ensure this number is inserted at the relevant point in the Complaints paragraph prior to distribution to potential participants You may then proceed with the research.

Conditions of Approval

This approval has been granted subject to you complying with the requirements for *Monitoring of Progress, Reporting of Adverse Events, and Variations to the Approved Protocol* as detailed below.

PLEASE NOTE:

In the case where the HREC has "noted" the approval of an External HREC, progress reports and reports of adverse events are to be submitted to the External HREC only. In the case of Variations to the approved protocol, or a Renewal of approval, you will apply to the External HREC for approval in the first instance and then Register that approval with the University's HREC.

- ***Monitoring of Progress***

Other than above, the University is obliged to monitor the progress of research projects involving human participants to ensure that they are conducted according to the protocol as approved by the HREC. A progress report is required on an annual basis. Continuation of your HREC approval for this project is conditional upon receipt, and satisfactory assessment, of annual progress reports. You will be advised when a report is due.

- ***Reporting of Adverse Events***

1. It is the responsibility of the person **first named on this Approval Advice** to report adverse events.
2. Adverse events, however minor, must be recorded by the investigator as observed by the investigator or as volunteered by a participant in the research. Full details are to be documented, whether or not the investigator,

or his/her deputies, consider the event to be related to the research substance or procedure.

3. Serious or unforeseen adverse events that occur during the research or within six (6) months of completion of the research, must be reported by the person first named on the Approval Advice to the (HREC) by way of the Adverse Event Report form within 72 hours of the occurrence of the event or the investigator receiving advice of the event.
4. Serious adverse events are defined as:
 - Causing death, life threatening or serious disability.
 - Causing or prolonging hospitalisation.
 - Overdoses, cancers, congenital abnormalities, tissue damage, whether or not they are judged to be caused by the investigational agent or procedure.
 - Causing psycho-social and/or financial harm. This covers everything from perceived invasion of privacy, breach of confidentiality, or the diminution of social reputation, to the creation of psychological fears and trauma.
 - Any other event which might affect the continued ethical acceptability of the project.
5. Reports of adverse events must include:
 - Participant's study identification number;
 - date of birth;
 - date of entry into the study;
 - treatment arm (if applicable);
 - date of event;
 - details of event;
 - the investigator's opinion as to whether the event is related to the research procedures; and
 - action taken in response to the event.
6. Adverse events which do not fall within the definition of serious or unexpected, including those reported from other sites involved in the research, are to be reported in detail at the time of the annual progress report to the HREC.

- ***Variations to approved protocol***

If you wish to change, or deviate from, the approved protocol, you will need to submit an *Application for Variation to Approved Human Research*. Variations may include, but are not limited to, changes or additions to investigators, study design, study population, number of participants, methods of recruitment, or participant information/consent documentation. **Variations must be approved by the (HREC) before they are implemented** except when Registering an approval of a variation from an external HREC which has been designated the lead HREC, in which case you may proceed as soon as you receive an acknowledgement of your Registration.

Linkage of ethics approval to a new Grant

HREC approvals cannot be assigned to a new grant or award (ie those that were not identified on the application for ethics approval) without confirmation of the approval from the Human Research Ethics Officer on behalf of the HREC.

Best wishes for a successful project.

Professor Allyson Holbrook

Chair, Human Research Ethics Committee

For communications and enquiries:

Human Research Ethics Administration

Research Services
Research Integrity Unit
HA148, Hunter Building
The University of Newcastle
Callaghan NSW 2308
T +61 2 492 18999
F +61 2 492 17164

Human-Ethics@newcastle.edu.au

Linked University of Newcastle administered funding:

Funding body	Funding project title	First named investigator	Grant Ref
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APPENDIX B

ORGANISATIONAL INVITATION LETTER AND CONSENT

Appendix B - 1. Organisation Invitation Letter



*Newcastle Business School
Social Sciences Building
University of Newcastle
University Drive
Callaghan NSW 2308 AUSTRALIA*

For further information:

Dr. Gian Casimir, Phone: +61 2 4921 8985, Email: gian.casimir@newcastle.edu.au

Kin Peng Felix HUI, Tel: +61 4 2220 8324, Email: c3036211@uon.edu.au

Date:

NAME

POSITION

ORGANISATION

Subject: Invitation to participate in a research project titled “A model of goal orientation, work engagement, the need for achievement, job-related learning and innovation.”

