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CHAPTER 1: SCIENTIFIC OVERVIEW OF THE RESEARCH

The context of the present research is organisational effectiveness; more specifically, the role of people measures in predicting perceptions of business performance indicators as aspects of an organisation's effectiveness. The knowledge economy workplace is characterised by globalisation, downsizing, re-engineering, technological advances and resource scarcity (Rahman, 2014). Accordingly, organisational success is dependent on the ability to be agile, adaptive and resourceful when pursuing organisational goals whilst optimising available resources (Chang, 2015). The concepts of organisational efficiency and effectiveness have become strategic priorities as organisations are aiming to capitalise on new market opportunities by leveraging available resources. Data-driven decision-making practices have become the norm and the ability to measure organisational effectiveness has become a key requirement for making informed business decisions in relation to resource allocation, monitoring of performance and operational efficiency (Bersin, 2015).

Zheng, Yang, and McLean (2010) state that organisational effectiveness is the extent to which organisations are able to achieve articulated goals and that factors such as knowledge management, organisational structure, strategy and culture are key components that will determine the ability of the organisation to achieve success. Organisational effectiveness has become a relevant term in today's highly competitive and turbulent marketplace, as it also refers to the ability of the organisation to assess productivity and stability amidst this ever-changing marketplace (Ukpadi, Ikaba, Enyindah, Orji, & Idatoru, 2014). Traditionally, organisational effectiveness has largely been measured by financial and operational business indicators, yet the knowledge economy has demanded a re-evaluation of the factors that inform the construct (Rahman, 2014). People effectiveness has become a critical contributor to the organisational effectiveness scorecard owing to the role human capital plays as a source of competitive advantage in the knowledge economy workplace (Shiri, 2012). The challenge, however, remains in the measurement of people effectiveness as a contributor to organisational effectiveness. This challenge is due to the abstract nature of the concept and the current lack of measurement criteria (Oladimeji & Akingbade, 2012).

This research assessed the validity of the Psychological Work Immersion Scale [PWIS] (Veldsman, 2013) as a measure of factors influencing people effectiveness in relation to predicting individuals' perceptions regarding the results of a set of three business performance indicators, namely, profit/loss, costs, and cash flow related to operating activities. The measurement of psychological work immersion included the measurement of (1) a set of six people effectiveness enablers (manager effectiveness, individual congruence,

strategic connection, appreciative feedback, enabling environment, and intra-team effectiveness) and (2) three psychological attachment indicators (absorption, intrinsic motivation, and commitment) as independent (predictor) variables in explaining the variance in business performance indicators, which were treated as dependent (criterion) variables in measuring organisational effectiveness. Person-centred variables such as age, gender, race, and tenure were used as control variables. The research concluded with recommendations to use the Psychological Work Immersion Scale (Veldsman, 2013) as a predictive people effectiveness measurement tool within organisations, with specific reference to the improvement of psychological work immersion levels (people effectiveness enablers and psychological attachment) in order to achieve enhanced business performance. The research found that improvement in people effectiveness (as represented by the variables measured by the PWIS (Veldsman, 2013) and perceptions of key business performance factors (profit/loss, costs, and cash flow related to operating activities) ultimately contribute to organisational effectiveness and thus contribute to the business's survival and growth in today's volatile competitive markets (Shiri, 2012; Ukpadi et al., 2014; Zheng et al., 2010).

This chapter provides the background and motivation for the study. The problem statement is articulated through the research questions. The chapter also presents the research aim and method which ensured the appropriate methodical structuring of the research. The chapter concludes with a discussion of the rest of the chapters that will be presented as part of this study.

1.1 BACKGROUND AND MOTIVATION FOR THE RESEARCH

The organisational landscape has changed as a result of significant changes in the societal, economic and technological domains that influence how and where organisations operate (Boyd, 2014). Guttman (2009) states that globalisation, disruptive technological advances, an increasingly competitive global landscape and a constant pressure to innovate characterise the knowledge economy. Organisations are expected to achieve higher levels of productivity, increased client satisfaction and improved profitability, in the presence of resource scarcity and increased competition (Mogotsi, Boon, & Fletcher, 2011). Business performance has become dependent on the ability of the organisation to align all practices towards achieving set goals, reducing waste and costs and streamlining all practices to contribute towards organisational success (Hussain & Murthy, 2013). Organisational effectiveness has become a strategic priority, with businesses streamlining operations in order to ensure the achievement of strategic goals with the limited available resources

(Salanova, Agut, & Peiro, 2005). There is a general consensus that organisational effectiveness relates to the alignment of organisational resources in order to successfully achieve set goals within a particular timeframe and context (Finn, 2013). Traditionally, organisational effectiveness was measured predominantly by financial and operational business indicators (Alhaji & Yusoff, 2012). In the context of the present study, a set of key business performance indicators were used as criteria for organisational effectiveness: profit/loss from operating activities (profit or loss from commercial activities for a stipulated period), operating costs (expenses incurred as a result of the cost of running the business, excluding depreciation) and cash flow from operating activities (the amount of cash generated from operating income, i.e. earnings minus operating expenses and net income adjustments). This approach is based on Kaplan and Norton's (2001) view that organisations define their own business measurements relevant to their context and what they consider to be success.

Profitability, operational efficiency, speed of production and quality measures traditionally dominated the organisational effectiveness scorecard, with factors related to people effectiveness being seen as a cost-incurring exercise focused on compliance (Chavan, 2009). The rise of the knowledge economy, however, has reinforced the key contribution of people effectiveness as a source of competitive advantage, with people effectiveness indicators such as psychological attachment becoming key indicators of organisational effectiveness (Catalino & Frederickson, 2011).

Psychological attachment has been studied extensively in terms of its influence on business performance (Oghojafor, Olayemi, Okonji, & Okolie, 2011). Psychological attachment is defined as the individual connection, alignment and drive that an employee experiences in relation to the organisational purpose, values and identity. This leads to a state of emotional and cognitive involvement in the work experience (Coetzee & Veldsman, 2013). Within the context of this study, psychological attachment has been defined in terms of the constructs of commitment (Oyewobi, Suleiman, & Muhammad-Jamil, 2012; Zeinabadi, 2010), absorption (Schaufeli, Salanova, González-Romá, & Bakker, 2002) and employee motivation (Catalino & Fredrickson, 2011; Rothmann, 2014). These psychological attachment variables have been linked to business outcomes such as customer satisfaction and productivity (Harter, Schmidt, & Hayes, 2002). In a study conducted by Gallup (2013), employee commitment and willingness were studied in terms of their relationship to key business outcomes. From the 192 organisations across 34 countries within the sample, a 10% improvement in customer satisfaction, 22% higher profitability, 21% higher productivity scores, 37% lower absenteeism scores and a 41% improvement in quality were reported in

organisations that achieved higher levels of psychological attachment. Research within the academic landscape has also reported a positive correlation between business performance and commitment (Oghojafor et al., 2011), job satisfaction (Rigby, 2015), employee engagement (Zheng et al., 2010) and higher levels of motivation (Macey & Schneider, 2008).

Psychological attachment (commitment, absorption and employee motivation) is generally influenced by various organisational practices that determine the perceived levels of psychological attachment present within the organisation (Rigby, 2015). These enablers, termed *people effectiveness enablers*, refer to practices that either inhibit or enable the presence of psychological attachment within the organisation. The practices relevant to the present study include manager effectiveness, appreciative feedback, strategic connection, individual congruence, an enabling environment and intra-team relations (Brundage & Koziel, 2010; Jordan & Audia, 2012; Roussin & Webber, 2012).

From a literature perspective, the effectiveness of the manager has been cited as a key source of influence on factors related to employee performance and psychological attachment (Brundage & Koziel, 2010; Döckel, 2003; Porter & Tanner, 2004). Manager effectiveness has been associated with various factors that will influence employee job performance such as commitment, job satisfaction and organisational citizenship behaviour which are related to the perceived levels of psychological attachment within the organisation (Dirks & Ferrin, 2002; Roussin & Webber, 2012). Appreciative feedback refers to the perceived meaningfulness of discussions of employees' performance and the extent to which employees receive feedback on their performance and strengths (Jordan & Audia, 2012). Performance management is rooted in the concept of feedback pertaining to job performance and has been associated with increasing employees' level of commitment and attachment (Lin, Lin, & Lin, 2012).

Organisational success is dependent on employees' understanding of how they contribute towards the vision and the mission of the organisation through the achievement of team and individual goals (Aggarwal & D'Souza, 2012; Mafini & Pooe, 2013). A clear line of sight between individual contribution and organisational goals is critical in order to foster psychological identification and engagement with the work and the organisational identity (Coetzee & Veldsman, 2013). The classic work by Hackman and Oldham (1980) on job characteristics emphasises the importance of perceived task significance that flows from the link between the employees' work and the overall organisational goals. Team effectiveness is a key contributor to organisational performance and will influence employees' perceptions of psychological safety, identification with the environment and overall engagement level (Dierdorff & Ellington, 2012). As co-workers exhibit degrees of competence, benevolence

and integrity towards one another, trust relationships are formed amongst individual team members that will facilitate a performing team environment (Roussin & Webber, 2012). Positive team interactions and relations are related to stronger psychological identification with the workplace, the job, co-workers and the organisation as a whole (Rothmann, 2014). The perceived proper implementation and management of human resource policies and procedures have exhibited increased organisational commitment and lower turnover intention (Juhdi, Pa'Wan, Milah, Hansaram, & Othman, 2012). Work–role fit and a sense of being able to master one's work are associated with positive work experiences and enhanced individual and organisational performance (Rothmann, 2014). The concept of individual congruence – defined as the employee's perception of a fit between their strengths, competencies and skills and the requirements of the job – have also been associated with individual commitment and performance (Coetzee & Veldsman, 2013).

The research focused on assessing the test-retest validity of the PWIS in predicting perceptions of business performance. This entailed examining the magnitude and direction between the PWIS factors (people effectiveness enablers and psychological attachment) in predicting individual perceptions of business performance in terms of the three business indicators (profit/loss, cash flow, operating costs). The research also explored whether a high sense of psychological attachment significantly mediated the link between perceptions of people effectiveness enablers and perceptions of business performance within time and across time. This approach is in line with the view that people effectiveness contributes to business outcomes and that a significant positive relationship exists (Finn, 2013; Oghojafor et al., 2011; Rigby, 2015).

Psychological attachment and people effectiveness enablers were measured using the Psychological Work Immersion Scale (PWIS) developed by Veldsman (2013) as a measure of psychological work immersion. The term 'psychological work immersion' refers to a pervasive state of profound emotional, cognitive and physical identification with, and enjoyment of, the work experience within a particular socio-cultural context as an outflow of the interaction between people effectiveness enablers within the workplace and individuals' psychological attachment (Veldsman, 2013). The PWIS (Veldsman, 2013) measures people effectiveness enablers (manager effectiveness, individual congruence, strategic connection, appreciative feedback, enabling environment, intra-team effectiveness) and psychological attachment (commitment, absorption and employee motivation) as indicators of psychological work immersion with psychological attachment seen as an outflow of the enablers in the psychological work immersion construct meta-domain. The latter are seen as the antecedents of psychological attachment. Both psychological attachment and people

effectiveness enablers constitute factors related to people effectiveness measures. The scale was selected because of the relevance of the PWIS (Veldsman, 2013) as a measure of people effectiveness in the knowledge economy environment and the increasing importance attached to the constructs relevant to this study (Veldsman, 2013). Figure 1.1 provides an overview of the proposed research:

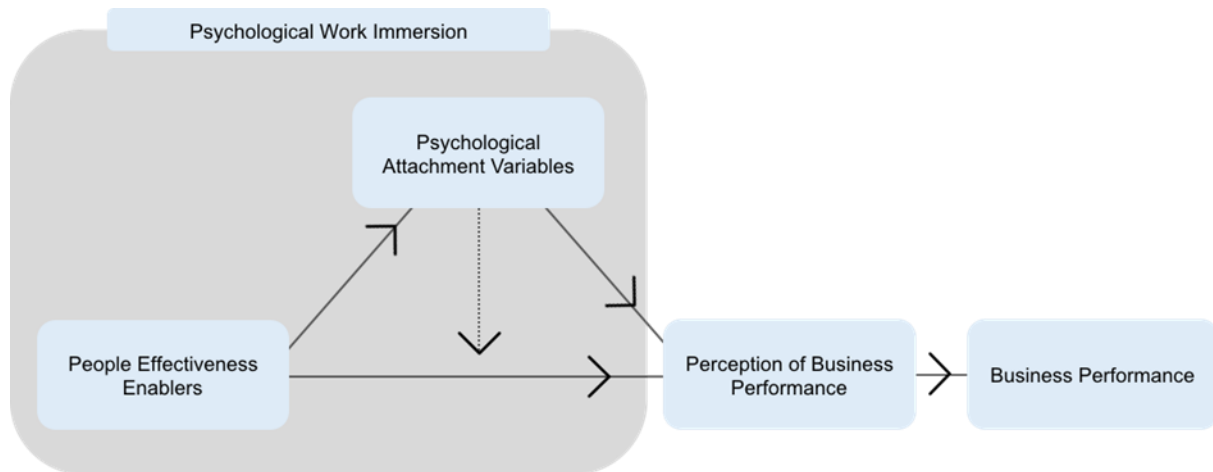


Figure 1.1. An overview of the proposed research

From the literature it seems evident that psychological attachment variables (commitment, absorption, employee motivation) yield a positive significant relationship with business performance (i.e. indicators such as profit/loss, costs, and cash flow related to operating activities). People effectiveness enablers (manager effectiveness, appreciative feedback, strategic connection, individual congruence, enabling environment and intra-team relations) have a significant positive relationship with both psychological attachment variables (commitment, absorption, employee motivation) and business performance. The present study further aimed to explore the psychological attachment variables (commitment, absorption, employee motivation) and people effectiveness enablers (manager effectiveness, appreciative feedback, strategic connection, individual congruence, enabling environment and intra-team relations) in relation to business performance indicators (i.e. profit/loss, costs, and cash flow related to operating activities) at two defined points in time (Time 1 and Time 2 – with an interval of 14 months). This approach is in line with the criteria stipulated by Finn (2013), Rigby (2015) and Lambe (2007), that is, the longevity and sustainability of observed measures within the environment, as well as the requirement articulated by Bersin (2015) to evaluate the validity of people effectiveness measures in terms of predicting business performance. Figure 1.2 showcases the approach related to the measurement of psychological attachment and people effectiveness enablers and the relationship with business performance at two stipulated points in time (T1 and T2):

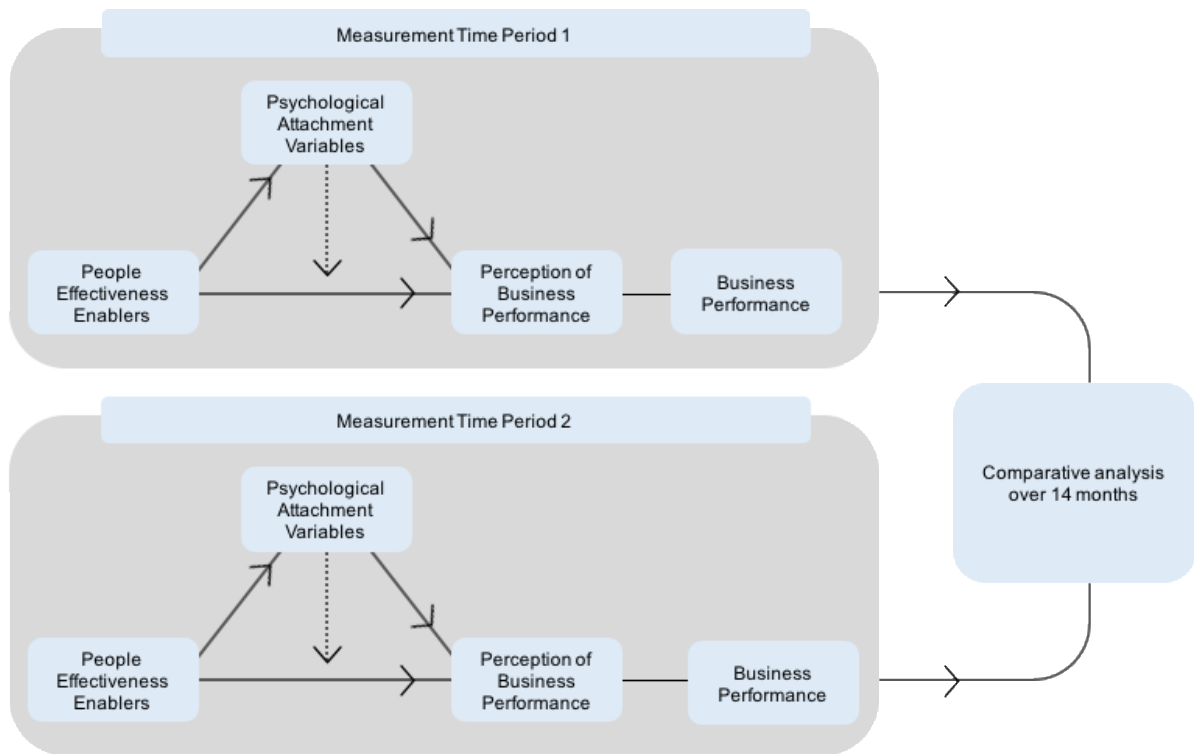


Figure 1.2. Comparative measures over time

The study applied the Psychological Work Immersion Scale (PWIS) (Veldsman, 2013) as a measure of psychological attachment and people effectiveness enablers and validated the use of the scale as a measurement for predicting business performance at two defined periods of time (T1 and T2). The study utilised control variables related to socio-demographics such as race, age, tenure and gender. This approach is consistent with previous research conducted by Veldsman (2013) and Coetzee and Veldsman (2013) in terms of the use of the PWIS (Veldsman, 2013) as a valid and reliable measure of psychological work immersion (psychological attachment and people effectiveness enablers) in the South African context.