Dear Madam/Sir,

Your organisation is invited to take part in a study which is being conducted by Felix Hui Kin Peng from the Newcastle Business School. The aim of this study is to examine the relationships between goal orientation, work engagement, the need for achievement, job related learning and innovation. Felix Hui is conducting this study as part of his Doctor of Business Administration Degree. We would greatly appreciate your organization's participation.

Why is the research being done?

The aim of this study is to examine the relationships among goal orientation, work engagement, need for achievement, job-related learning and innovation.

Who can participate in the research?

Anyone who is an employee in the manufacturing industry can participate in this study.

What choice do you have?

Participation in this research project is entirely voluntary and you may withdraw your consent at any time without giving a reason. Your decision to participate or not to participate in this project will not affect you in any way and no one besides the researchers will know whether your organisation have participated in this study. Additionally, not participating in this study will not affect your relationship with the University of Newcastle.

What will you be asked to do?

If your organisation is willing to participate, you will be asked to distribute to each employee an email containing a Participant information letter and a link to an online anonymous questionnaire. Please refer to the Participant Information Letter, which is attached.

We would also appreciate it if you would refer us to other organisations that we can invite to participate in this study. You can do this by forwarding them a copy of the Organisational Invitational Letter and attachments. The researchers can be contacted at the above e-mail addresses if more information is required.

How much time will it take?

It will take approximately 20 minutes to complete the questionnaire.

What are the risks and benefits of participating?

There are no risks or direct benefits to you associated with participation in this study. Your participation in this research will, however, help us to explore factors that influence job related learning and innovation.

We are interested only in the relationships amongst personal goal orientation, need for achievement, work engagement, job-related learning and innovation. We are not interested in the specific responses of any particular individual or organisation. The confidentiality of responses is assured as only the researchers will have access to the completed questionnaires.

On completion of the study, we can provide you with a brief summary of the results of this project. Please contact Felix Hui or Gian Casimir if you wish to have a copy of the summary.

How will your privacy be protected?

It will not be possible to identify your organisation from the responses. Respondents or their organisations will not be identified in any report or publication. The confidentiality of responses is assured because only the researchers will have access to the completed questionnaires. Raw data will be stored in a password protected file in the researchers' computers for a minimum of five (05) years of awarding the degree as per the university's data storage policies.

How will the information collected be used?

The information obtained from this survey will be used to produce edited publications and conference presentations. The information collected will also contribute to the student researcher's Doctor of Business Administration degree. However, it will not be possible to identify the individual participants or organisations from any publications related to this study.

What do you need to do to participate?

Please read this Invitation Letter and be sure you understand its contents before you consent to participate.

If you agree to allow us to invite your employees to take part in the study, please complete the Organisation Consent Form, which is attached, and return it to us via email.

Further information

If you would like further information about this study, then please contact Gian Casimir or Felix Hui.

Thank you for taking the time to consider this invitation.

Yours sincerely,

Dr. Gian Casimir

Felix Hui Kin Peng

Principal Investigator

Research Student

Complaints about this research

This project has been approved by the University of Newcastle's Human Research Ethics Committee, Protocol Reference No.: XXXXX

Should you have concerns about your rights as a participant in this research, or you have any complaints about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, you can contact the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone +61249216333, email Human-Ethics@newcastle.edu.au.

Appendix B - 2. Organisation Consent Form



Dr Gian Casimir and Felix Hui Kin Peng
Newcastle Business School
University of Newcastle
AUSTRALIA

Consent Form for Participation in a Research Project

Dear Sirs,

I, _____, have read the information on the research project titled "A model of goal orientation, work engagement, the need for achievement, job-related learning and innovation", which is to be conducted by Felix Hui from the University of Newcastle, and all of my queries have been answered satisfactorily.

I hereby grant permission for members of _____ to participate voluntarily in the study. I give my consent freely and I understand that the project will be conducted in accordance with the Information Letters I have been provided.

I understand I can withdraw my approval at any time, without penalty, and do not have to give any reason for withdrawing.

I understand that all of the information collected will remain confidential to the researchers and that all of the information gathered from the survey will be stored securely and once the information has been analysed the questionnaires will be destroyed. I also understand that my identity will not be revealed without consent to anyone other than the investigators conducting the project.

Name: _____

Signature: _____

Date: _____

Sample of Returned Consent
Form

Organisation Consent Form

(Version 2: 18-07-2010)

Dr Gian Casimir and Felix Hui Kin Peng
Newcastle Business School
University of Newcastle
AUSTRALIA



Consent Form for Participation in a Research Project

Dear Sirs,

I, _____, have read the information on the research project titled "A model of goal orientation, work engagement, the need for achievement, job-related learning and innovation", which is to be conducted by Felix Hui from the University of Newcastle, and all of my queries have been answered satisfactorily.

I hereby grant permission for members of _____ to participate voluntarily in the study. I give my consent freely and I understand that the project will be conducted in accordance with the Information Letters I have been provided.

I understand I can withdraw my approval at any time, without penalty, and do not have to give any reason for withdrawing.

I understand that all of the information collected will remain confidential to the researchers and that all of the information gathered from the survey will be stored securely and once the information has been analysed the questionnaires will be destroyed. I also understand that my identity will not be revealed without consent to anyone other than the investigators conducting the project.

Name: _____

Signature: _____

Date: _____

APPENDIX C

PARTICIPANT INFORMATION LETTER

Appendix C - Participant Information Letter



Dr Gian Casimir and Felix Hui Kin Peng
Newcastle Business School
Social Sciences Building
University of Newcastle
University Drive
Callaghan NSW 2308
AUSTRALIA

For further information, please contact the following people:

Dr. Gian Casimir, Phone: +61 2 4921 8985, Email:

gian.casimir@newcastle.edu.au

Kin Peng Felix HUI, Tel: +614 2220 8324, Email: c3036211@uon.edu.au

Subject: Invitation to participate in a research project titled “A model of goal orientation, work engagement, the need for achievement, job-related learning and innovation.”

You are invited to participate in the research project identified above which is being conducted by Felix Hui Kin Peng, from the Newcastle Business School, University of Newcastle. The aim of this study is to examine the relationships among goal orientation, work engagement, need for achievement, job-related learning and innovation. Felix Hui is conducting this study as part of his Doctor of Business Administration Degree. We would greatly appreciate your participation.

Why is the research being done?

The purpose of the research is to examine the relationships among goal orientation, work engagement, the need for achievement, job-related learning and innovation.

Who can participate in the research?

You must be working in the manufacturing industry to participate in this study.

What choice do you have?

Participation in this research project is entirely your choice. If you do decide to participate, you may discontinue completing the survey without giving a reason. Your decision to participate or not to participate in this project will not affect you in any way and no one will know whether or not you have participated in this study. Additionally, not participating in this study will not affect your relationship with the University of Newcastle. Your consent to participate in this project will be considered as implied, once you return the completed questionnaire.

What will you be asked to do?

You will be asked to complete an anonymous online survey. You will be given an email link to a secure online survey site.

Completing the survey will be regarded as your implied consent to participate in this research project. Please note that because the survey is anonymous, you will not be able to withdraw from the study after you have completed the survey.

How much time will it take?

If you wish to take part in this study, it will take you approximately 20 minutes to complete the questionnaire.

What are the risks and benefits of participating?

There are no risks or direct benefits to you associated with participation in this study. Your participation in this research will, however, help us to examine factors that influence work engagement, job related learning and innovation.

It is important to obtain a better understanding of the drivers of work engagement, job related learning and innovation because organisations which better cater to the goal orientation and learning needs of their employees may result in higher work engagement and productivity.

How will your privacy be protected?

The questionnaire is anonymous. It will not be possible to identify you or your organisation from your responses. Respondents or their organisations will not be identified in any report or publication. The confidentiality of your responses is assured because only the researchers will have access to the completed questionnaires. Raw data will be stored in a password protected file in the researchers' computers for a minimum of five (05) years in accordance with University of Newcastle policy.

How will the information collected be used?