1.2 PROBLEM STATEMENT

The knowledge economy has demanded a change adaptable and agile organisation that is able to effectively and efficiently deliver on strategic goals amidst a turbulent environment (Boyd, 2014; Guttman, 2009). Disruptive technologies, globalisation and a war for talent have resulted in a re-evaluation of organisational practices to be able to utilise available resources in a manner that is efficient and effective (Alhaji & Yusoff, 2012). Organisational effectiveness has become a strategic priority as organisations are aiming to capitalise on their limited resources to achieve organisational goals (Oghojafor et al., 2011). With the rise of people effectiveness as a key enabler of competitive advantage traditional measures of

organisational effectiveness that focused only on financial and operational indicators have become too narrow (Oyewobi et al., 2012). The inability to measure people effectiveness as a key contributor to the broader effectiveness of the organisation has resulted in an organisational environment that is unable to effectively track and monitor performance (Mohamed, Hui, Rahman, & Aziz, 2014). Consequently, the contribution of people effectiveness to the broader organisational effectiveness domain has come under scrutiny, as business leaders are challenging human resources practitioners to demonstrate the influence and value of human capital in achieving organisational outcomes (Rigby, 2015). Re-engineering, downsizing and cost cutting has become the norm, investments in human capital have become expensive and questions have been raised regarding the rationale behind investing in people practices as opposed to automation (Boyd, 2014).

The current literature indicates that even though people effectiveness has related to various constructs such as job satisfaction, employee engagement and commitment that translate into improvements in business performance, the view thus far has largely been a reactive perspective that focuses on a retrospective analysis of the past and the present (Rigby, 2015). Bersin (2015) states that people effectiveness measurements should not only be able to provide a reflective view on past performance but also to demonstrate predictive analytical insight into future business performance if they are to remain relevant in knowledge economy organisations. With the rise of the big data revolution in human resources (HR), business leaders have started to question the value-add of human capital in the organisation. Consequently, as a result of the inability to showcase return on investment for investing in people practices, a large number of organisations have started to reduce financial investment in human capital initiatives and development (Finn, 2013). This trend has, however, occurred in a vacuum, which has been created by human resource practitioners and industrial psychologists who rely on reactive data trends relating to past events to make business decisions on future investment in human capital.

From a human resource and industrial psychology perspective, the inability to measure predictive indicators of people effectiveness and their influence on business performance has diluted the strategic business partner role that is expected of human resource functions in the knowledge economy (Zheng et al., 2010). The inability to provide measurements for strategic decision-making aligned to tangible business performance outcomes and insights will continue to undermine the strategic role that HR departments should play in organisations. Without the ability to provide predictive insights in terms of scenario planning for the future, based on realistic data-driven predictions, the people effectiveness contribution towards organisational effectiveness and success will forever be limited to

reporting on the past or present, as opposed to providing predictive insights into future possibilities (Lavelle, Lesser, Shockley, Hopkins, & Kruschwitz, 2011).

The study contributes to the current body of knowledge regarding the lack of predictive measurements of people effectiveness and their relationship with business performance. The study aimed to test the reliability and validity of the Psychological Work Immersion Scale (PWIS) (Veldsman, 2013) as a measure of people effectiveness (psychological attachment and people effectiveness enablers) and as a valid predictive measure of business performance (profit/loss, costs, and cash flow related to operating activities). The study supports the establishment of human resources practitioners and industrial psychologists as strategic role players in the organisation through the use of the PWIS (Veldsman, 2013) as a predictive measure of perceptions of business performance in an effort to ultimately contribute towards future-orientated business scenarios and strategies. The PWIS (Veldsman, 2013), as a valid indicator of perceptions of business performance, could be applied in the field of Industrial and Organisational Psychology with a specific reference to organisational development practices. The scale could be used to showcase the contribution of people effectiveness to business performance and could potentially be used to inform strategic decision-making practices related to where and how organisational development practices should be applied in order to improve business performance through people effectiveness interventions.

Based on this context, the research tested the following research hypotheses:

- Ha1: The PWIS factor structure is a valid measure of the psychological work immersion construct across time (T1 to T2 over 14 months).
- Ha2: The PWIS has acceptable internal consistency reliability across time (T1 and T2).
- Ha3: The PWIS demonstrates test-retest reliability across time.
- Ha4: The people effectiveness enablers and psychological attachment variables significantly predict perception of business performance indicators (profit/loss, costs, and cash flow related to operating activities).
- Ha5: Strong perceptions of people effectiveness enablers relates to strong individual perceptions of business performance through a high sense of psychological attachment
- Ha6: The link between psychological work immersion and business performance increases over time with a significant increase in business performance.

The following general research questions were defined based on the problem discussed.

1.2.1 General research question

- Do the PWIS variables positively and significantly predict perceptions of business performance indicators (profit/loss, costs, and cash flow related to operating activities) over time?

1.2.2 Research questions relevant to the literature

- How does the literature conceptualise organisational effectiveness and its relationship to people effectiveness and business performance?
- How does the literature conceptualise psychological work immersion as an indicator of people effectiveness?
- What is the theoretical association between psychological work immersion and business performance?
- What are the implications for organisational development interventions focused on people practices related to organisational effectiveness and business performance?

1.2.3 Research questions relevant to the empirical study

- Is the PWIS a valid empirical measure of people effectiveness for T1 and T2 over a 14-month period?
- Is the PWIS a valid measurement model in terms of test-retest reliability over time?
- Can the PWIS be used as a predictive measurement of perception of key business performance indicators (profit/loss, costs, and cash flow related to operating activities)?
- What are the longitudinal links between levels of psychological work immersion and business performance over a period of 14 months within the same sample in a specified organisation?
- What conclusions can be drawn and what recommendations can be formulated for future research?
- What are the implications for organisational development interventions focused on people practices aimed at improving organisational effectiveness?

The research questions informed the general and specific aims of the proposed research.

1.3 AIMS OF THE RESEARCH

Based on the formulated research questions, the following general and specific aims were formulated.

1.3.1 General aims of the research

The general aim of the proposed research is to explore the PWIS as a predictor of perception of business performance indicators (profit/loss, costs and cash flow related to operating activities) over time (as measured at T1 and T2 over 14 months).

1.3.2 Specific aims of the research

1.3.3.1 Literature review

The specific aims of the theoretical study are the following:

- **Research aim 1:** Conceptualise organisational effectiveness and its relationship to people effectiveness and business performance
- **Research aim 2:** Conceptualise psychological work immersion as an indicator of people effectiveness
- **Research aim 3:** Describe the theoretical association between psychological work immersion and business performance
- **Research aim 4:** Describe the implications of organisational development interventions focused for people practices related to organisational effectiveness and business performance

1.3.3.2 Empirical study

The empirical phase of the proposed study will aim to achieve the following:

- **Research aim 1:** To empirically assess the psychometric properties of the Psychological Work Immersion Scale (PWIS) in terms of its validity as a measurement model (construct, discriminant and convergent validity) (time 1 versus time 2: within-subject analysis).
- **Research aim 2:** To empirically assess the test-retest reliability of the PWIS across time (time period of 14 months).
- **Research aim 3:** To empirically assess the predictive (criterion) validity of the PWIS in terms of perceptions of key business performance indicators (profit/loss, costs, and cash flow related to operating activities) across time (time 1 versus time 2: within-subject analysis comparisons).
- **Research aim 4:** To assess longitudinal links between psychological work immersion and business performance indicators (14-month time interval).
- **Research aim 5:** Draw conclusions and formulate recommendations for future research.



- **Research aim 6:** Critically evaluate the implications of organisational development interventions focused on people practices aimed at improving organisational effectiveness.

1.4 STATEMENT OF SIGNIFICANCE

Organisational effectiveness has become a strategic priority in organisations that aim to optimise the use of limited resources in order to achieve strategic goals (Hussain & Murthy, 2013). From a people perspective, if their contribution is to remain relevant and add value to organisational decision-making practices, they need to be quantified and analysed based on predictive analytics. Currently, the literature indicates that there is limited research available related to predictive measurements for people effectiveness, yet this domain seems to have gained relevance in terms of understanding business performance (Macey & Schneider, 2008; Parhizgari & Gilbert, 2004; Zheng et al., 2010).

The research is a starting point for evaluating the usefulness of the PWIS (Veldsman, 2013) as a measure of the contribution of people effectiveness to organisational effectiveness, as well as the predictive properties of the PWIS (Veldsman, 2013) as a measurement of people effectiveness. The research aimed to explore the PWIS (Veldsman, 2013) as a predictor of perceptions of business performance indicators (profit/loss, costs, and cash flow related to operating activities) over time (as measured at T1 and T 2) through the use of a test/retest methodology using a purposive sample in the non-profit services industry in South Africa over a 14-month period.

1.4.1 Potential contribution on a theoretical level

From a theoretical perspective, the current literature indicates the lack of a clear definition of people effectiveness in the domain of organisational effectiveness, as well as the lack of a clear definition of the criteria that should be measured as part of people effectiveness (Zheng et al., 2010). In addition, psychological work immersion as an indicator of people effectiveness in terms of the components of the construct that should be measured has not been adequately explored in the current literature. The relationship between psychological work immersion and business performance also needs further exploration if the PWIS (Veldsman, 2013) is to be applied as a valid predictive indicator of business performance.

The study contributes to the current literature on the components of organisational effectiveness related to people effectiveness and business performance in the organisation. The study further contributes to an understanding of the concept of psychological work immersion and the dimensions that influence organisational effectiveness as an indicator of

business performance. The study also adds to the current body of knowledge related to practices of psychological attachment and people effectiveness enablers in organisations and the resulting influence on business performance. As a whole, the study contributes to the current literature on organisational development as well as the measurement of people effectiveness within knowledge economy organisations.

1.4.2 Potential contribution on an empirical level

The rise in technology and advanced big data has demanded a focus on predictive analytics as part of the strategic contribution made by the human resources function to business success (Bersin, 2015). From a people effectiveness perspective, the need to quantify and measure the effectiveness of human capital in the organisation has become crucial for informing strategic business decisions on the use of resources to achieve organisational goals. Currently, the measurement landscape is predominantly focused on a reactive measurement of past events with limited focus on predictive analytical information that can be used to forecast future business trends and phenomena. The reality is that only a limited number of organisations have been able to start using predictive analytical methods to forecast people effectiveness trends, yet this has become a key requirement for human resource practitioners as they strive to fulfil their strategic business partner role.

The present study empirically assesses the validity of the PWIS (Veldsman, 2013) as a measurement of people effectiveness in predicting perception of business performance. The study contributes to the current body of knowledge related to the concept of psychological work immersion, which is defined as people effectiveness enablers and psychological attachment, and its usefulness as a measure of people effectiveness. The study further evaluates the PWIS (Veldsman, 2013) as a valid and reliable predictor of perception of business performance, which, from an organisational perspective, yields new knowledge pertaining to the way in which human capital performance is measured in knowledge economy organisations.

1.4.3 Potential contribution on a practical level

From a practical perspective, the inability of human resource practitioners and industrial psychologists to quantify the measurement of people effectiveness has resulted in a lack of credibility when it comes to positioning human capital as a strategic function in the knowledge economy organisation. The inability to use data pertaining to measuring people effectiveness to predict future trends has resulted in human resources being positioned as a reactive compliance function unable to contribute to the strategic organisational domain. Human capital has been highlighted as a critical source of competitive advantage, yet

currently the inability to measure and track effectiveness in this domain has resulted in a reactive problem-solving approach to managing human resources.

The research positions the PWIS (Veldsman, 2013) as a valid and reliable measure of people effectiveness (Veldsman & Coetzee, 2014) and assesses the use of the scale as a predictive measurement of perception of business performance. This study contributes to the positioning of human resources as a strategic function with the ability to provide strategic future-based insights for business decisions by quantifying people effectiveness measures and their influence on business performance. The research also contributes to an awareness of the importance of people effectiveness enablers (manager effectiveness, individual congruence, strategic connection, appreciative feedback, an enabling environment, and intra-team effectiveness) as key focus areas for industrial and organisational psychologists when designing interventions aimed at improving organisational effectiveness. The research provides insight into how people effectiveness in organisations needs to be approached, managed and improved over time in order to improve business performance and contribute to building a sustainable and effective organisation that achieves set goals.

1.5 THE RESEARCH MODEL

The research model is positioned within the context of social sciences research, as defined by Mouton and Marais (1996). Social sciences research can be defined as the study of human interaction, in order to gain a better understanding of phenomena (Rubin & Babbie, 2014). Cresswell (2013) describes social sciences research as the exploration of the following four questions, which help the researcher make decisions during the course of a study:

- What is the theory of knowledge that lies behind the theoretical perspective of the research?
- What is the philosophical stance that informs the research questions?
- What is the plan that links the methods to outcomes?
- What are the techniques and procedures that inform the way in which the research questions are answered?

The social sciences research model defined by Mouton and Marais (1996) consists of the various dimensions, which were applied in the research. Mouton and Marais (1996) define methodological assumptions as the beliefs that are prevalent in social sciences research. Bhattacharjee (2012) describes methodological assumptions in research as the foundational

beliefs that influence the decisions the researcher needs to make about the research methodology.

The table below provides a summary of the dimensions and describes their relevance to the present research.

Table 1.1.

Dimensions of Social Sciences Research

Dimension	Description
Sociological	Social context of the research that positions it within time and place
Ontological	Nature of being and becoming (theoretical – philosophical lense)
Teleological	Exploration of meaning and purpose
Epistemological	Nature and beliefs held regarding knowledge
Methodological	Systematic structure and nature of the research process

Source: Cresswell (2013)

The sociological dimension of the research develops theory by observing the community, social interactions, and groups. Social sciences research can be described as a collaborative human activity that highlights the social nature of the study within the particular domain. Sociological research can be described as experimental, exact and analytical, because the nature of the research relates to the scientific study of concepts through quantitative analysis. From an ontological dimension perspective, the research is concerned with the nature of existence and the fundamentals that influence reality (Neumann, 2011). The study of people influenced the nature of this study in terms of its characteristics and activities (Mouton & Marais, 1996). Mouton and Marais (1996) refer to the teleological dimension as the immediate goals of the research project, which are based on the research problem that needed to be addressed. The epistemological dimension describes the epistemological dimension of social sciences research as a focus on achieving truth in the most valid manner possible (Neumann, 2011). Truth within the context of social sciences research will be viewed as the way in which the research results will be relatable to reality and may be seen as believable. The methodological dimension is the decision-making process that is applied to explore the research phenomena according to scientific methods (Mouton & Marais, 1996).

The social sciences research model focuses on three subsystems of meaning: the intellectual climate of the research, the market of intellectual resources, and the research

process (Mouton & Marais, 1996). This research falls in the field of Industrial and Organisational Psychology, with a specific focus on the organisational domain.

1.6 PARADIGM PERSPECTIVES OF THE RESEARCH

A research paradigm relates to the ontological dimension of the research model and can be described as a set of fundamental assumptions pertaining to how the world is perceived (Jonker & Pennink, 2010). According to Wahuyuni (2012), a research paradigm aims at addressing the philosophical dimension of social sciences research. The research paradigms for the proposed study are discussed below in terms of the intellectual climate and the market of intellectual resources, as defined by Mouton and Marais (1996).

1.6.1 The intellectual climate

In this study, the relevant constructs relate to psychological work immersion, as described by people effectiveness enablers and psychological attachment. The literature study phase of the research was conducted within an open systems paradigm and a cognitive-behaviouristic paradigm, while the empirical study phase was conducted from a post-positivist perspective.

1.6.1.1 Literature review

In terms of an open systems paradigm, organisations are living systems with interrelated components that need to be viewed in a holistic manner (Henry, 2013). In relation to the open systems paradigm, Wheatley (2006) states that the whole is greater than the sum of the parts, and that an open systems paradigm allows the researcher to understand the organisation within the specific context and environment of operation in order to better derive meaning from the phenomena observed. This approach allows the researcher to avoid reductionism and simplify complex issues in such a way that they no longer have any meaning within the specific context (Mckenzie, Powell, & Usher, 2005). The research made use of an open systems paradigm to analyse the organisation within the context of the operating environment and the factors that will influence the effectiveness criteria relevant to the organisation in this study.

As a secondary paradigm, the cognitive-behaviouristic paradigm is based on scientific principles of behaviour, such as classical and operant conditioning, as conceptualised by Skinner (1953), as well as in the work of Bandura (2001) on the explanation of human behaviour as the reciprocal interaction between environmental, cognitive and behavioural influences. The cognitive-behaviouristic paradigm focuses on observational learning as the process of shaping behaviour through reinforcement and the extinction of behaviours (Sharf,

2012). Behaviour is influenced by schedules of reinforcement, both intermittent and continuous. The paradigm holds that knowledge is gained through observation and in relation to external stimuli in the environment. The research made use of a cognitive-behaviouristic paradigm for the analysis of the PWIS (Veldsman, 2013) in relation to the experienced levels of work immersion in the organisation in this study.

1.6.1.2 *Empirical research*

The empirical research was conducted within a post-positivist research paradigm. Post-positivism challenges the belief of absolute truth, and even though the belief is centred on generalisable knowledge, the paradigm holds that knowledge can only be ascertained through social conditioning (Wahayuni, 2012). This belief is centred on the notion that truth can only be found in the discovery of observable and non-observable structures through the exploration of events, both within a defined context and time, as well as from a perceived reality standpoint (Nel, 2015). This belief is based on a critical realist stance that implies that post-positivism can only be understood within a specific context. Knowledge within the context of post-positivist research is based on careful observations and measurement to either support or contradict a theory of understanding (Cresswell, 2013). Post-positivism is based on the following assumptions (Nel, 2015):

- Absolute truth can never be found and, as such, knowledge can only be acquired through the observation of, and reflection on, actual events.
- Knowledge is acquired through research claims that are either accepted or rejected based on observation, learning and factual claims.
- Data and rationality shape knowledge.
- Research develops true claims, and describes causal relationships that are either rejected or refined through study.
- Objectivity guides the foundation of any research process.

The current study investigated the relationship between the variables underpinning organisational effectiveness, namely, people effectiveness enablers and psychological attachment (psychological work immersion); and business indicators, namely, profit/loss, costs, and cash flow related to operating activities as a method for rejecting or accepting new forms of knowledge as described by the post-positivistic paradigm.

1.6.2 The market of intellectual resources

Mouton and Marais (1996) describe the market of intellectual resources as the collection of beliefs that has a direct influence on the epistemic status of scientific statements. The intellectual resources environment can be defined as the theoretical beliefs about the nature

of phenomena, and the methodological beliefs about the research process. The study was contextualised in terms of the market of intellectual resources with reference to the theoretical models, meta-theoretical statements, conceptual descriptions, as well as the other central hypothesis and methodological assumptions discussed in the following sections.

1.6.2.1 *Meta-theoretical statements*

Metatheory refers to the underlying theoretical assumptions, models and paradigms that form the definitive context of a specific study (Mouton & Marais, 1996). The context of the proposed study was underpinned by the discipline of industrial and organisational psychology, which can be defined as the scientific study of human behaviour within the context of the organisation (Milner, 2015).

The study examined the test-retest validity of the PWIS (Veldsman, 2013) as both a measure of people effectiveness and as a contributor to organisational effectiveness, as well as its usefulness in predicting business performance over time.

1.6.2.2 *Conceptual descriptions*

The conceptual descriptions that form the basis of the study are discussed as follows.

Organisational effectiveness. Organisational effectiveness refers to the ability of the organisation to utilise available resources effectively to achieve set goals (Finn, 2013). Organisational effectiveness is a multi-layered construct that refers to the ability to gear and structure all activities in the attempt to achieve organisational goals (Shiri, 2012). The optimisation of resources in order to deliver effectively amidst market turbulence has led to an environment that is constantly evaluating how to optimise the limited available resources in order to do so. In the context of the present study, a set of business performance indicators was used as criteria for organisational effectiveness.

Business performance indicators. Regarding business performance measurement, the research followed the approach conceptualised by Kaplan and Norton (2001) that organisations define their own business measurements relevant to their context and what they consider success. For the purpose of the study, profit/loss, costs and cash flow related to operating activities have been identified as the relevant indicators of business performance for the organisation to be studied. The table below describes each of these indicators:

Table 1.2.

Business Indicators

Business indicator	Definition
Profit/loss from operating activities	Profit or loss from commercial activities for a stipulated period
Operating costs	Expenses incurred due to the cost of running the business, excluding depreciation
Cash flow from operating activities	The amount of cash generated from operating income, i.e. earnings minus operating expenses and net income adjustments

Source: Anthony and Breitner (2002)

Further analysis related to the identified business indicators included the analysis of the following financial health ratio's as indicators of financial performance.

Table 1.3.

Financial Health Ratios

Financial health indicators	Definition
Gross profit margin	The ability of the organisation to cover its costs through earned revenue and is utilised as an indicator of organisational growth.
Defensive interval ratio	Estimate of the time period that the organisation will be able to meet its financial commitments from cash reserves

Source: Investopedia (2016)

Employees' perceptions of the business performance enablers were also explored to further understand if employee perception of individual contribution to organisational success is related to changes in business indicators over time. This was deemed important based upon the work of Alfes, Truss, Soane, Rees, and Gatenby (2013) which indicates a strong relationship between organisational performance and the perception of employees related to their contribution to organisational performance and success.

Psychological work immersion. Psychological work immersion refers to a pervasive state of profound emotional, cognitive and physical identification with the work environment within a particular socio-cultural context (Veldsman, 2013). Psychological work immersion is closely related to the concepts of work engagement and flow, and was used as a measure of people effectiveness in this study as it describes both the enablers of people effectiveness (manager effectiveness, strategic connection, individual congruence, team effectiveness, enabling environment, appreciative feedback) and psychological attachment (commitment, absorption, intrinsic motivation) as consequences of the enablers that have been shown in the literature to influence perceptions of business performance.

1.6.2.3 *Central hypothesis*

The central hypothesis of the research was formulated as follows: The PWIS (Veldsman, 2013) is a valid and reliable measure for predicting perception of business performance within time and across time. The hypothesis also assumed that psychological work immersion, namely, people performance/effectiveness enablers and psychological attachment, as independent variables, have a significant relationship with perception of business performance as measured by profit/loss, costs, and cash flow relating to operating indicators.

1.6.2.4 *Theoretical assumptions*

Based on the reviewed literature, the following theoretical assumptions are addressed in this research:

- there is a need for a working definition of organisational effectiveness and the factors that constitute organisational effectiveness in relation to people effectiveness; and
- there is a need for a definition and conceptualisation of a measurement of psychological work immersion as an indicator of people effectiveness that can be explored to evaluate its relationship with business performance.

From a sociological dimension perspective, the proposed research was non-experimental in nature in that it explores concepts and variables related to the experienced levels of psychological work immersion and the relationship with business performance, as described in Chapter 5 (Empirical Research) and Chapter 6 (Research Results). Ontologically, the research measured the predictive validity of the PWIS and the relationship of specific business performance indicators as a method for understanding how psychological work immersion manifests in knowledge economy organisations. In the research study, the goal was to explore the validity of the PWIS (Veldsman, 2013) in predicting business performance. From a practical perspective, the research aimed at adding to the field of Industrial and Organisational Psychology by contributing to knowledge on how people effectiveness can increase organisational effectiveness and subsequently improve their business performance. This approach describes the teleological dimension of the research. The research focused on achieving the epistemological objectives of the goal through a good research design and reliable results. Methodologically, quantitative (exploratory) research was conducted in the form of a literature review related to the concept of psychological work immersion and its relationship with business performance. The empirical study phase made use of both descriptive and explanatory research methods in a longitudinal quantitative research design.

1.7 THE RESEARCH DESIGN

A research design can be described as the structure for investigating the articulated research questions (Brink, 2006). It is influenced by the decisions made about the relevant paradigm for the research. Furthermore, the research design ensures the validity and reliability of the study in accordance with the research principles of objectivity and accuracy, and the economic viability of the study (Kerlinger & Lee, 2000). The research design for this study is discussed with specific reference to the type of research, and the validity and reliability criteria mentioned below.

1.7.1 Exploratory research

Neumann (2011) states that the goal of exploratory research is to define preliminary ideas pertaining to specific phenomena, which enables the researcher to move towards more specific questions that can be refined through future research. Rubin and Babbie (2014) describe exploratory research as capable of yielding new insights into explored phenomena, providing the researcher with a frame of reference to better understand the area of research. The proposed research explores psychological work immersion through people effectiveness enablers (manager effectiveness, individual congruence, strategic connection, appreciative feedback, enabling environment, and intra-team effectiveness) and psychological attachment (commitment, absorption, and employee motivation), in order to determine the levels of people effectiveness as a contributor to organisational effectiveness (as measured by business performance indicators). The study was therefore exploratory in nature.

1.7.2 Descriptive research

Descriptive research aims to describe phenomena in terms of specific key variables that constitute concepts (Gravetter & Forzano, 2011). Neumann (2011) states that descriptive research aims to provide a clear picture of a defined issue, based on a social setting, a situation or a relationship. The literature study phase of the research can be described as descriptive in terms of the conceptualisation of the constructs related to psychological work immersion, that is, people effectiveness enablers (manager effectiveness, individual congruence, strategic connection, appreciative feedback, an enabling environment and intra-team effectiveness) and psychological attachment (commitment, absorption, and employee motivation), and their relationship with organisational effectiveness (as measured by business performance indicators). The descriptive element of the empirical study is related to frequencies (biographical profile of the sample), means and standard deviations, as well as the internal consistency reliability of the PWIS (Veldsman, 2013).



1.7.3 Explanatory research

Explanatory research focuses on providing an explanation of the key relationships between phenomena and concepts, based on previous research or social theory (Neumann, 2011). As part of the empirical study, the research aimed to explain the nature, magnitude and direction of relationships between defined variables. Accordingly, the research conceptualised a nomological net to assess the predictive validity of the PWIS (Veldsman, 2013) in terms of business performance through the use of a longitudinal research design. A nomological net describes concepts in terms of both the theoretical framework and the empirical framework, and also describes the relationships between the constructs as a method for establishing construct validity (Cronbach & Meehl, 1955; Liu, Li, & Zhu, 2012). The outcome of psychological work immersion (people effectiveness enablers and psychological attachment) as an independent variable is explained in terms of the relationship with perception of business performance indicators (profit/loss, costs, and cash flow related to operating activities) through the use of a test–retest method over a period of 14 months at two specific points in time labelled as T1 (time 1) and T2 (time 2).

The relationship between the people effectiveness enablers (manager effectiveness, individual congruence, strategic connection, appreciative feedback, enabling environment, intra-team effectiveness) as independent variables, and psychological attachment (commitment, absorption, and employee motivation) as a dependent variable, is explained in terms of the magnitude, direction and nature of the relationship. The magnitude of the mediating effect of psychological attachment in the link between the people effectiveness enablers (independent variables) and perception of business performance (as dependent variable) was also assessed in figure 1.3. below.

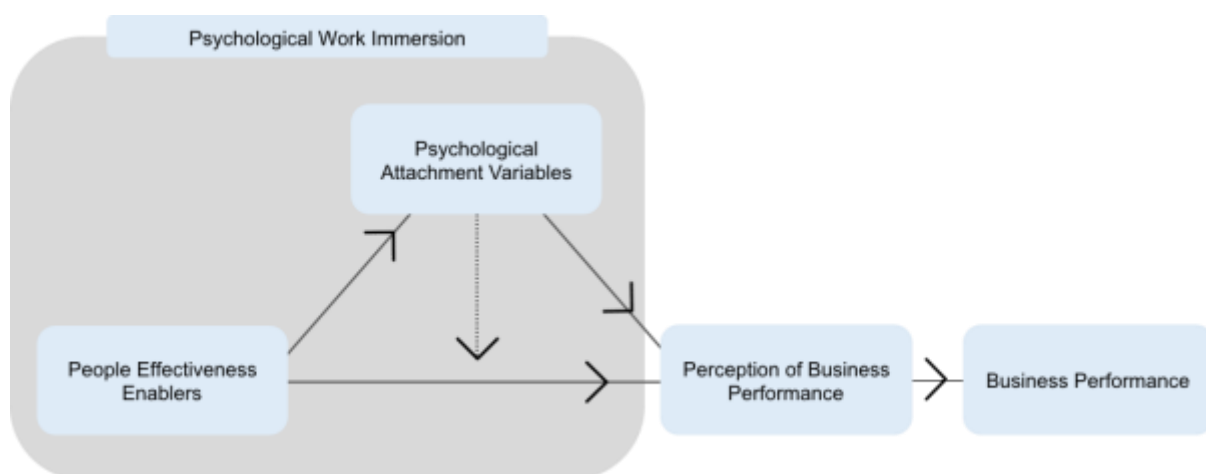


Figure 1.3. People effectiveness enablers and psychological attachment as moderating variables on business performance

Figure 1.3 summarises the relationship between the people effectiveness enablers, psychological attachment variables and business performance.

1.7.4 Validity

Validity refers to the concept of truthfulness (Neumann, 2011) and is the degree to which the measurement variable measures the construct under investigation. Punch (2014) defines internal validity as the extent to which the relationship between internal constructs has been correctly interpreted, whereas external validity is the generalisability of the findings to other populations and settings beyond the scope of the current research (Rubin & Babbie, 2014). Neumann (2011) also describes the fit between operational and conceptual definitions as a measurement of validity. Gravetter and Forzano (2011) state that validity can be described in terms of various types of validity; for the purpose of this study construct validity, discriminant, convergent and predictive criterion validity were considered. The research built a nomological net that described the relationships between the constructs related to people effectiveness, as measured by the PWIS (Veldsman, 2013), and business performance (profit/loss, costs, and cash flow related to operating activities).

1.7.4.1 Validity with regard to the literature

The validity of the literature as it pertains to the research was assured through the inclusion of up-to-date and relevant literature sources related to the research aim, problem, questions, and methods. Classic and contemporary mainstream publications were also included to demonstrate the relevance of the research to the world of work, as well as in conceptualising the research variables.

1.7.4.2 Validity with regard to the empirical study

The validity of the empirical study was assured by considering both internal and external validity (Rubin & Babbie, 2014). Punch (2014) states that internal validity refers to causality, and allows the researcher to derive valid findings pertaining to a specific subject. To ensure internal validity, the empirical study made use of the statistical measurements described by Veldsman (2013) which are applicable to the PWIS as a valid measure of psychological work immersion. The PWIS (Veldsman, 2013) was examined in terms of construct, discriminant, convergent and predictive/criterion validity by constructing a nomological net. The questionnaires administered in the study included standard instructions to all participants, and statistical procedures controlled for socio-demographic variables such as race, age, tenure, and gender.

With regard to external validity, Rubin and Babbie (2014) refer to the generalisability of the research beyond the present study. In the present study, external validity was improved by

targeting the entire population of employees in the target organisation. Generalisability was improved by including representation by all socio-demographical groups in terms of race, age, gender and tenure. This approach is in line with the suggestions of Neumann (2011).

1.7.5 Reliability

Gravetter and Forzano (2011) describe the reliability of a measurement in terms of its stability, consistency and dependability. In the literature phase of the study, reliability was addressed by collecting information that is correct, comprehensive and unbiased (Fink, 2010). This information was cross-correlated with various research studies in order to ascertain its truthfulness. The empirical phase of the study also made use of internal consistency measures to assess the reliability of the PWIS (Veldsman, 2013). Wagner, Kawulich, and Garner (2012) define internal consistency as the degree to which all the items measure the same underlying construct.

The Cronbach's alpha and composite reliability coefficient (internal consistency reliability) were used to demonstrate the average correlation among the items in order to reflect a consistent measurement of the variables (Punch, 2014). Cronbach's alpha values range from 0 to 1, with higher values indicating greater reliability (Pallant, 2007). For the purpose of the current study, the Cronbach's alpha coefficient of the PWIS (Veldsman, 2013) was above .80, as deemed acceptable by Sarstedt and Mooi (2014), and was thus used as an indicator of internal consistency reliability. Composite reliability measures were also used as an alternative to the Cronbach's alpha coefficient to evaluate the extent to which items measure the underlying components of the construct with an acceptable score of .70 to .80, as indicated by Hair, Black, Babin, Anderson, and Tatham (2006).

1.7.6 The unit of research

Social sciences research uses the individual as the unit of research. Rubin and Babbie (2014) define the unit of analysis as the distinguishing factor between individual and group characteristics, organisations, social artefacts, and social actions. In the research, the constructs under investigation were the psychological work immersion variables, described as people effectiveness enablers (manager effectiveness, individual congruence, strategic connection, appreciative feedback, enabling environment, intra-team effectiveness), and psychological attachment (commitment, absorption, and employee motivation). Individual scores in terms of the PWIS (Veldsman, 2013) measurement (individual level), overall scores at a group level, and socio-demographic characteristics (age, gender, race and organisational tenure) at a sub-group level were also taken into account. The purpose was to assess psychological work immersion (described in terms of people effectiveness

enablers: manager effectiveness, individual congruence, strategic connection, appreciative feedback, enabling environment, intra-team effectiveness and psychological attachment: commitment, absorption and employee motivation) as a predictor of perception of business performance indicators (profit/loss, costs, and cash flow related to operating activities) over a defined period of 14 months.

1.7.7 The variables

The purpose of the research was to explore the relationship between psychological work immersion and perception of business performance. Firstly, the research assessed the relationship between people effectiveness enablers (manager effectiveness, individual congruence, strategic connection, appreciative feedback, enabling environment, intra-team effectiveness) as the independent variable and psychological attachment (commitment, absorption, and employee motivation) as the dependent variables. Secondly, the research explored the relationship between psychological work immersion (people effectiveness enablers and psychological attachment) as the independent variable and perception of business performance (profit/loss, operating costs, and cash flow related to operating activities) as the dependent variable at two specified points in time (T1 and T2) over a period of 14 months. Thirdly, the research focused on understanding the effect of people effectiveness enablers (manager effectiveness, individual congruence, strategic connection, appreciative feedback, enabling environment, intra-team effectiveness) on perception of business performance (profit/loss, costs, and cash flow related operating activities), with psychological attachment (commitment, absorption and employee motivation) as a mediating variable. Mediation refers to the extent to which a causal variable mediates the relationship between an independent and dependent variable (Kenny, 2015). Mediation can either be partial or complete which refers to the extent and magnitude of the influence of the mediating variable on the relationship between the independent and dependent variables (Rubin & Babbie, 2014). Figure 1.4 below depicts the way psychological attachment (commitment, absorption and employee motivation) was studied as the mediating variable of the relationship between people effectiveness enablers (manager effectiveness, individual congruence, strategic connection, appreciative feedback, enabling environment, intra-team effectiveness) and perception of business performance (profit/loss, costs, and cash flow related operating activities) at both T1 and T2.

1.7.8 Delimitations

The present research was limited to exploring the relationship between people effectiveness enablers, psychological attachment, psychological work immersion and business performance indicators. No attempt was made to classify or manipulate the data on the

basis of family or spiritual background, and no participants were excluded on the basis of their socio-demographics characteristics (age, gender, race and organisational tenure). The research was intended to be original in nature and, as such, focused on its core purpose and aim – exploring the relationship between psychological work immersion and business performance indicators.

From a longitudinal research point of view a number of limitations exist that are relevant to this study. Stidham, Olsen, Toman, Frederick, McCaffrey, and Shindler (2014) state that longitudinal research may be costly to implement, participants may drop out over time and the familiarity with the instrument used to measure may have an impact on the comparability of the results over the defined measurement period.

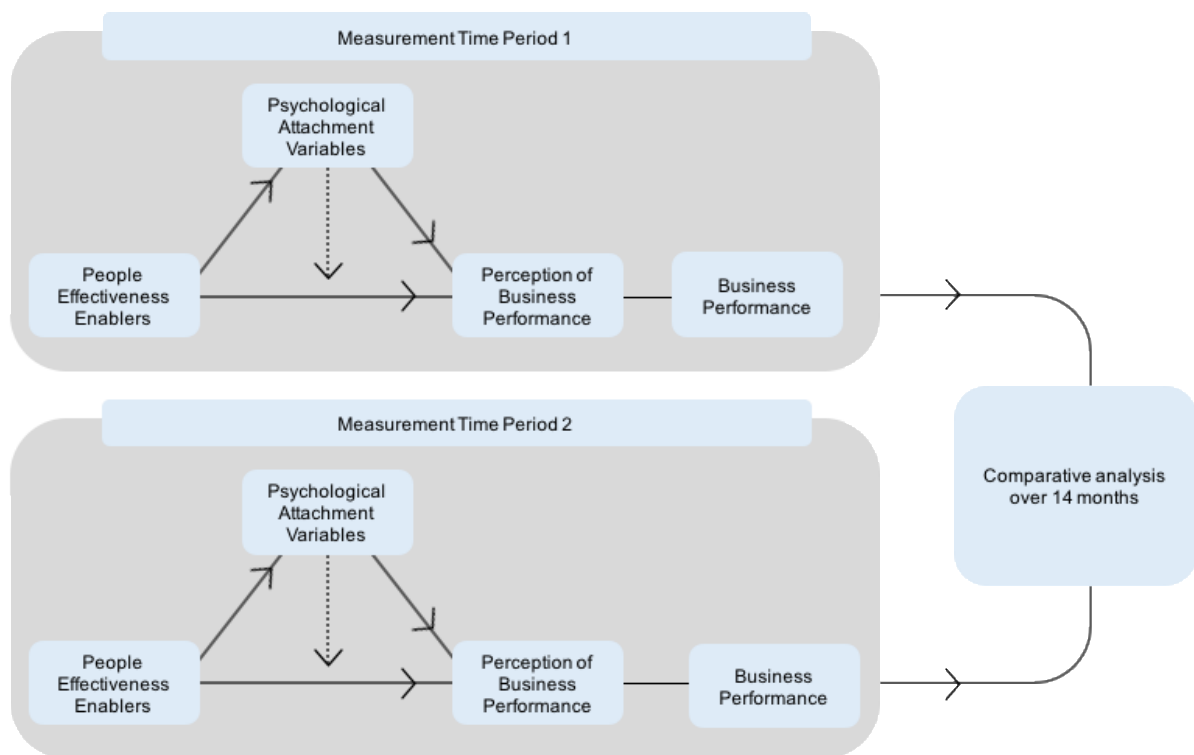


Figure 1.4. Comparison of measures over time

1.8 RESEARCH METHOD

The research was conducted in two phases: a literature review and an empirical measurement. Each of the phases is discussed below.