The information obtained from this survey will primarily be used to produce edited publications and conference presentations. It will also contribute to the student researcher's Doctor of Business Administration degree. A brief summary of the results of this project will be available from Felix Hui or Gian Casimir in August, 2012. Please contact Felix Hui or Gian Casimir if you wish to have a copy of the summary.

What do you need to do to participate?

Please read this Information Statement and be sure you understand its contents before you consent to participate. If you would like to participate, please complete the questionnaires using the survey link below. Please contact Felix Hui or Gian Casimir if there is anything you do not understand about this study or if you have any questions about this study.

Link to survey:

http://newcastlebusandlaw.us.qualtrics.com/SE/?SID=SV_77E0VVLvuF7qEjW

Further information

Please contact Felix Hui or Gian Casimir if you would like further information about this study.

Thank you for considering this invitation. We encourage you to retain this information sheet for your record.

Yours sincerely,

Dr. Gian Casimir

Felix Hui Kin Peng

Principal Investigator

Research Student

Complaints about this research

This project has been approved by the University of Newcastle's Human Research Ethics Committee, Protocol Reference No.: XXXXX

Should you have concerns about your rights as a participant in this research, or you have any complaints about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, you can contact the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone +61249216333, email Human-Ethics@newcastle.edu.au.

APPENDIX D

PERMISSION SOUGHT FOR
THE USE OF WORK
ENGAGEMENT AND
INNOVATION SCALES

Appendix D - 1. Permission for the use of work engagement scale.

From: "Schaufeli, W. (Wilmar)" <w.schaufeli@uu.nl>

To: "Felix Hui Kin Peng" <c3036211@uon.edu.au>

Subject: RE: Request to use Engagement scales

Date: Wednesday, 28 April, 2010 11:58 PM

Dear Felix Hui Kin Peng,

Thank you very much for your interest in the work of prof. Schaufeli.

You are allowed to use UWES for scientific purpose only, and you are not allowed to use this scale for any commercial purposes.

On the website below you can find the rules for using the UWES, where you also can download the scale including the manual. Good luck!

With kind regards,

Jochem Kramer

Jochem Kramer

Personal Assistant to Wilmar Schaufeli, PhD

Social & Organizational Psychology

PO Box 80.140; 3508 TC Utrecht; The Netherlands

Phone: +31(0)30-2539093

<http://www.schaufeli.com>

<<https://solismail.uu.nl/exchweb/bin/redir.asp?URL=http://www.schaufeli.com/>>

Van: Felix Hui Kin Peng [mailto:c3036211@uon.edu.au]

Verzonden: maandag 26 april 2010 6:37

Aan: Schaufeli, W. (Wilmar)

Onderwerp: Request to use Engagement scales

Dear Prof Scaufeli,

Greetings to you. My name is Felix Hui and I am doctoral student at the University of Newcastle, Australia. I intend to carry out research in the area of worker engagement and would like to make use of the Engagement scales published in your article "The Measurement of Engagement and Burnout: A Two Sample Confirmatory factor analytic Approach" published in the Journal of Happiness Studies, 2002.

I am willing to share the data obtained from my research and seek your permission in using the engagement scales that you have developed.

Best regards,

Felix Hui Kin Peng

Doctoral candidate (DBA),

University of Newcastle, NSW, Australia.

**Appendix D - 2. Permission for the use of role based performance –
Innovation scale.**

From: "Theresa" <theresa@eepulse.com>

To: "Kin Hui" <kin.p.hui@uon.edu.au>

Subject: Re: Request for permission to use Role-Based Performance
Scale

Date: Monday, 30 May, 2011 5:01 PM

You have my permission.

Good luck in your work.

Theresa

Theresa M. Welbourne, Ph.D.

President and CEO

eePulse, Inc.

1705 Woodland Drive

Suite 101

Saline, MI 48176-1614

Office +1-734-429-4400

Fax +1-734-429-4404

www.eepulse.com

Research Professor

Center for Effective Organizations

Marshall School of Business

University of Southern California

On 5/30/2011 12:49 AM, Kin Hui wrote:

>

> Dear Dr Welbourne,

>

> I am a Doctoral candidate (DBA) at the University of Newcastle, NSW,

> Australia. I wish to seek your kind permission to use the Role-Based

> Performance Scale in my dissertation and research.
>> Your kind permission would be greatly appreciated.
>
> Yours sincerely,
>> Felix Hui Kin Peng

> University of Newcastle DBA Student No. 3036211

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APPENDIX E

SURVEY QUESTIONNAIRE

Appendix E - Survey questionnaire

Qualtrics Survey Software

Page 1 of 11

Survey Questionnaire

Survey Questionnaire

A model of goal orientation, work engagement, the need for achievement, job-related learning and innovation.