1.8.1 Phase 1: Literature review

Figure 1.5 describes the steps applicable to the literature review phase.

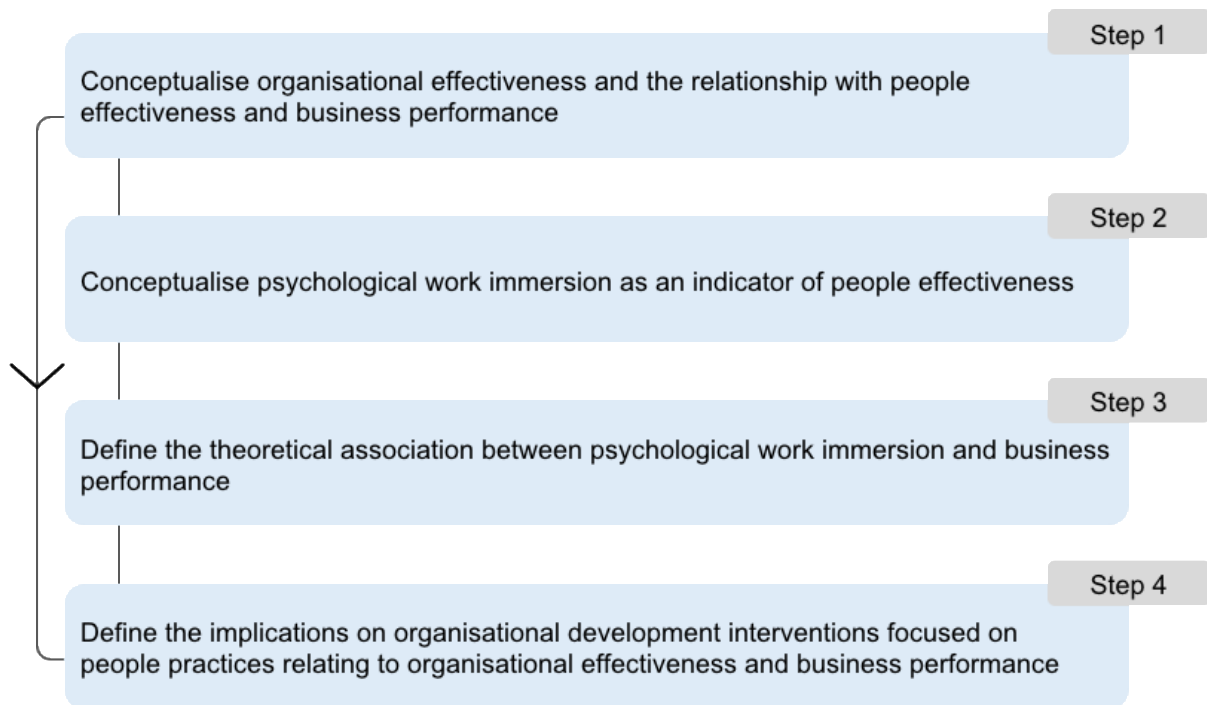


Figure 1.5. Literature review steps

1.8.1.1 *Step 1: Conceptualise organisational effectiveness and its relationship with people effectiveness and business performance*

This phase conceptualised organisational effectiveness and described people effectiveness as a key contributor to organisational effectiveness. Business performance was conceptualised as an indicator of organisational effectiveness and its relevance to people effectiveness was positioned.

1.8.1.2 *Step 2: Conceptualise psychological work immersion as an indicator of people effectiveness*

This phase focused on positioning psychological work immersion as a measurement of people effectiveness and an indicator of the levels of people effectiveness present within the organisation. This phase explored psychological work immersion in terms of people effectiveness enablers (manager effectiveness, individual congruence, strategic connection, appreciative feedback, enabling environment, and intra-team effectiveness) and psychological attachment (commitment, absorption, and employee motivation) as key contributors to measuring people effectiveness.

1.8.1.3 *Step 3: Define the theoretical association between psychological work immersion and business performance*

This phase explored the relationship between psychological work immersion as an indicator of people effectiveness and its influence on business performance. Business performance was discussed in line with people effectiveness, as described through psychological work immersion as a key influencer of current and future business performance.

1.8.1.4 *Step 4: Define the implications on organisational development interventions focused on people practices relating to organisational effectiveness and business performance*

This phase focused on defining the implications for people practices that relate to people effectiveness within the organisation and the resulting influence on the contribution to the overall effectiveness of the organisation. People practices were discussed in line with the dimensions applicable to psychological work immersion as a key contributor to people effectiveness.

1.8.2 Phase 2: The empirical study

This study used secondary data obtained from an organisational development consulting organisation collected as part of their work at a non-profit services organisation in South Africa. The present study (empirical study) entailed the steps described by Figure 1.6.

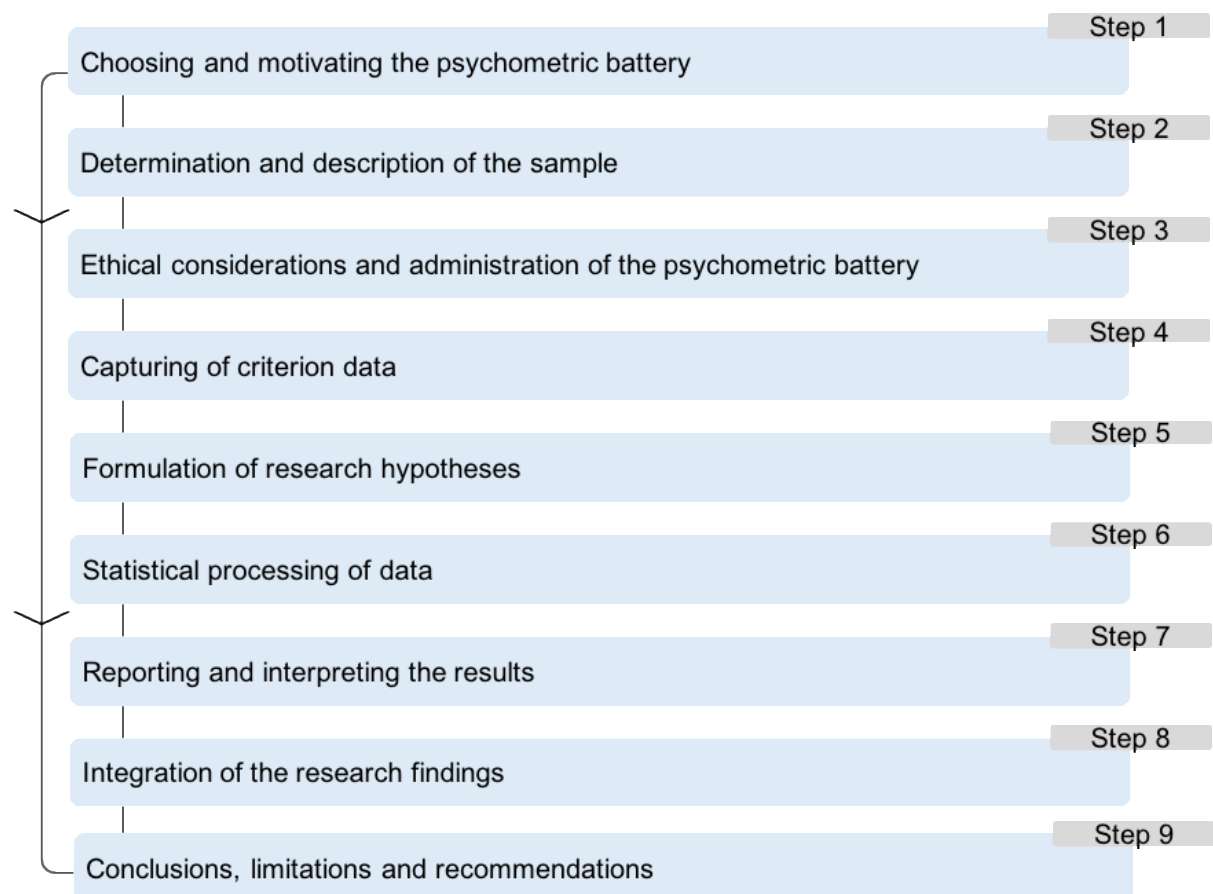


Figure 1.6. Empirical study steps

1.8.2.1 *Step 1: Choosing and motivating the psychometric battery*

The psychometric properties of the Psychological Work Immersion Scale (PWIS) (Veldsman, 2013) in terms of its validity as a measurement model (construct, discriminant and convergent validity) (time 1 versus time 2: within-subject analysis and between time 1 and 2

– within-subject comparisons) were utilised as a measure of people effectiveness in this study. Key considerations in terms of respondents' demographical characteristics (race, age, gender, age and tenure) were made to obtain meaningful insight into the data. The socio-demographical characteristics as well as the detailed constructs and items associated with the PWIS (Veldsman, 2013) are discussed in Chapter 4.

1.8.2.2 *Step 2: Description of the sample*

The present study used secondary data obtained from an organisational development consultancy collected as part of their work at a specific non-profit services organisation within South Africa in order to explore the test-retest validity of the PWIS and the relationship to business performance. The population comprised of a specifically targeted organisation consisting of employees of different races, genders and ages, with varying tenures and qualifications. The sampling technique was thus non-probability purposive sampling. The targeted organisation is a non-profit services organisation in South Africa that provides developmental services with a focus on social, economic and health development initiatives and developmental services for community centres across South Africa. The organisation's aim is to provide young learners from previously disadvantaged areas with support in the form of educational, health and social services to drive a cradle-to-career approach to human development. The organisation consists of N = 580 people who work in various community centres in South Africa, with the bulk of its workforce being situated in Gauteng and the Western Cape.

1.8.2.3 *Step 3: Ethical considerations and administration of the psychometric battery*

Ethics can be described as the concern with what is good and right in terms of human interaction, and is focused on the good, the self, and the other (Goosen & Van Vuuren, 2005). De Vos, Delpont, Fouche, and Strydom (2011) also refer to ethics within the research domain and regard it as the adherence to professional, legal, and social obligations. The study focused on the following basic principles in order to adhere to the ethical requirements described by Neumann (2011):

- the use of recognised and scientifically proven research methods that were deemed appropriate to the topic of investigation
- the avoidance of any physical harm, psychological abuse, and legal jeopardy of involved parties
- the use of a structured research approach that honours privacy agreements, obtains informed consent, and ensures the anonymity of all research participants.

The researcher also followed the guidelines laid down by the University of South Africa (UNISA) regarding ethical requirements related to social sciences research. For the purpose of this study, the researcher obtained ethical clearance from the relevant research institution (UNISA) in order to conduct research through the use of secondary data. Permission to use the data in this research study was also obtained from the relevant organisation that currently owns the data.

1.8.2.4 Step 4: Capturing of criterion data

The primary data contained employee responses that were captured on a Microsoft Excel spreadsheet with each row representing a participant and the columns their responses to a research item. The file was provided to the researcher in a password protected format and the password shared separately from the original document. Data was imported and analysed using statistical methods, specifically the SPSS (Statistical Package for Social Sciences) Version 23 for the Microsoft Windows platform, SAS version 9.4 (Cary, 2013).

1.8.2.5 Step 5: Formulation of research hypotheses

The following research hypotheses have been formulated in order to achieve the objectives of the study:

Table 1.4.

Research Aim and Hypotheses

Research aims	Research hypothesis
Research aim 1: To empirically assess the psychometric properties of the Psychological Work Immersion Scale (PWIS) in terms of its validity as a measurement model (construct, discriminate and convergent validity) (time 1 versus time 2: within-subject analysis).	Ha1: The PWIS factor structure is a valid measure of the psychological work immersion construct across time (T1 and T2)
Research aim 2: To empirically assess the test-retest reliability of the PWIS across time (time period of 14 months).	Ha2: The PWIS has acceptable internal consistency reliability across time (T1 and T2) Ha3: The PWIS demonstrates test-retest reliability across time
Research aim 3: To empirically assess the predictive (criterion) validity of the PWIS in terms of perceptions of key business performance indicators (profit/loss, costs, and cash flow related to operating activities) across time (time 1 versus time 2: within-subject analysis,	Ha4: The people effectiveness enablers and psychological attachment variables significantly predict perceptions of business performance indicators (profit/loss, costs, and cash flow related to operating activities) Ha5: Strong perceptions of people effectiveness enablers relates to strong individual perceptions of business performance through a high sense of psychological attachment
Research aim 4: To assess longitudinal links between psychological work immersion and business performance indicators (14-month time interval)	Ha6: The link between psychological work immersion and business performance increase over time with significant increase in business performance

1.8.2.6 Step 6: Statistical processing of data

The statistical process comprised three major stages, each consisting of various steps of statistical analysis, as depicted below.

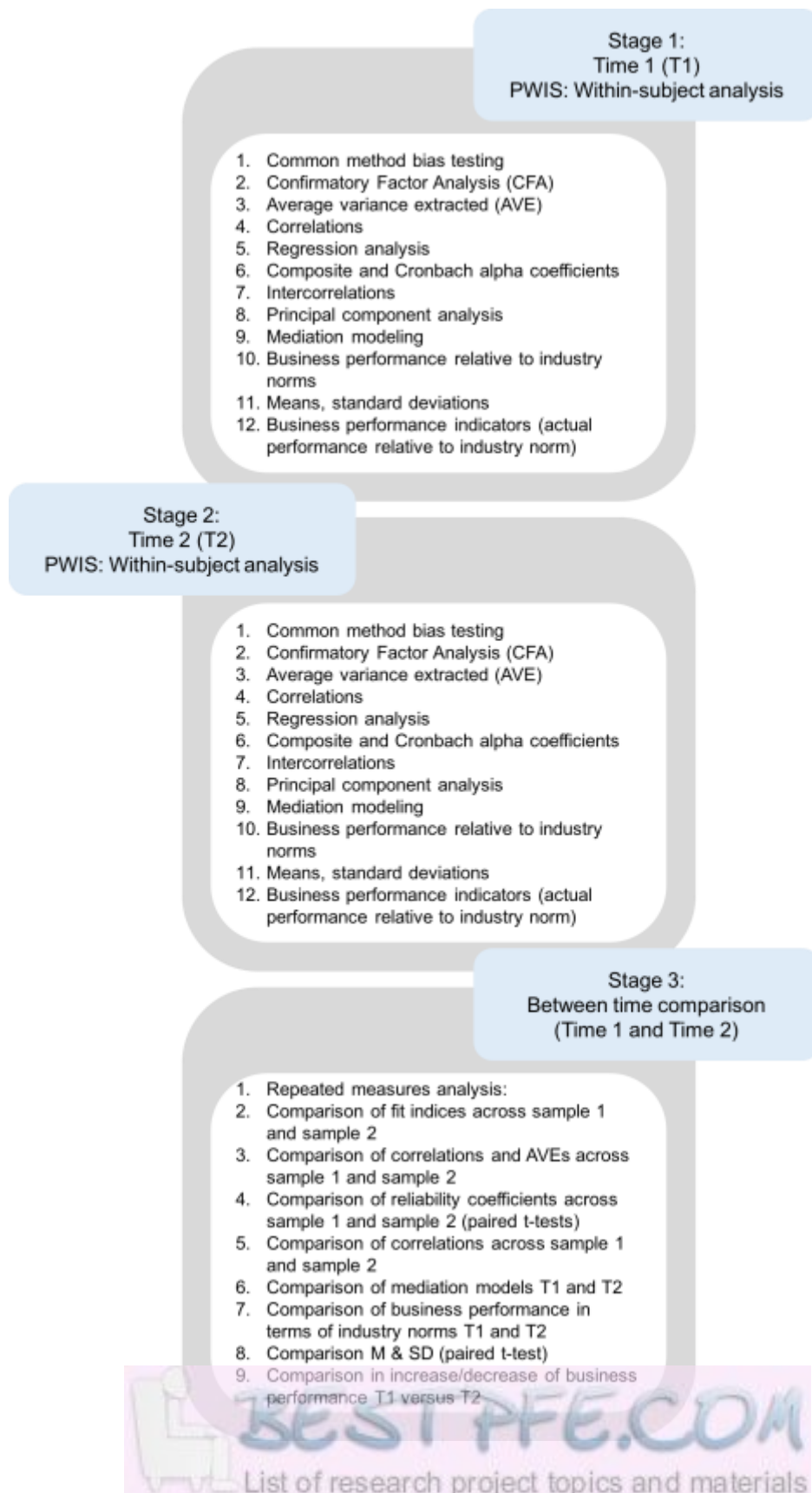


Figure 1.7. Steps of statistical analysis.

The detailed steps associated with the statistical processing of the data are depicted in Figure 1.7 and discussed in Chapter 4 of the study.

1.9 CHAPTER DIVISION

The chapters are presented according to the following framework:

Table 1.5.

Chapter Division

Chapter	Definition
1	Scientific overview of the research
2	Meta-theoretical context of the study: organisational effectiveness and business performance within the knowledge economy
3	The Psychological Work Immersion Scale as predictor of business performance
4	Empirical research
5	Research results
6	Conclusions, limitations, and recommendations

Table 1.5. describes the division of chapters as it relates to the present research.

1.10 CHAPTER SUMMARY

This chapter discussed the scientific orientation of the research by referring to the background to and motivation for the research, the research aim, the research model and paradigm perspectives, the theoretical research, design and methodology, as well as the central hypothesis and research method. The aim of the research was to assess the predictive validity of the PWIS (Veldsman, 2013) as a measurement of people effectiveness and its relationship with business performance in knowledge economy organisations.

The objective of the research, on the other hand, was to enable industrial psychologists and people practitioners to demonstrate the impact on business of implemented people effectiveness interventions, as well as to provide a framework for predictive insight into the application of the PWIS (Veldsman, 2013) as a predictor of perception of business performance.

Chapter 2 will discuss the literature research aims applicable to the study by exploring the first research aim in terms of the conceptualisation of organisational effectiveness and its relationship to people effectiveness and business performance.

CHAPTER 2: METATHEORETICAL CONTEXT OF THE STUDY – ORGANISATIONAL EFFECTIVENESS AND BUSINESS PERFORMANCE IN THE KNOWLEDGE ECONOMY

This chapter provides an overview of organisational effectiveness within the context of the knowledge economy and positions the concept with regard to its relationship to people effectiveness and business performance. The first research aim applicable to the literature study within the context of this research is also addressed by exploring the definition and evolution of the concept, presenting a brief overview of organisational effectiveness models and exploring the relationship between organisational effectiveness and business performance. This chapter also explores people effectiveness as a critical component of organisational effectiveness and reviews the factors that will influence the effectiveness of knowledge economy organisations. The chapter concludes with an overview of the implications for organisational development practices in terms of enabling organisational effectiveness and reflects on the role of the industrial psychologist in enabling effective organisations in the knowledge economy.

2.1 CONTEXTUALISING THE KNOWLEDGE ECONOMY

The knowledge economy can be characterised as a period of turbulence, instability and constant change (Asongu, 2015). The current global economic environment is challenging organisations to become nimble and agile and to evolve into a consumer-led market that is demanding more for less (Piercy, 2016). The era of technological development is increasingly changing the way in which human beings communicate, work and relate to the world around them (Tchamyou, 2015). Globalisation, a continuous drive for innovation and an increasingly competitive environment have set the tone for the new organisational landscape (Chandra & Yokoyama, 2011). Survival has called for organisations to redefine the traditional norms associated with the past if they are to remain relevant and sustainable in the future. Silke (2011) identifies the following trends that will redefine the way in which human beings relate to the world of work and lead to the creation of a new world order in the work environment:

- A population that will reach a record high of 9.1 billion people by the year 2050, with a workforce of 3.6 billion people between the ages of 25 and 59 being situated in developing economies
- Resource scarcity that will create an ever-increasing competitive environment over resources such as oil, water and agricultural products

- Africa as the new emerging global economy dependent on the establishment of infrastructure and political stability
- A shift in power away from traditional role players to the enabling of social media bringing power back to individuals (e.g. events such as the Arab Spring)
- Urbanisation as the norm, with most of the world's population living in cities and an increase in demand for employment within urban environments
- A global war for talent characterised by virtual work environments, generational conflicts, social responsibility and a call for more sustainable organisations
- A new consumer who will demand interactive and collaborative markets where needs are created and personalised and instant gratification becomes the norm.

Information has become the new currency, with the creation and application of new knowledge becoming a critical resource for wealth creation and economic prosperity (Tchamyou, 2015). With the rise of big data and technological advances, the ability to convert data into information, information into knowledge and knowledge into wisdom has become the critical enabler of success that will guide decisions influencing the sustainability of the organisation in the future (Butcher & Freyens, 2011).

Based on the above context, it seems clear that the operating landscape applicable to the knowledge economy has become a turbulent and ever-changing environment that is driven by a knowledge-based approach to gaining competitive advantage. The changes in how and where human beings work have resulted in a definitive trend for organisations to re-evaluate the way they provide services and products to a consumer who will forever be searching for something new on the horizon. As such, the ability of the organisation to create, retain and leverage knowledge has become key to sustainable success going forward (Piercy, 2016).

2.1.1 The concept of knowledge

Knowledge can be defined as the ability to acquire, apply and build on information on a regular basis (Suh & Chen, 2007). Knowledge can be classified into two categories as either explicit or tacit knowledge (Panahi, Watson, & Partridge, 2013). The original work of Nonaka (1994) defined explicit knowledge as formal knowledge that can be transferred via traditional forms of learning, whereas tacit knowledge resides within the experiences of individuals over time. Knowledge creation starts with the individual who converts tacit knowledge into explicit knowledge in order to enable the transfer of that knowledge to others. In the organisational context, this process refers to the ability of the organisation to convert the tacit knowledge that is encapsulated within their people into explicit knowledge that can be applied to the

working context as used as a method for driving competitive advantage. This process can be described as depicted in Figure 2.1 (Chennamaneni & Teng, 2011; Nonaka, 1994):

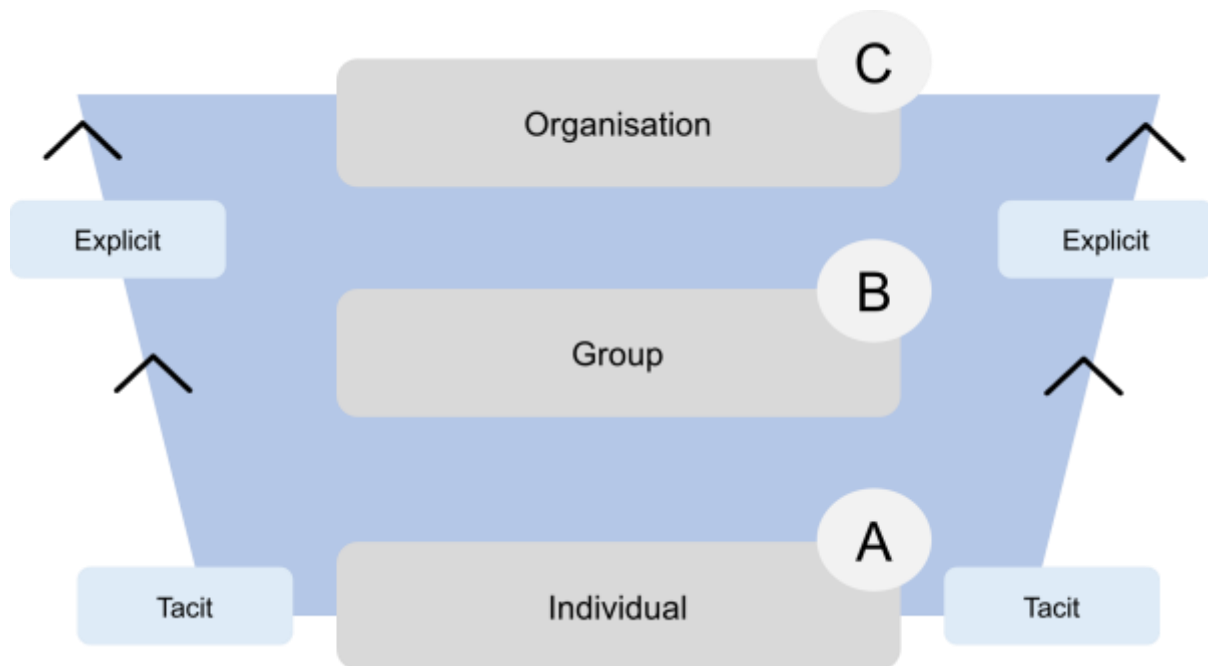


Figure 2.1. Enabling knowledge transfer between the individual and the organisation

As per Figure 2.1 above, level A focuses on socialisation which is the expansion of current knowledge at an individual level with limited creation of new knowledge. In order to move on to level B, articulation of knowledge needs to take place; this implies the sharing of previously inaccessible information and making it relevant to the group. At level B, the group combines and contributes to the knowledge, which enables that knowledge to become explicit and be shared among members of the group. To ascend to level C, this knowledge becomes formalised and becomes the new norm within the organisation and is no longer attached to just the experiences of individuals. The cycle will repeat itself with the explicit knowledge being internalised by individuals, making it tacit in nature as individuals make the knowledge applicable to themselves (Jansen, 2014).

From an organisational perspective, competitive advantage and survival have become dependent on the ability to transfer knowledge from the individual, characterised by action and feelings of autonomy, to the group, where knowledge is created through interaction, and ultimately to the organisation through structures and formal learning programmes (Oguz & Elif Sengün, 2011). Knowledge has become the driving force behind the economy with a culture of knowledge sharing and distribution becoming the norm. The sustainability of the organisation is dependent on the above process and the continuous creation, conversion

and embedding of new knowledge to remain abreast of changes in the marketplace and to remain relevant in this time of constant change (Tchamyou, 2015).

To summarise, organisational sustainability and success will be determined by the ability of the organisation to create, internalise and apply new knowledge in order to leverage competitive advantage. From an organisational perspective, the ability to convert tacit into explicit knowledge that is embedded in processes and systems has become crucial. The fact that the current workforce displays the trend of moving between organisations more regularly has resulted in a key focus on knowledge management and ensuring that knowledge is not just encapsulated in individuals but is transferred and shared within the organisation.

2.1.2 Knowledge as a cornerstone of the economy

Asongu (2015) defines a knowledge economy as an economy that uses knowledge as the principal engine for driving economic prosperity, where knowledge is created, acquired, disseminated and used effectively. The speed of knowledge creation has increased significantly, with Suh and Chen (2007) estimating that the ability to connect through vastly improved information technologies has led to an exponential increase in new knowledge development. The knowledge economy does not, however, focus solely on factors associated with technological development, even though developments in technology have been associated with the creation of new knowledge. The knowledge economy rather focuses on human capital as central to the development of new knowledge and positions human capital as the most important success factor behind advances in knowledge creation (Botha, Kourie, & Snyman, 2014). Pisano and Shih (2009) view human capital as the key ingredient in driving knowledge due to the need for highly analytical bases to stimulate and create new types of thinking. Fischer and Fröhlich (2013) describes the knowledge economy as an interrelated system that enables and drives knowledge creation and utilisation to create economic and social impact. Figure 2.2 depicts the way in which knowledge creation in different forms has an impact on economic and social factors in the knowledge economy.

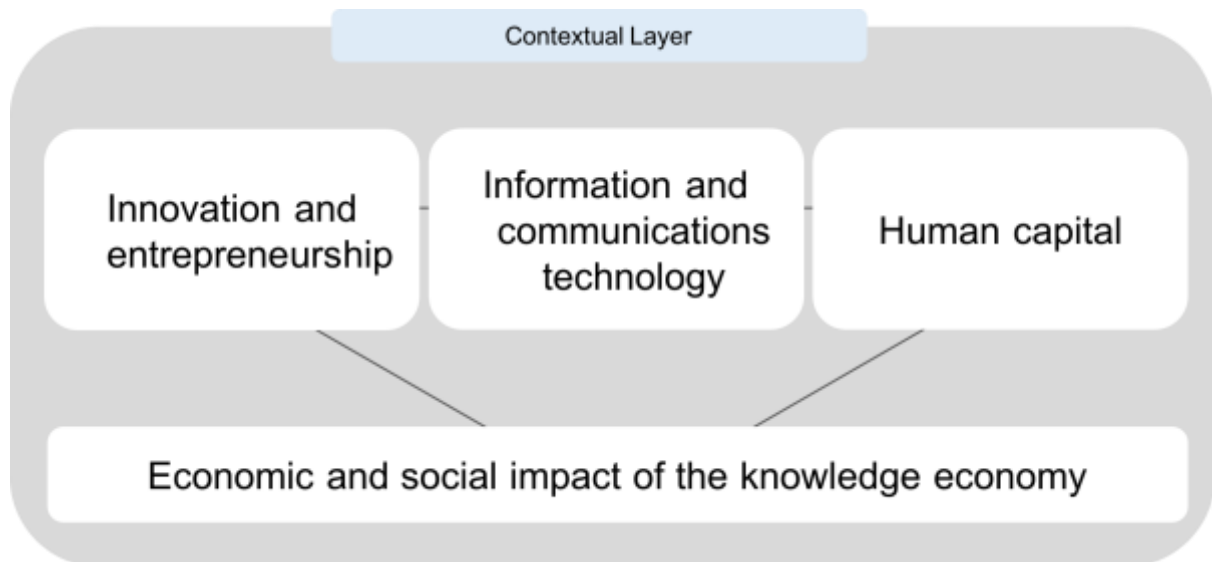


Figure 2.2. The knowledge economy

The contextual layer refers to the influence of the macro environment. This is related to environmental, social, legal and political factors that influence the context of where and how the organisation operates. Innovation and entrepreneurship in this environment will create a culture that drives the creation of new knowledge. Information and communications technology refers to the tools that create the capacity to convert information into new knowledge, while human capital refers to the skills and knowledge that are transferred to society to be used as part of economic activities. The economic and social layer refers to the application of knowledge in society to enable growth. This model articulates the impact of new knowledge in terms of both economic and social factors, as knowledge creation should not just reside in the profit-driven economic sectors but should also be applicable to the impact it has within the broader societal sphere (Dalkir, 2013).

In summary, it seems evident that human capital lies at the heart of knowledge creation and the ability of organisations to leverage human capital to gain competitive advantage in an economy characterised by new knowledge practices has become evident. Human capital needs to be leveraged in order to apply newly created knowledge in the form of skills and abilities. From an organisational perspective, this warrants a rejuvenated focus on how human capital is attracted, nurtured and utilised.


2.1.3 The new world order in the knowledge economy

From an organisational point of view, the knowledge economy has brought both opportunity and challenge in terms of being able to compete in an environment that is rapidly changing, more demanding than ever before and running the risk of becoming irrelevant if the organisation is not able to keep up with the pace (Silke, 2011). In 2015, only 12.2% of the

organisations mentioned on the *Fortune 500* list of organisations in 1955 were still in existence and are deemed relevant in the modern-day work environment (Chang, 2015). The new knowledge-based world order organisation has resulted in a new type of organisational landscape that requires a different perspective from its predecessors. Table 2.1 below provides an overview of the characteristics that are used to describe traditional organisations and how they have evolved into the knowledge-economy world order:

Table 2.1.

The Characteristics of the New Knowledge-based World Order Organisation

Traditional organisational perspectives		The new knowledge-based world order
Objectives, plans, and standards	 Shift towards:	Mission, vision, and philosophy
Local and physical		Global and virtual
Jobs, functions, and individuals		Roles, work domains, and teams
Procedures		Culture
Top-down decisions and relationships		Multidirectional relationships and decisions
Activities		Outcomes
Products		Markets/customers

Source: Veldsman (2011)

The new world order organisation calls for a different type of thinking about what or rather who the organisation is and will become. In the past, organisations were defined as individuals working together within a defined system of processes and structures in order to share a common goal (Watson, 2013). The challenge with this traditional definition is that organisations have become virtual, workforces have become a mix of independent, permanent and contract-driven agreements and hierarchy has become an increasingly irrelevant concept. A recent study found that virtual teams are now able to work around the clock through the ability to distribute work across multiple locations to capitalise on time differences between locations (Deloitte, 2015). This approach has enabled an always present, always functioning organisation that is ever engaging and always online. Organisational membership has also become temporary with on-demand services becoming the norm, and organisations such as freelancer.com, Etsy and e-lance are on the rise. The consumer has become the driver of economic demand and this has led to the formation of new organisational models that go beyond traditional design criteria and focus on flexible and adaptive practices built around the consumer. Consider the following organisations that

have come into existence based on the needs-based consumer-driven approach described above (Chang, 2015):

- Uber, the leading taxi service in the world owns no vehicles
- AirBnB, the leading accommodation organisation, owns no real estate
- Facebook, the world's most popular media company, creates no content
- Alibaba, the world's most valuable retailer, owns no inventory

A study by Heerwagen, Kampschroer, Kelly and Powell (2010) showcased the new organisational world of work and the way a variety of traditional criteria have become irrelevant when it comes to organisations in the new knowledge landscape. They describe the new world order in Table 2.2 as follows:

Table 2.2.

The New World Order Organisation and Criteria that are no Longer Applicable

New world order characteristic	Traditional criteria that has become irrelevant
Globally distributed with smaller teams	Physical locations and office buildings
Intrapreneurial	Employees fully allocated to one organisation
Operates like a small company	Traditional bureaucracies and large corporations
Focuses on “want” instead of “need”	Marketing strategies and product development creating new needs as opposed to responding to market demand
Adapts to change faster	Slow and immovable practices
Innovation anywhere	Innovation hubs that are carefully controlled and are the responsibility of top management
Runs in the cloud	Physical infrastructure and expensive technologies
Diversity	A one-size-fits-all organisational culture and demographic that does not think differently
Flatter structure	Hierarchical structures with layers of accountability
Tells stories	Communicates through formal processes
Democratises learning	Carefully controls knowledge and closes doors to outside opportunities
Shifts from profits to prosperity	Financial measures as a sign of success
Self-managed teams with leadership based upon contribution	Traditional power dynamics between manager and employee

Source: Adapted from Heerwagen et al. (2010)

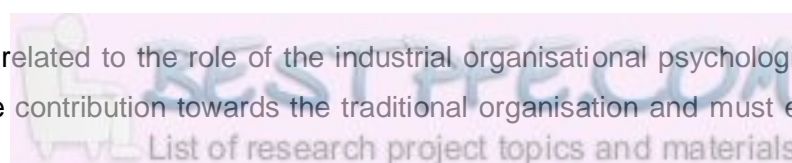
In the new world order, organisational effectiveness has become a critical success factor for survival (Ukpadi et al., 2014). The optimal utilisation of resources and the ability to mobilise resources in pursuit of a shared goal has become a critical component of the new world

organisation (Andrews, 2015). Although no one definition of organisational effectiveness has been articulated, there is consensus that the term refers to the ability of the organisation to effectively utilise resources to achieve the set goals of the organisation (Shiri, 2012). Various models of organisational effectiveness exist, yet their relevance to the new world order organisation needs to be evaluated. This relevance should be evaluated in terms of an environment that, owing to the nature of knowledge itself, will constantly change and innovate in order to build a different landscape that will demand more from all involved. The significant changes in the organisational landscape have also brought about a significant need to re-evaluate what constitutes a definition of organisational effectiveness (Zheng et al., 2010). As stated by Rahman (2014), if organisations are changing, surely the criteria that determine effectiveness should also be examined within the context of the knowledge-economy organisation. Cameron and Whetten (1983) also position the importance of organisational effectiveness within this context:

- Theoretically, the concept of organisational effectiveness lies at the heart of all organisational models and as such is a critical component of any organisational design regardless of mode, method or context.
- From an empirical point of view organisational effectiveness determines the relationships between key organisational constructs such as structure and authority, innovation and design and, ultimately, the ability to deliver on the vision and mission of the organisation.
- Practically, individual careers are often made or destroyed by the perception as to whether individuals are effective and adding value to the broader organisation.