Thank you very much for your time and help. Your contribution to this study is important and your participation is highly appreciated. This is an anonymous survey. Your personal or business identities are not required. Your responses will be kept confidential and used only for academic purposes. If you require further information, please contact the researchers via telephone or email.

GENERAL INSTRUCTIONS

1. There are no trick questions that will put you in any awkward situations.
2. We are concerned only with your opinions so please respond as honestly as possible. There are no right or wrong answers.
3. Specific instructions are given at the start of each section. Please read them carefully before answering and use the response scale provided.
4. Please answer all of the questions.

SECTION 1: DEMOGRAPHIC INFORMATION

SECTION 1: DEMOGRAPHIC INFORMATION

Age

- ☐ below 25
- ☐ 25-30
- ☐ 31-40
- ☐ 41-50
- ☐ 51-60
- ☐ over 60

Gender

- ☐ Male
- ☐ Female

Occupation

What is your role in your organisation ?

- ☐ Operations
- ☐ Service
- ☐ Design

<https://us.qualtrics.com/ControlPanel/PopUp.php?PopType=SurveyPrintPreview&WI...> 24/11/2012

- ☐ Engineering
- ☐ Administration
- ☐ Support
- ☐ IT
- ☐ Others

☐ Operator / Frontline staff

☐ Technician

☐ Line Leader

☐ Supervisor

☐ Technical / Executive

☐ Engineer

☐ Manager and above

☐ Doctoral level qualification

☐ Masters level

☐ Bachelors degree

☐ Diploma

☐ Vocational Education

☐ Secondary School

☐ Primary School

[illegible][illegible]

	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	
No of years																											

SECTION 2: GOAL ORIENTATION

SECTION 2: GOAL ORIENTATION

Please think about your current job and rate the following section using the scale below.
(Pick the one most applicable to you).

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
-------------------	----------	---------	-------	----------------

The opportunity to do challenging work is important for me.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly Agree

When I fail to complete a task, I plan to try harder the next time I work on it.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly Agree

I prefer to work on tasks that force me to learn new things.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly Agree

The opportunity to learn new things is important to me.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neutral

- ☐ Agree
- ☐ Strongly Agree

I do my best when I am working on a fairly difficult task.

-
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Neutral
 - ☐ Agree
 - ☐ Strongly Agree

I try hard to improve on my past performance.

-
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Neutral
 - ☐ Agree
 - ☐ Strongly Agree

The opportunities to extend my range of abilities are important to me.

-
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Neutral
 - ☐ Agree
 - ☐ Strongly Agree

When I have difficulty solving a problem, I enjoy trying different approaches to see which will work for me.

-
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Neutral
 - ☐ Agree
 - ☐ Strongly Agree

I want to do well in my job to show my ability to my family, friends, supervisors, or others.

-
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Neutral
 - ☐ Agree
 - ☐ Strongly Agree

My goal is to outperform most of my peers in my firm.

-
- ☐ Strongly Disagree

- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly Agree

I am motivated by the thought of outperforming my peers in my firm.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly Agree

It is important to me to do better than my peers.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly Agree

I am striving to demonstrate my ability relative to my peers in my firm.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly Agree

It is important to me to do well compared to others in my firm.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly Agree

My fear of performing poorly at my job is often what motivates me.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly Agree

I am afraid that if I ask my managers a "dumb" question, they might not think I am very smart.

-
- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly Agree

I often think to myself, "What if I do badly in my job?"

-
- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly Agree

I worry about the possibility of not meeting my goals or quotas.

-
- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly Agree

I wish my job was not evaluated according to my performance.

-
- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly Agree

I just want to avoid doing poorly in my job.

-
- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly Agree

SECTION 3: ENGAGEMENT

SECTION 3: ENGAGEMENT

Please think about your current job and rate the following statements using the following scale.