Organisational effectiveness within the knowledge economy needs to be defined differently and more broadly in terms of the contribution of various factors, with traditional indicators such as financial status, quality and business performance providing a one-sided perspective of organisational effectiveness (Rahman, 2014). The rise of the knowledge economy has also re-emphasised the contribution of human capital to the success and sustainability of the organisation and this needs to be explored as a key contributor to the effectiveness of the organisation (Kataria, Garg, & Rastogi, 2013). The knowledge economy has also sketched an ever-changing organisational landscape that is characterised by a different set of rules and principles. This has challenged the industrial and organisational psychologist to redefine their role in enabling effective organisations that are sustainable in the future.

Traditional thinking related to the role of the industrial organisational psychologist needs to be broader than the contribution towards the traditional organisation and must evaluate the



role of the field within this ever-changing environment of knowledge creation (Veldsman, 2011). Historically, industrial organisational psychologists were seen to be the conduits of leadership and management, with a key focus on aligning the organisation in order to achieve set goals related to productivity, profit and growth (Barnard & Fourie, 2007), yet the new world order calls for the industrial psychologists to become the facilitators of human capital development at all levels (Carr, MacLachlan, & Furnham, 2012). The rejuvenated focus on human capital as a critical enabler of organisational success has resulted in a need to re-evaluate the potential contribution of the field of Industrial and Organisational Psychology to knowledge economy practices. The domain of the industrial psychologist has been mainly restricted to larger organisational systems, yet recent years have seen the call for the field to contribute to the small and medium enterprise sector, as a vehicle for economic growth and job creation (Manuel, 2013). The role of the industrial psychologist needs to evolve in order to enable a new world order organisation that is vastly different to its predecessor.

In reviewing the current literature, it would seem that numerous researchers have explored the concept of organisational effectiveness in an attempt to contribute towards a shared consensus on or definition of the construct (Andrews, 2015; Cameron & Whetten, 1983; Olivier, 2015). Most of these studies, however, focus on either a one-dimensional view of organisational effectiveness in terms of the ability to achieve financial indicators such as profit or, alternatively, focus on organisational effectiveness as the measurement of goals aligned to the organisational strategy (Rahman, 2014). Viewing organisational effectiveness in the context of the knowledge economy, however, highlights the need to evaluate human capital as a key contributor to organisational effectiveness and business performance (Oladimeji & Akingbade, 2012). Consequently, the following themes need to be explored in order to understand organisational effectiveness in the context of the new world order organisation:

- Review current definitions, models and approaches to organisational effectiveness and its applicability for the knowledge economy
- Explore the human capital contribution to organisational effectiveness in the new world order organisation
- Clarify the relationship between organisational effectiveness and business performance in new world order organisations
- Explore the contribution of the industrial organisational psychologist in this ever-changing environment and in order to remain relevant as a practice in the new world order.

To summarise, organisational effectiveness has become a key differentiator in the knowledge-based world order to enable the effective and optimal utilisation of resources to achieve organisational goals. Traditional approaches to organisational effectiveness, however, seem to be limited to measurements that largely exclude the contribution of human capital to the broader organisational effectiveness domain. Therefore, the changing organisational landscape and changes in consumer-driven on-demand organisational models warrant a redefinition of the role of human capital in enabling organisational effectiveness. Although organisational effectiveness has a clear relationship with business performance, the current one-dimensional perspective needs to be redefined in order to view organisational effectiveness not only as an antecedent that leads to performance, but also as a key criterion for enabling an organisational environment conducive to achieving its purpose.

Within this context, the following section will explore the concept of organisational effectiveness and its relationship with business performance in the knowledge economy. The section will explore current definitions, approaches and models of organisational effectiveness and the factors that influence the measurement of organisational effectiveness and will conclude with a focus on understanding the contribution of human capital practices to the concept. The section will also aim to provide a perspective on the role of the field of Industrial and Organisational Psychology in this ever-changing landscape.

2.2 THE RELATIONSHIP BETWEEN ORGANISATIONAL EFFECTIVENESS AND BUSINESS PERFORMANCE IN THE KNOWLEDGE ECONOMY

With the rise of the knowledge economy, the relationship between organisational effectiveness and business performance has been viewed from a process perspective in order to distinguish between the levels that will enable effectiveness and their relationship to business performance and outcomes (Chavan, 2009). The process perspective of organisational effectiveness encapsulates a view that business strategy is defined as the key input for defining business performance, which is considered to be the output of goal achievement, with organisational effectiveness being seen as the throughput or levers that will enable the successful achievement of organisational goals (Baruch & Ramalho, 2006). Organisational effectiveness should also be seen from a macro-perspective, as operating within a broader context and environment that relates to the economic, political, geographical and social arena influencing the organisational landscape (Filatotchev & Nakajima, 2014).

Elbashir, Collier, and Davern (2008) state that business performance is a subset of the broader concept of organisational effectiveness, and regard business performance predominantly in terms of the operational and financial outcomes of the organisation such as profitability, return on equity and earnings per share. If contextualised in this manner, business performance is then seen as a subset of organisational effectiveness and can be depicted as follows in Figure 2.3:

Richard, Devinney, Yip, and Johnson (2009) support the view depicted in Figure 2.3 by stating that business performance focuses predominantly on elements such as financial performance, product performance and shareholder return, while organisational effectiveness further encapsulates the internal factors that will enable the outcomes of business performance, such as internal processes, efficiency of systems and human capital.



Figure 2.3. Business performance as a sub-set of organisational effectiveness

Within the context of this study, three critical indicators of business performance were explored in terms of their contribution to demonstrating organisational effectiveness. The following section will explore the indicators of profit/loss, costs and cash flow related to operating activities as indicators of business performance.

2.2.1 Profit/Loss

A profit and loss statement can be defined as a financial statement that is used to report on the revenues, costs and incurred expenses within a specific period of time in the organisation (Investopedia, 2016). The profit/loss statement analyses the ability of the

organisation to generate revenue within the context of incurred costs and expenses in order to understand the growth of the organisation. This implies that the profit and loss statement provides an overview of the sustainability of the organisation, bearing in mind that the numbers should always be seen within the context of the organisation. Although an organisation might achieve higher revenue, higher costs or expenses may have been incurred in order to achieve the higher revenue numbers and, as such, the numbers should be seen as a complementary metric. Organisational growth is determined by evaluating the longitudinal properties of the profit/loss statement and comparing the numbers at defined points in time, usually on a quarterly or fiscal basis (Ahmed, 2009).

From a business performance perspective, the profit/loss statement can be regarded as one of the key financial statements that showcase organisational effectiveness, owing to the fact that it showcases the organisation's ability to use available resources to generate profit, whilst also reporting on what costs and expenses it needs to incur in order to achieve these profits. As such, investors regard the profit and loss statement as a key indicator of business health (Investopedia, 2016).

Within the context of this study, the profit/loss statement was used to determine the financial health of the organisation at both defined periods in time (T1 and T2) in order to be able to evaluate whether a potential relationship between levels of psychological work immersion and levels of profit/loss is evident within the organisation. The profit/loss statement was utilised as the basis of calculating the gross profit margin at both T1 and T2 and draw comparisons between the two defined time periods. The gross profit margin can be defined as an organisational financial health metric that is utilised to assess the percentage of remaining revenue after controlling for expenses of either goods or services (Novy-Marx, 2013). The gross profit margin is a key indicator of organisational profitability as it relates to the ability of the organisation to cover its costs through earned revenue and is utilised as an indicator of organisational growth (Investopedia, 2016). For the purpose of this study, it was calculated according to the following formula as per the guidelines of Stahl, Heitmann, Lehmann, and Neslin (2012):

$$\text{(Total revenue – Cost of services)/ Total revenue) *100 = x\%}$$

For example, if company A had a total revenue of R5 million at the end of the financial year but cost of services/goods where calculated at R3 million the gross profit margin could be calculated as follows

$$\text{(R5m – R3m)/R5m*100 = 40\%}$$

The gross profit margin of company A is calculated at 40% which means that the organisation is able to cover costs through the profits that they earn as a result of the goods/services provided. A higher profit margin is deemed to indicate a healthier organisation from a financial perspective (Investopedia, 2016).

2.2.2 Costs

The Business Dictionary (2016) defines costs in terms of the monetary evaluation of required effort, material, resources, time and utilities consumed to gain a product or service. Within the context of organisational effectiveness, costs are a key indicator because they demonstrate what the organisation needs to invest in terms of incurred time, monetary expenses and utilities to achieve targets and goals. Costs form part of the profit/loss statement and are a key indicator in terms of organisational sustainability. Within the context of the knowledge economy, a number of organisations have embarked on cost-cutting exercises and tried to minimise incurred costs whilst still achieving the same levels of revenue (Hood, & Dixon, 2013). Pettinger (2012) states that organisations incur different types of cost, as explained in Table 2.3.

Table 2.3.

Types of Cost Incurred in Organisations

Types of cost	Description
Fixed costs	Fixed costs do not change over time and as such remain relatively stable, for example rent, legal fees and insurance.
Variable costs	Variable costs vary depending on operational needs, for example purchased raw materials for production
Semi-variable costs	Semi-variable costs refer to costs that can fluctuate to an extent over time but will never be completely extinguished, for example labour could increase if more shifts are required by the organisation; however, even if all shifts are cancelled because no production is scheduled, some labour will still be required to look after the premises.
Total costs	Total costs refer to fixed costs plus variable costs.

Source: Pettinger (2012)

For the purpose of this study, total costs will be evaluated as a key measure of financial performance within the domain of organisational effectiveness, as total costs provides a good view of costs that need to be incurred in order to perform. The study evaluated costs as a key indicator of business performance and its relationship with organisational effectiveness, as this provides a good evaluation of the efficiency of the organisation when seen within the context of profit/loss incurred at both periods in time (T1 and T2). Costs were also utilised in order to calculate the defensive interval ratio which in conjunction with cash flow from operating activities indicates the ability of the organisation to meet short term

financial obligations and is a key indicator of liquidity (Durrah, Rahman, Jamil, & Ghafeer, 2016). The calculation and relevance of the defensive interval ratio is discussed below as part of the cash flow from operating activities financial measure.

2.2.3 Cash flow from operating activities

Cash flow from operating activities is a critical measure of business performance, as it provides an overview of the ability of the organisation to pay its immediate expenses (McGrew, 2016). Cash flow from operating activities is a key measure of an organisation's current health because it indicates whether the organisation has enough available cash to operate in its current state and, as such, is a good indication of an organisation's financial standing. Roberge (2016) states that lack of cash flow is one of the most frequent causes of business failure, leading to the inability to meet current commitments and pay current expenses, costs and creditors in a timely manner. From an investor perspective, cash flow in general terms is a key metric of interest owing to the fact that a lack of cash can result in business failure, reputational risk resulting from inability to pay suppliers, operational risk resulting from inability to purchase materials or services required to deliver and employee satisfaction owing to inability to pay wages (McGrew, 2016). Within the context of this study, as this is a key indicator of organisational effectiveness cash flow from operating activities was evaluated at both points in time to be able to determine the ability of the organisation to operate and meet current commitments. The defensive interval ratio was also further utilised in order to determine the time period within which the organisation will be able to meet its financial commitments from cash reserves (Investopedia, 2016). For the purpose of this study, the defensive interval ratio was calculated as per the following guidelines from Khatik and Singh (2015):

$$\text{(Cashflow from operating activities – Trade and other payables)/monthly operational cost budget} = \text{number of months cash available}$$

For example if organisation A has yielded R5 million in cash at the end of the financial year with a trade and other payables of R2.5 million and its operational budget stipulates that it requires R500 000 per month to operate effectively. The following calculation would indicate the defensive interval ratio for the organisation:

$$\text{(R5m – R3m)/R500 000} = \text{4 months}$$

This indicates that organisation A can still operate without having to utilise any of its longer-term reserves for four months. Even though no ideal defensive interval ratio exists, a

general guideline is to aim to be able to keep a six-month defensive ratio interval to indicate sufficient business health (Durrah, et al., 2016).

A further measure related to the perception of employee contribution to business performance was incorporated into the study to evaluate whether employee perception of performance had any impact on the financial performance of the business.

2.2.4 Employees' perceptions of business performance

Individual performance has been shown to be positively influenced by the perceived organisational support received by employees (Alfes et al., 2013), as well as the balance between job demands and resources (Schaufeli & Taris, 2014). Employee performance is also significantly affected by the perception of individual contribution to organisational success, which in turn will influence the levels of engagement and psychological attachment in the workforce (Kehoe & Wright, 2013). In this study, the employee perception of contribution to organisational performance will be evaluated to determine whether changes in employee perception of organisational performance had any significant effect on changes in the financial business indicators (profit/loss, operating costs, cash flow from operating activities) at both T1 and T2.

Profit/loss, costs, cash flow related to operating activities, the gross profit margin and the defensive interval ratio were used as financial indicators of organisational effectiveness in the context of this study for the following reasons:

- Profit/loss shows whether the organisation has the potential to grow into the future, as well as being an indicator of organisational health at two defined points in time. Within the context of psychological work immersion, the potential relationship between the PWIS (Veldsman, 2013) and profit/loss indicators were explored to show that experienced levels of psychological work immersion could influence the sustainability of the organisation.
- Operating costs show what the organisation has to invest in order to achieve the levels of performance related to the profit and loss statement. The cost indicator was used as this is a key indicator of how effectively and efficiently the organisation applies resources in order to operate. The PWIS (Veldsman, 2013) was applied to understand whether the levels of psychological work immersion showed any relationship to how effectively the organisation was spending its resources in terms of costs.
- Cash flow from operating activities provides an overview of business health and whether the organisation is in good standing. This metric is used to show whether

the organisation is able to meet current commitments. Cash flow from operating activities as a metric was explored in terms of the relationship with experienced levels of psychological work immersion to evaluate whether psychological work immersion levels yield any relationship with the sustainability of the organisation.

- The gross profit margin indicates the liquidity of the business and is an indicator of financial health. Gross profit margin will be compared with industry norms based on the relevant industry applicable to this study.
- The defensive interval ratio is an indicator of the financial sustainability of the organisation in the future. Defensive interval ratio scores will be compared with industry norms based on the relevant industry applicable to this study.

The study was limited by the fact that external variables within the environment such as political, economic, social and legislative requirements could influence the financial indicators relevant to this study and distort the relationship between the people effectiveness measures, psychological attachment and financial indicators. From an internal perspective, the study was also limited in the sense that internal factors could have influenced the variables, for example the need to acquire new equipment or leadership changes. The researcher took cognisance of these factors when interpreting the data relevant to this study, as well as validating the findings with the organisational members to gain further insight into the context within which the data were collected. This is in line with the guidelines posited by McNabb (2015) when controlling for confounding factors.

The knowledge economy calls for a more robust approach to measuring performance that not only encapsulates traditional measures such as profit/loss, costs, and cash flow related to operating activities but also evaluates broader criteria that will enable the effectiveness of the organisation as aligned to the processes and systems that create performance as a key output (Waheed, Mansor, & Ismail, 2010). Organisations associate knowledge with the ability to innovate, to drive competitive advantage to new markets, to create employment opportunities and, ultimately, to drive the successful achievement of organisational goals (Botha et al., 2014). In the knowledge economy landscape, the criteria that organisations apply to measure performance need to be adapted to include new measures such as the ability to innovate, flexibility in processes, the ability to enter new markets, customer satisfaction, technological capability, speed to market and the ability to build an organisational culture that attracts, engages and retains talent (Bersin, 2015).

In summary, the relationship between organisational effectiveness and business performance has been well researched and established (Olivier, 2015). However, the criteria pertaining to what constitutes the measurements of organisational effectiveness in

order to drive successful business performance will be vastly different in the new world order organisation, Hence, an in-depth exploration of organisational effectiveness is required in order to understand how it will enable business performance in the future.

2.3 AN OVERVIEW OF ORGANISATIONAL EFFECTIVENESS

Organisational effectiveness has been the focus of numerous research studies stretching back to 1957, with Georgopoulos and Tannenbaum (1957) stating that organisational effectiveness is one of most complex problems within the domain of the study of how organisations function (Olivier, 2015). The complexity of the concept lies in its contextual nature, which is a determining factor that influences the criteria that determine organisational effectiveness (Cameron & Whetten, 1983). This implies that two similar organisations within the same market may have completely different effectiveness criteria, depending on strategy and the organisational model and design. Ever since the evolution of the Tayloristic organisational model (Rasmussen, 2007), scholars and practitioners have attempted to define organisational effectiveness, yet the definition seems to be elusive and open to interpretation. Yuchtman and Seashore (1967) state that organisational scholars are in dire need of a revised organisational framework for defining the concept, with Katz and Kahn (1970) and Steers (1977) confirming this view by stating that we still only have a rudimentary definition of the concept.

Erkutlu (2008) maintains that organisational effectiveness cannot be observed directly and, as the term is grounded in perception, it will also be measured through preferences regarding strategic constituencies. In nature, the concept of organisational effectiveness can also be paradoxical, implying that effectiveness criteria in an organisation can be mutually exclusive whilst operating at the same time (Smith, & Lewis, 2011). The concept is also often equated with organisational efficiency, an approach that is vastly incorrect (Martz, 2008). Martz (2008) states that this approach sees the organisation as a closed system and ignores the contextual relevance of the environment which will be a key contributor to the criteria that define the organisational effectiveness construct. Some theorists furthermore believe that organisational effectiveness is a defined end state that can be achieved, as opposed to a constantly changing landscape that needs to continuously be developed over time (Ridley & Mendoza, 1993). Viewing organisational effectiveness as an end state ignores the process dimension of the concept, reduces organisational effectiveness to a static perspective devoid of complexity and only provides a limited in-time perspective of the organisation which, given the characteristics of the new world order organisation, has become irrelevant.

Olivier (2015) states that despite the various perspectives on and approaches to defining the construct, it is possible for researchers to reach consensus on the following key points regarding the definition of organisational effectiveness:

- Organisational effectiveness relates to the achievement of goals as part of organisational performance.
- The concept has become increasingly important and a rise in the literature focused on organisational effectiveness has been prevalent since the early 2000s.
- Organisational effectiveness is related to both strategy and performance outputs.

From a definition perspective there is a need to explore different approaches to defining the term “organisational effectiveness” in order to reach consensus on its relevance within the context of the knowledge economy. Table 2.4 provides an overview of some of the more influential approaches to defining organisational effectiveness, as well as the most prevalent criticisms related to each approach:

Table 2.4.

Summary of the Main Approaches to Defining Organisational Effectiveness

Approach	Major premise	Main criticism
Criteria approach	Organisational effectiveness as a set of criteria to be measured.	Criteria definition is subjective and ignores the process elements of organisational effectiveness.
Goal-setting approach	Organisational effectiveness is seen as the output and achievement of predefined goals.	Sees the organisation as stable and static.
Systems resource approach	Contributes to the definition of resources that need to be obtained in order to be effective.	Seen as focusing too much on what causes organisational effectiveness as opposed to the concept itself.
Internal process approach	Adds to the humanistic domain and starts viewing organisational effectiveness as the creation of a high-functioning work environment.	Ignores the external environment as key influencing factor.
Strategic constituencies approach	Adds the stakeholder delight element to organisational effectiveness.	States that stakeholders all have different expectations that change over time.

Source: Adapted from Cameron (1983)

The following section will explore each of the above-mentioned approaches in order to arrive at a working definition of organisational effectiveness in terms of its relevance to the knowledge economy landscape.



2.3.1 The criteria approach to defining organisational effectiveness

The criteria-based perspective on organisational effectiveness has become popular in the knowledge economy as it expands the measurement of effectiveness beyond an outcome-based approach (Rahman, 2014). The approach incorporates internal criteria within the organisation as key levers that will lead to effectiveness. Traditionally, scholars evaluated criteria such as net profit, organisational productivity and organisational growth as elements of organisational effectiveness (Yuchtman & Seashore, 1967). Criteria-based approaches have expanded this definition over time to evaluate concepts such as commitment (Katz & Kahn, 1971), morale, employee turnover, absenteeism and job satisfaction (Kahn & Morse, 1951), with a recent demand to include human capital-related criteria as a key indicator of effective functioning (Dierdorff & Ellington, 2012; Mayo, 2016). The complexity of the knowledge economy has demanded a shift from the traditional univariate effectiveness measures conceptualised by Steers (1977) to a multivariate approach that does not view organisational effectiveness as the ultimate achievement of one criterion but rather as a combination of different criteria. Both univariate and multivariate criteria approaches are challenged by the selection of relevant criteria as well as the sources of criteria, that is, where they will originate from within the organisation (Cameron, 1983). Cameron (1983) states that criterion type is usually determined by the following factors:

- Aspect of the organisation that is being considered e.g. goals, internal processes
- The universal relevance of the criteria
- The static or dynamic element of the criteria

Harrison (2005) found that depending on the researcher, a different combination of criteria tends to be applied to define the effectiveness of the organisation, which is largely determined by the assessment approach. Table 2.5 provides a summary of some of the assessment approaches and related criteria that have been applied in order to describe organisational effectiveness:

Table 2.5.

The Influence of the Assessment Approach on the Selection of Measurement Criteria

Assessment approach	Measurement criteria
Output, goals and quality	Rates of rejects, errors
Internal systems state Efficiency and costs	Productivity, wastage
Systems resources Resources, quantity	Size, sales
Multiple stakeholders Standards	Effectiveness

From a practitioner point of view, the criteria-based approach to organisational effectiveness requires a theoretical boundary setting of what the potential criteria for measuring effectiveness should be, as well as an empirical validation and agreement on criteria with key stakeholders in the organisation. The criteria approach is criticised in the literature owing to the open-ended approach with which criteria should be considered, as well as the fact that it views organisational effectiveness as an end state and does not allow for changes over time aligned to the agility of the organisation. The criteria-based approach is, however, useful in terms of its contribution towards understanding relationships between criteria, as well as its contribution in the knowledge economy towards the incorporation of human capital-related criteria as part of the measurement scorecard.

2.3.2 The goal-setting approach to organisational effectiveness

Kreitner and Kinicki (2010) state that the goal achievement approach is the most widely used approach to organisational effectiveness as it defines effectiveness in terms of the degree of goal achievement. The goal approach has a lot of support in the historic literature (Cunningham, 1977; Steers, 1977) because this approach allows the organisation to be measured against its intentions as opposed to a perception-based value judgement. However, the goal approach seems to be only applicable to organisations that operate in reasonably stable environments with clear time-bound goals that can be measured precisely (Olivier, 2015). More traditional measures of organisational effectiveness such as productivity and financial performance are prevalent in this approach and are derived from traditional doctrines of goal-setting theory that base success on the organisational charter, which tends to refer to organisational effectiveness in terms of the achievement of a number of predefined outcomes.

Martz (2008) criticises the goal-setting approach as being grounded in the assumption that organisations are rational, deliberate and goal seeking. The literature supports the criticism of this approach as the goal-based approach at times does not accurately reflect the real functioning of the organisation, ignores process and is often not objective or reliable (Etzioni, 1965). Mohr (1982) and Locke, and Latham (2013) add to this, stating that the main objections to the goal approach are as follows:

- Organisational goals are not objective and are open to subjective interpretation.
- Content that influences organisational goals is usually too complex to be explained and applied as a measure of effectiveness.
- Goals are not universal and as such the goal-setting approach to organisational effectiveness cannot be standardised across two organisations.

From an organisational effectiveness definition perspective, the goal-setting approach focuses largely on the construct as an outcome, ignores the internal relationships between criteria that will lead to the effectiveness of the organisation and is largely based upon the perception that goals and strategies are static and do not change over time.

2.3.3 The system-resource approach

The systems-resource approach was conceptualised by Yuchtman and Seashore (1967) and is based on the premise that the organisation is an open system that needs to utilise resources in order to achieve organisational goals. Izquierdo and Buelens (2011) define resources as the instruments, processes, knowledge, information and skills available to the organisation in order to gain competitive advantage over its competitors. The system-resource approach sees effectiveness as a function of survival and assumes that organisational survival is dependent on the utilisation of resources within the environment. The approach has been criticised for focusing too much on the predictors of organisational effectiveness rather than the actual concept itself (Wilderom, Glunk & Maslowski, 2000). Theorists also state that resource acquisition is a function of being able to deliver on organisational goals and, as such, this approach to organisational effectiveness is not vastly different from the criteria-based approach (Izquierdo & Buelens, 2011). Price (1972) and Manzoor (2012) are of the opinion that this approach does not allow for the optimisation of resources but rather the acquisition of resources. This refers back to the argument of the effectiveness versus the efficiency of the organisation and differentiates between resource availability, efficient utilisation of resources and outputs achieved.

2.3.4 The internal process approach

The internal process approach is rooted in the systems-based approach but further extends the perspective of organisational effectiveness to include the humanistic domain (Izquierdo & Buelens, 2011). The approach states that a healthy working environment characterised by factors such as commitment, trust and engagement will enable an optimal environment. Leadership excellence is critical in this approach in order to build a fully functioning work environment; factors such as communication, culture and work climate have been cited as being key contributors to this approach (Schneider, Ehrhart, & Macey, 2013). Criticism of the internal process approach relates to the fact that the approach does not actually measure organisational effectiveness indicators and that it cannot evaluate functions that are outside the control of management (Bluedorn, 1980; Harper, 2015). Martz (2008) further states that the approach is limited in terms of its responsiveness to changes in the external environment and may distract the organisation by only providing an internal view of effectiveness that could over time result in irrelevance and loss of market share.

2.3.5 The strategic-constituencies approach

The strategic-constituencies approach incorporates the fact that organisations are a key contributor to a number of stakeholders and should be measured in terms of the impact they have on these stakeholders (Waldstrøm, Sinding, & Buelens, 2011). This approach takes into account the fact that an organisation serves multiple goals and, as such, a variety of evaluation criteria should be applied in assessing its effectiveness. The strategic-constituencies approach has gained popularity with the rise of concepts such as stakeholder delight (Verwey, Du Plessis & Van der Merwe, n.d.) and bases its premise on the fact that an effective organisation is one that provides some form of delight to all related parties. The biggest criticism of this approach is rooted in the fact that it could potentially ignore the sustainability of the organisation in an attempt to satisfy a certain level of stakeholder and provide management with the never-ending challenge of balancing priorities between different stakeholders (Olivier, 2015). The approach has also been criticised because it might not value the needs of all stakeholders equally, for example the needs of board members above the needs of employees, as well as the fact that stakeholder needs will often change or be unarticulated in the organisational landscape.

Based upon the evaluation of the above approaches to defining organisational effectiveness, it is clear that no one definite approach exists. The different approaches should rather be seen as contributing various elements to a working definition of organisational effectiveness as opposed to one complete definition. The different perspectives above highlight the fact that organisational effectiveness as a concept has evolved over the past 60 years and that

various approaches have been developed in line with the changes in the organisational landscape. As organisations have become more complex with the shift towards a new world order, the approaches to understanding organisational effectiveness have also evolved. Table 2.6 (Cameron & Whetten, 1983) below describes the evolution of theoretical frameworks that have resulted in different approaches to understanding organisational effectiveness:

Table 2.6.

The Evolution of Approaches to Understanding Organisational Effectiveness

Theoretical framework	Description	Approach
Ideal types	Matching the organisation's profile and ideal type	Goal approach Internal process approach
Contingency theory	Matching the organisation's profile to the environmental conditions	System resource approach
Multiple constituencies	Matching the organisation's activities and constituencies expectations	Strategic constituencies approach
Paradox approach	Combining contradictory elements and managing inconsistent expectations	Strategic constituencies approach

Source: Adapted from Cameron and Whetten (1983)

Given the challenges that exist in terms of approaches to and definitions of organisational effectiveness, Henri (2004) postulates that theorists and practitioners need to take one of the following stances:

- An exclusionary stance that promotes one approach as the single and best way of defining organisational effectiveness. This stance deems a single approach to be applicable to all contexts, organisations and situations.
- A cumulative stance that sees every approach as a contributor to a better understanding of organisational effectiveness as a domain, with each approach improving our understanding of the concept.
- A complementary stance that sees all approaches as equally valuable and capable of capturing a component of the domain of organisational effectiveness. This stance sees every approach as different and applicable to different contexts and realities.

Based on the above discussions, the researcher views the approach to defining organisational effectiveness in terms of a complementary stance. The complementary stance posits that all approaches to organisational effectiveness are relevant and applicable in different contexts. Such a stance does not differentiate between a right or wrong approach, but rather holds that each approach adds to the understanding of organisational

effectiveness and should be seen as a contributing dimension towards the broader concept. The researcher believes this stance is suitable in the knowledge economy landscape owing to the ever-changing environment and the usefulness of different approaches within different contexts. The researcher does not believe that only one definition or approach to the construct exists nor would it be relevant in the knowledge economy because an attempt to dilute and simplify the concept to that extent would reduce its usefulness and its applicability in the knowledge economy environment.

Given this perspective, the following section will provide a brief overview of organisational effectiveness models from a complementary perspective and evaluate each model in terms of its contribution to a better understanding of the knowledge economy organisation.

2.4 AN OVERVIEW OF ORGANISATIONAL EFFECTIVENESS MODELS

Organisational effectiveness models are developed and used to understand the organisation and the factors or elements that enable its effectiveness (Nienaber & Martins, 2016). The models make use of a variety of approaches to the concept, with the different models acknowledging the contribution of each of the approaches discussed above. The development of such models has also evolved over time in an attempt to keep pace with the ever-changing environment and the requirements of the organisation in terms of performance (Olivier, 2015). Table 2.7 below summarises a selection of the more influential models of organisational effectiveness that will be subsequently discussed and also highlights the major premise, criticism and perspective regarding how the organisation interacts with the external environment, as a key requirement for evaluating relevance in the knowledge economy:

Table 2.7.

A Summary of Organisational Effectiveness Models

Model	Variables	Variable interdependency	Perspective in terms of the external environment	Major premise	Major criticism
Force field analysis (Lewin, 1951)	Driving and restraining forces	Driving and restraining forces occur simultaneously	Either of the forces may be the result of environmental drivers	Change brings disequilibrium which needs to be re-established	Too simplistic in nature to understand modern-day organisations
Leavitt's model (Leavitt, 1965)	Task, structure, technological and people variables	Interdependent variables with changes in one resulting in changes in all	Not represented in the model	Variables used as levers in order to bring about change	Model does not allow for external influence on the organisation
Likert systems model (1967)	Motivation, communication, interaction, decision-making, goal-setting, control, performance	Levels are measured independently	Not directly represented within the model	Identifies four different types of management system within the organisation as well as contributor of cultural artefacts towards the organisational effectiveness domain	Not comprehensive enough to identify subtle differences within organisational behavioural systems
Weisbord's six-box model (Weisbord, 1978)	Leadership, relationship, external environment, helpful mechanisms, structure, purpose, rewards	Interdependency between elements is not explicit	Environment influences the model from an input or output point of view	The larger the gap between the formal and informal systems in the organisation the less effective the organisation will be	Behaviours underpinning the informal organisation are not clearly defined
Congruence model (Nadler & Tushman, 1980)	Inputs, throughputs and outputs	Dynamic interactions occur within the organisation at different levels	External environment provides feedback on inputs and outputs	Assumes fit for congruence between internal mechanisms and distinguishes between formal and informal environment	Criticised in terms of over-emphasis on some and under-emphasise on other critical aspects and components



Model	Variables	Variable interdependency	Perspective in terms of the external environment	Major premise	Major criticism
Burke-Litwin model (Burke & Litwin, 1992)	Transformational, transactional and performance variables	Strong relationships between elements of the model leading to causality	Views environment as key influencing factor	Provides a view on causality and links the external, internal and output dimensions together	Criticised in terms of its complexity and the number of concepts under exploration
Veldsman's model of efficiency (Veldsman, 2015)	Influencing factors Transactional Transformation and performance variables	Strong relationships between inputs, elements within the control of the organisation and outputs	Sees the organisation within the context of the external environment	Organisation as an open system that is influenced by and influences the environment through actions and levers	Criticised in terms of its inability to differentiate between efficiency and effectiveness
Olivier's organisational effectiveness model (Olivier, 2015)	Healthy systems, goal achievement and customer satisfaction	Strong relationship between the different elements	Limited focus on external environment sees client satisfaction as a consumer-driven output because the organisation engages with the external environment	Healthy organisational system will lead to satisfied clients	Limited ability to diagnose factors outside of the organisation that will influence the creation of a healthy system

In summary, it is clear that each of the organisational effectiveness models should be evaluated within the context of where the model should be applied. The models each focus on various elements related to organisational effectiveness and as such it is clear that these models should be evaluated within the specific context of use applicable to the knowledge economy. The external environment, as a key influencing factor within the knowledge economy, however, has resulted in a key shift in terms of being able to understand the organisation as part of a holistic system and thus cannot be ignored when hoping to improve the effectiveness of the knowledge economy organisation.

The models above will be discussed in terms of a short description of the premise that underpins the model, as well as an evaluation of the contribution of the model towards the organisational effectiveness domain. The discussion will conclude with a brief overview of the main criticisms of the models and evaluate their relevance to the modern knowledge economy environment.

2.4.1 Lewin's force field analysis model

Lewin (1951) conceptualised the force field analysis model based on the fundamental belief that the organisation needs to understand the current landscape in order to change towards a desired end state. The model evaluates both the driving forces and the restraining forces that lead to an understanding of the current effectiveness of the organisation, the method required to disrupt the required equilibrium as well as to re-establish harmony following the change process in order to achieve the desired end goal state. Figure 2.4 below depicts the influence of driving and restraining forces on the current state of affairs in the organisation and the influence on the desired state of affairs:

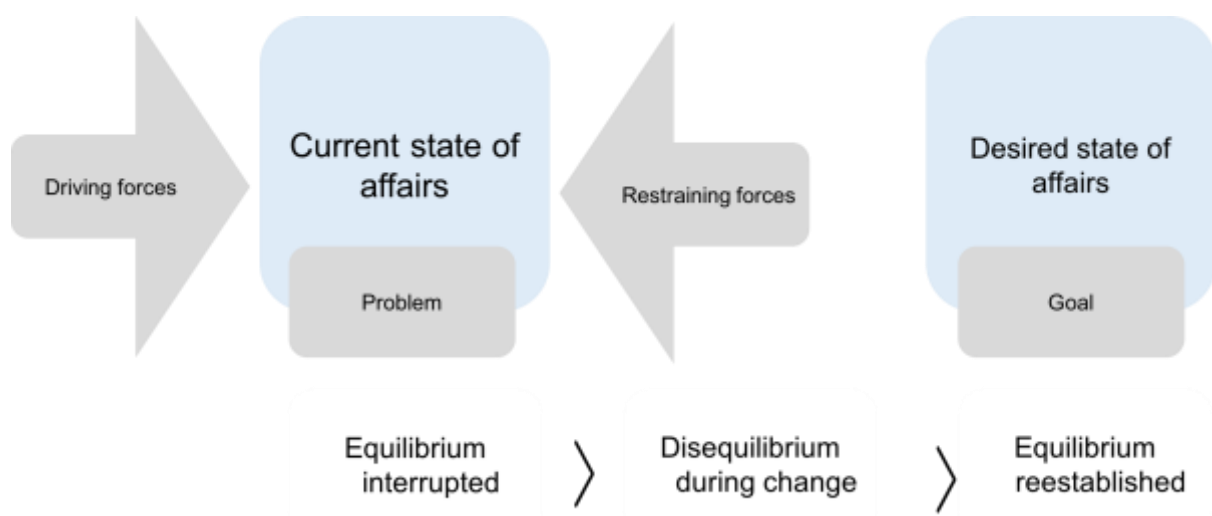


Figure 2.4. Force field analysis model

From an organisational effectiveness perspective, the model analyses criteria in terms of the driving and restraining forces that influence the current functioning of the organisation in order to enable a change process to achieve a state of enhanced effectiveness. The model is simplistic in nature but has, nevertheless, made a fundamental contribution towards the understanding of the organisational change process based on the freeze, unfreeze, refreeze change model that Levin (1951) conceptualised as a key breakthrough in the change literature. The model is however criticised for its simplicity, with various sources stating that the model is no longer applicable in an ever-changing organisation where stability is not the norm (Olivier, 2015).