Never	Rarely	Sometimes	Often	Frequently
-------	--------	-----------	-------	------------

At work, I feel bursting with energy.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Frequently

At my job, I feel strong and vigorous.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Frequently

When I get up in the morning, I feel like going to work.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Frequently

I am enthusiastic about my job.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Frequently

I am proud of the work that I do.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Frequently

My job inspires me.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Frequently

I am immersed in my work.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Frequently

I get carried away when I am working.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Frequently

I feel happy when I am working intensely.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Frequently

SECTION 4: JOB-RELATED LEARNING, INNOVATION AND NEED FOR ACHIEVEMENT

SECTION 4: JOB-RELATED LEARNING, INNOVATION AND NEED FOR ACHIEVEMENT

Please think about your current job and on-the-job learning with regards to your current job when rating the following statements using the following Scale. On-the-job learning excludes education and training external to the job.


<input type="radio"/> Strongly Disagree	<input type="radio"/> Disagree	<input type="radio"/> Not Sure	<input type="radio"/> Agree	<input type="radio"/> Strongly Agree
---	--------------------------------	--------------------------------	-----------------------------	--------------------------------------

In the past 6 months, I have learned a lot of new things that have helped me to perform my job better.

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Not Sure
- ☐ Agree

 Strongly Agree

In the past 6 months, I have acquired a lot of new knowledge.
(Knowledge refers to mental abilities)

 Strongly Disagree


 Disagree

 Not Sure

 Agree

 Strongly Agree

In the past 6 months, I have acquired a lot of new skills.
(Skills refer to physical abilities to do things)

 Strongly Disagree


 Disagree

 Not Sure

 Agree

 Strongly Agree

I regularly come up with new ideas about how to do my job better.

 Strongly Disagree


 Disagree

 Not Sure

 Agree

 Strongly Agree

I regularly implement my new ideas in my job.

 Strongly Disagree


 Disagree

 Not Sure

 Agree

 Strongly Agree

I regularly find new ways to improve the way I do my work.

 Strongly Disagree


 Disagree

 Not Sure

 Agree

 Strongly Agree

I regularly find ways to improve my job-related processes and routines.

 Strongly Disagree

- ☐ Disagree
- ☐ Not Sure
- ☐ Agree
- ☐ Strongly Agree

I work hard.

-
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Not Sure
 - ☐ Agree
 - ☐ Strongly Agree

I do more than what is expected of me.

-
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Not Sure
 - ☐ Agree
 - ☐ Strongly Agree

I excel in what I do.

-
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Not Sure
 - ☐ Agree
 - ☐ Strongly Agree

I continue working until everything is perfect.

-
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Not Sure
 - ☐ Agree
 - ☐ Strongly Agree

I work too much.

-
- ☐ Strongly Disagree
 - ☐ Disagree
 - ☐ Not Sure
 - ☐ Agree
 - ☐ Strongly Agree

I plunge into a task with all my heart.

-
- ☐ Strongly Disagree
☐ Disagree
☐ Not Sure
☐ Agree
☐ Strongly Agree

I am not one of those people who do just enough work to get by.

-
- ☐ Strongly Disagree
☐ Disagree
☐ Not Sure
☐ Agree
☐ Strongly Agree

I am highly motivated to succeed.

-
- ☐ Strongly Disagree
☐ Disagree
☐ Not Sure
☐ Agree
☐ Strongly Agree

I do a lot of work.

-
- ☐ Strongly Disagree
☐ Disagree
☐ Not Sure
☐ Agree
☐ Strongly Agree

I have a fast pace to my life.

-
- ☐ Strongly Disagree
☐ Disagree
☐ Not Sure
☐ Agree
☐ Strongly Agree

APPENDIX F

FACTOR ANALYSIS USING SPSS

1 - Factor Analysis for Goal Orientation

Communalities		
	Initial	Extraction
LG3	.346	.433
LG4	.435	.750
LG7	.276	.320
PG2	.628	.688
PG3	.646	.681
PG4	.592	.667
PG5	.488	.506
PG6	.436	.416
PA1	.334	.386
PA2	.344	.418
PA3	.420	.585
PA4	.369	.486

Extraction Method: Principal Axis
Factoring.

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.921	32.672	32.672	3.492	29.097	29.097	2.992	24.935	24.935
2	2.192	18.270	50.943	1.730	14.418	43.514	1.839	15.323	40.258
3	1.588	13.232	64.175	1.114	9.283	52.797	1.505	12.539	52.797
4	.711	5.928	70.103						
5	.697	5.809	75.912						
6	.607	5.056	80.968						
7	.508	4.230	85.198						
8	.456	3.796	88.994						
9	.408	3.403	92.397						
10	.376	3.135	95.532						
11	.305	2.538	98.070						
12	.232	1.930	100.000						

Extraction Method: Principal Axis

Factoring.

Rotated Factor Matrix^a

	Factor		
	1	2	3
LG3			.657
LG4			.857
LG7			.543
PG2	.816		
PG3	.814		
PG4	.802		
PG5	.677		
PG6	.631		
PA1		.538	
PA2		.630	
PA3		.751	
PA4		.695	

Extraction Method: Principal Axis Factoring.

Rotation Method: Varimax with Kaiser
Normalization.

a. Rotation converged in 5 iterations.

2 - Factor Analysis for WE

Communalities

	Initial	Extraction
IN1	.431	.529
IN2	.430	.534
IN3	.447	.563
IN4	.406	.491

Extraction Method: Principal Axis Factoring.

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.587	64.686	64.686	2.117	52.935	52.935
2	.598	14.952	79.637			
3	.441	11.032	90.670			
4	.373	9.330	100.000			

Extraction Method: Principal Axis Factoring.

Factor Matrix^a

	Factor
	1
IN3	.750
IN2	.731
IN1	.728
IN4	.701

Extraction Method:
Principal Axis Factoring.

a. 1 factors extracted. 5
iterations required.

3 - Factor Analysis for JRL

Communalities

	Initial	Extraction
JRL1	.596	.718
JRL2	.598	.722
JRL3	.580	.693

Extraction Method: Principal Axis
Factoring.

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.422	80.737	80.737	2.133	71.096	71.096
2	.298	9.943	90.680			
3	.280	9.320	100.000			

Extraction Method: Principal Axis Factoring.

Factor Matrix^a

	Factor
	1
JRL1	.847
JRL2	.850
JRL3	.833

Extraction Method:

Principal Axis Factoring.

a. 1 factors extracted. 6
iterations required.

4 - Factor Analysis for NA

Communalities		
	Initial	Extraction
NA1	.457	.434
NA2	.604	.646
NA3	.335	.266
NA4	.301	.264
NA5	.453	.502
NA6	.458	.432
NA7	.351	.269
NA8	.287	.286
NA9	.488	.423
NA10	.326	.338

Extraction Method: Principal Axis Factoring.

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.441	44.411	44.411	3.860	38.598	38.598
2	1.003	10.028	54.438			
3	.894	8.942	63.380			
4	.737	7.372	70.752			
5	.680	6.796	77.547			
6	.636	6.355	83.903			
7	.568	5.677	89.579			
8	.419	4.189	93.768			
9	.337	3.371	97.139			
10	.286	2.861	100.000			

Extraction Method: Principal Axis Factoring.

Factor Matrix^a

	Factor
	1
NA1	.659
NA2	.804
NA3	.516
NA4	.514
NA5	.708
NA6	.658
NA7	.518
NA8	.535
NA9	.650
NA10	.581

Extraction Method:
Principal Axis Factoring.

a. 1 factors extracted. 5
iterations required.

5 - Factor Analysis for IN

Communalities

	Initial	Extraction
IN1	.431	.529
IN2	.430	.534
IN3	.447	.563
IN4	.406	.491

Extraction Method: Principal Axis Factoring.

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.587	64.686	64.686	2.117	52.935	52.935
2	.598	14.952	79.637			
3	.441	11.032	90.670			
4	.373	9.330	100.000			

Extraction Method: Principal Axis Factoring.

Factor Matrix^a

	Factor
	1
IN3	.750
IN2	.731
IN1	.728
IN4	.701

Extraction Method:
Principal Axis Factoring.

a. 1 factors extracted. 5
iterations required.