2.4.2 Leavitt's model

Leavitt (1965) developed a simplistic model for understanding the organisation in terms of four interrelated variables. Figure 2.5 below depicts the four interrelated variables as well as the relationship between them:

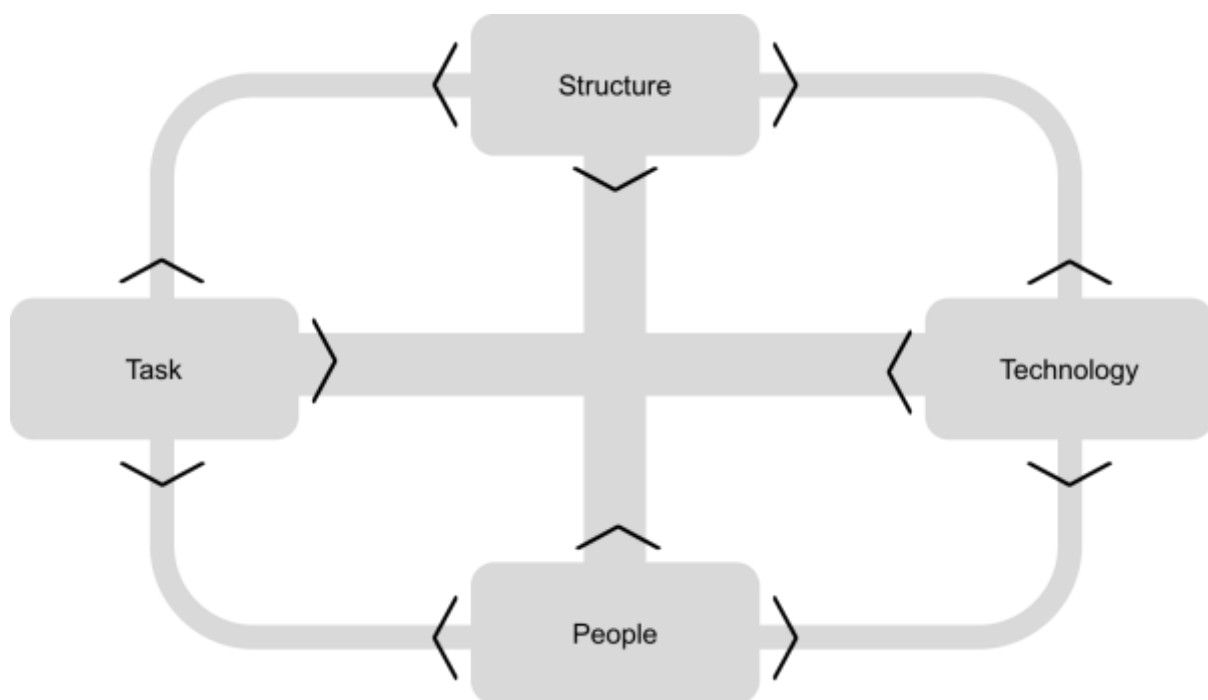


Figure 2.5. Leavitt's model of effectiveness

The four variables can be described as follows

- Structure, which refers to the authority, communication and work flow systems within the organisation
- Technology, which refers to the equipment, machinery and tools of the trade required in order to execute organisational goals

- The task variable, which refers to the defined tasks required to deliver products and/or services in the organisation
- The people variable, which refers to the “actors” who need to carry out these tasks in the execution of delivery.

The four variables are interrelated; moreover, a change in one of the variables will have an impact on the other elements. From an organisational effectiveness perspective, the model has been criticised for providing only an internal view of the organisation which does not account for the complexity of the knowledge economy organisation. The model does, however, establish the first reference to the human capital contribution to effectiveness, even though the view is based more on a task-orientated focus than a behavioural dimension (Nadler & Tushman, 1980).

2.4.3 Likert system analysis

The Likert system analysis model (Likert, 1967) categorises the organisation into one of four subsystems, functioning by evaluating factors such as communication, motivation, interaction, decision-making, goal-setting, control and performance. The model plots the organisation in terms of one of the following systems of functioning:

- System 1: Exploitative–Authoritative: autocratic system based on a one-sided and directive management system.
- System 2: Benevolent–Authoritative: partial toleration of subordinates whilst an authoritative style remains.
- System 3: Consultative: cooperation between management and lower levels but important decisions are still made by the management group and limited trust exists.
- System 4: Participative Group: great sense of faith in and autonomy of followers.

This model provided the foundational theoretical framework for a number of other models and has been noted as one of the first organisational effectiveness models that have incorporated key behavioural criteria in terms of what will influence the effectiveness of human capital within the organisation. With the development of the Likert system analysis model, the acknowledgement of human factors that will influence the performance of people as key enablers for effectiveness was defined and it also started to lay the foundation for the notion that organisational culture could be a determining factor in effectiveness and ultimately business performance (Likert, 1967).

2.4.4 Weisbord's six-box model

Organisational effectiveness models up to this point in the literature seem to have been very internally focused with limited acknowledgement of the environment or system within which the organisation operates (Olivier, 2015). The evolution of open system theory, which acknowledged the organisation as a living system functioning as part of a broader environment, brought to the fore the need to include a strong contextual element in understanding how the organisation functions. Weisbord (1978) identified six broad categories that influence organisational life. These are depicted in Figure 2.6 below:

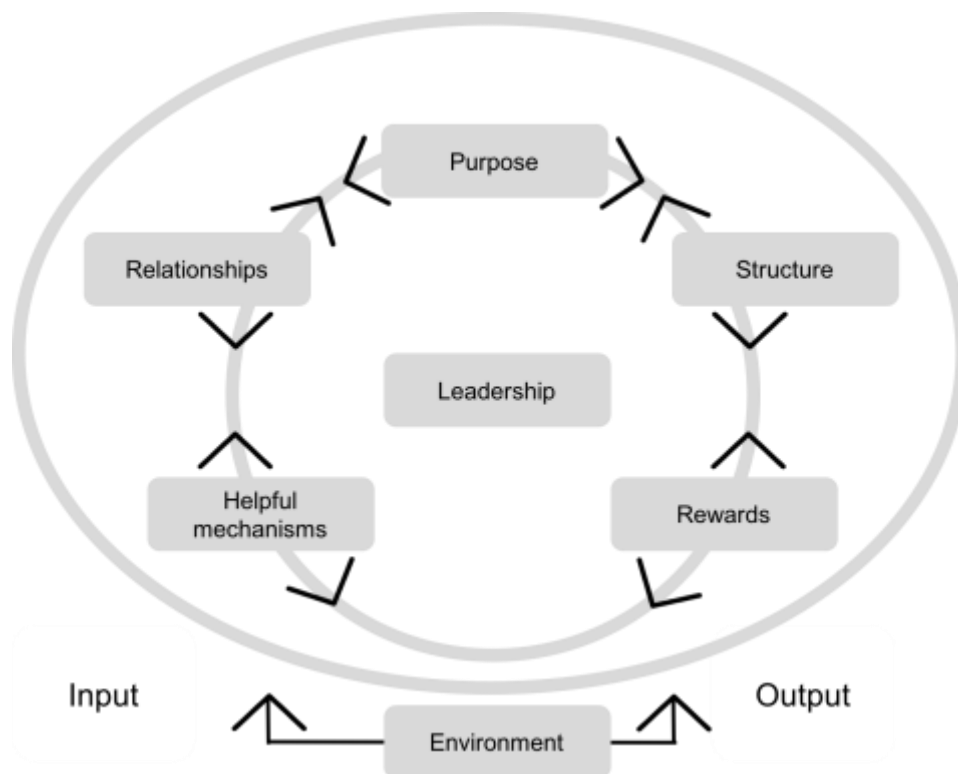


Figure 2.6. The Weisbord model

The “purpose” category refers to the vision, mission and goals of the organisation that are achieved through the structure dimension; this dimension describes how the organisation is organised in terms of delivery. How people interact with one another within the structure refers to both relationships and the role of technology in determining the function of the organisation. Rewards refer to both the intrinsic and extrinsic recognition of job fulfilment, while leadership refers to the act of balancing the other boxes and performing general leadership tasks. “Helpful mechanisms” refers to inherent organisational processes such as planning, controlling, budgeting and so forth which are required to enable the organisation to function. Weisbord’s model incorporates the environment as defined inputs and outputs related to influencing factors such as unions, government, society and the economic climate (Nadler & Tushman, 1980). Two fundamental premises underpin the Weisbord model – it

distinguishes between the formal and the informal organisation by referring to how we depict the organisation in terms of structure and process and describes the behaviours that inform the functioning of the organisation (Zhang, Schmidt, & Li, 2016).

Although the model is more comprehensive and includes a perspective that understands both the formal and the informal organisation, the model's major criticism lies in the fact that it does not sufficiently define the underlying behaviours that will influence the effectiveness of the informal organisation. Even though the model acknowledges the existence of the informal organisation, it does little to identify the criteria relevant to enabling its effectiveness (Stegerean, Gavrea, & Marin, 2010).

2.4.5 The congruence model

Nadler and Tushman (1980) conceptualised the congruence model on the basis of a number of assumptions that encapsulate the key beliefs of both the Weisbord and Leavitt models:

- Organisations are open systems that operate within a broader sphere of influence.
- Organisations are dynamic and as such change is possible and critical for survival.
- There is definition between the levels within the organisation in terms of behaviour occurring at individual, team and group levels.
- Interactions occur between key systems in the organisation at group, individual and team levels.

The model is significant in the organisational effectiveness literature, as it postulates the first application of the process view of effectiveness by defining inputs, throughputs and outputs as part of the organisational system (Král, & Králová, 2016). The model also acknowledges a strong resource requirement component that aligns it strongly to early approaches towards organisational effectiveness. The model also applies strategy as a key link between the response of the organisation to the external environment and the key differentiator in terms of how resources will be applied in the organisational environment to deliver on key outputs or goals (Lin, 2014). The model further focuses on a strong sense of congruence which describes the balance between the different elements of the model, for example a demand for knowledge needs to be balanced by the ability of the system to supply the skills it is required to deliver. The greater level of balance obtained within and between the different components of the model will lead to more effectiveness and ultimately better organisational performance (Zhang et al., 2016). The model is depicted in Figure 2.7 below. Table 2.7, also below, provides further understanding of how the different components of the model are defined at the group, individual and organisational levels.

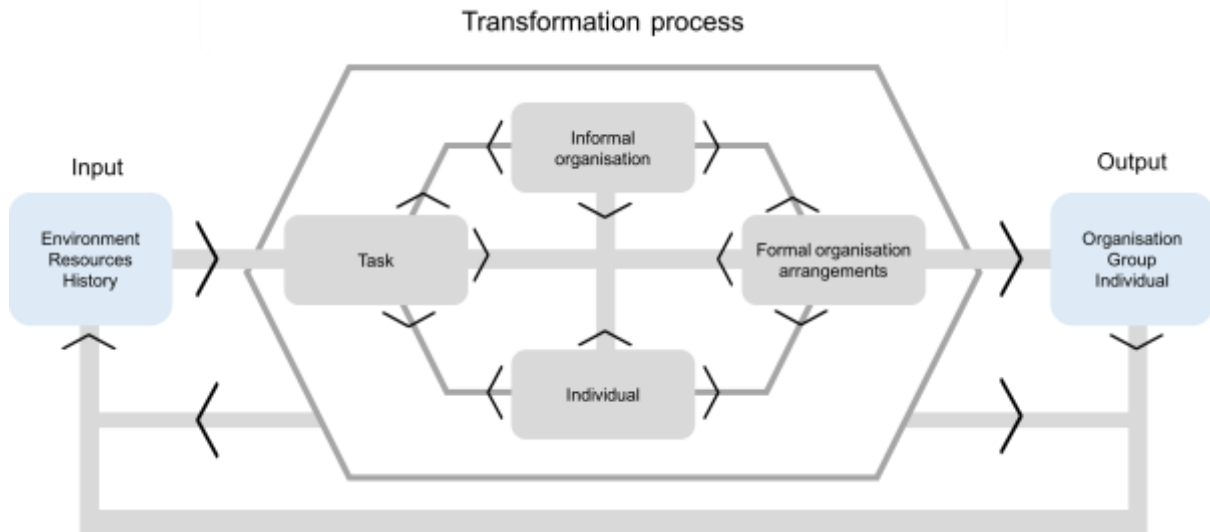


Figure 2.7. Congruence model

Table 2.8 below summarises each of the components applicable to the congruence model.

Table 2.8.

The Group, Team and Individual Measurement Dimensions

<u>Inputs</u>			
Environment	Resources	History	Strategy
All factors outside the organisation that have key influencing roles on organisational functioning such as institutions, groups or events	Assets to which the organisation has access such as human capital, financial capital and knowledge	Patterns of past behaviour that will influence current levels of effectiveness and functioning	Decisions that will determine how the organisational resources will be applied to meet the demands of the market within the context of the organisational history
<u>Throughputs</u>			
Task	Individual	Formal organisational arrangements	Informal organisation
Basic and inherent work to be done by the organisation	Characteristics of individuals in the organisation	Structures, processes and methods created to enable the organisation to function	Emerging arrangements including things such as relationships, processes and structures that are created during daily functioning
<u>Outputs</u>			
Individual behaviour and affect	Group and intergroup behaviour		System Functioning
Activities which have an impact on performance such as absenteeism, turnover, lateness	Intergroup behaviour such as conflict, quality of communication and collaboration		Attainment of desired goals i.e. effectiveness of achievement

The model has been criticised for its over-emphasis on some and under-emphasis of other critical aspects and components related to organisational effectiveness, yet it is known as one of the first comprehensive models of organisational effectiveness (Burke & Litwin, 1992). The model does, however, focus on a transformational process perspective and only views effectiveness as an understanding of the change required to achieve future goals and not as a general system of functioning.

2.4.6 Burke-Litwin causal model

The Burke-Litwin model (Burke & Litwin, 1992) is considered by many theorists to go beyond the constraints that were already highlighted in the previous models through the incorporation of both transactional and transformational variables that enable an understanding of the internal functioning of the organisation, as well as its relationship to the external environment. The model is based on open systems theory and brings to the fore the critical evaluation of organisational culture as being central to the enablement of success. The model further distinguishes between culture and climate, which provides it with the ability to be relevant in terms of time and place by allowing for an understanding of the inherent value system in the organisation, as well as the current status quo regarding how the value system is being played out within the organisation. The model evaluates 12 elements of functioning as depicted by Figure 2.8 (Burke & Litwin, 1992).

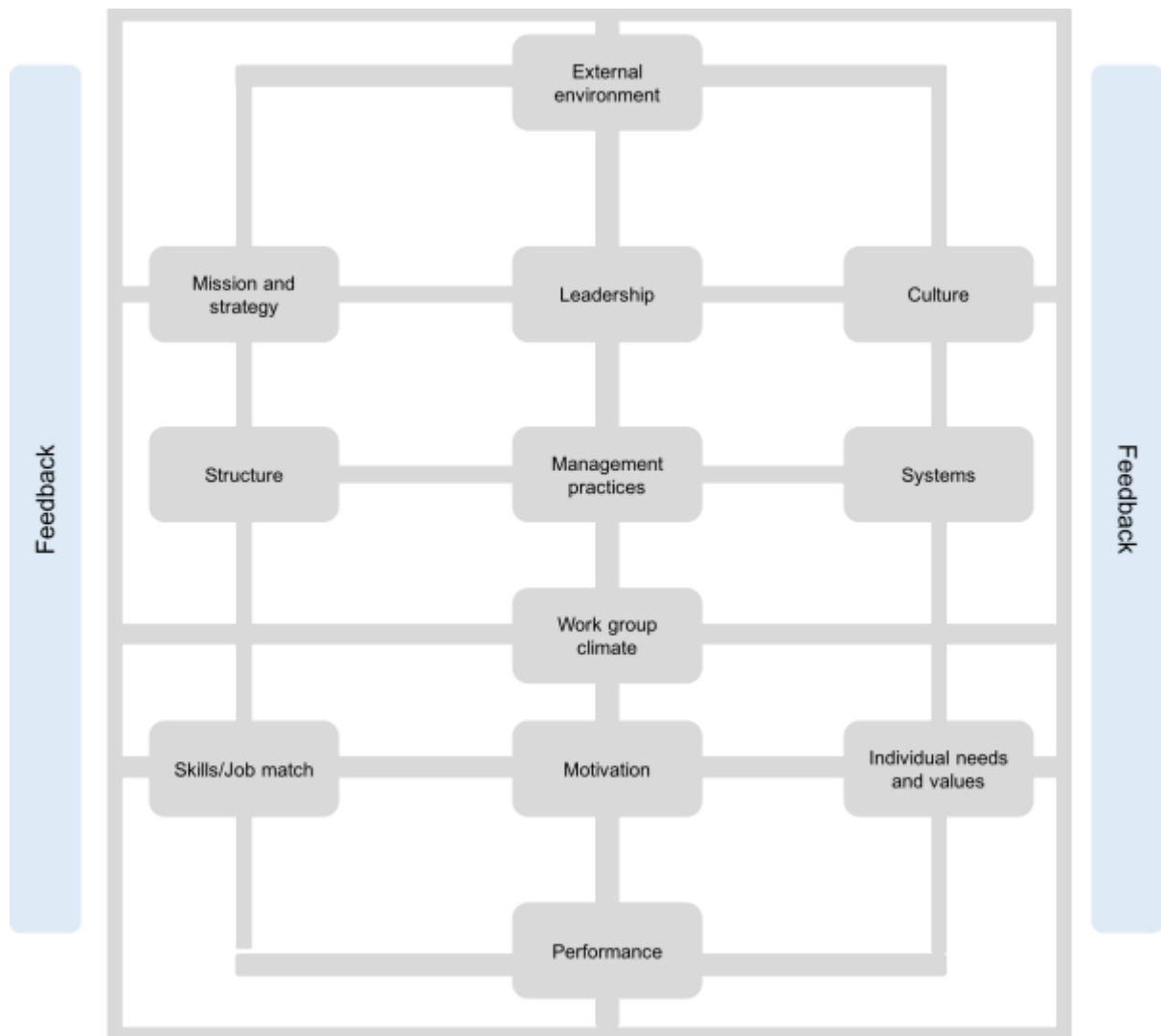


Figure 2.8. The Burke-Litwin model

The variables depicted in the Burke-Litwin model can be described in terms of their relationship to the transformational and transactional outcomes listed in Table 2.9. below.

Table 2.9.

Definition of the Model: Transformational and Transactional Outcomes

Variable	Description	Relationship to other variables	Empirical Study
External environment	Outside influencing forces that will have an impact on the organisation such as political, economic and social factors	Culture Mission and strategy	Prescott (1986)
Mission and Strategy	The means by which the organisation aims to achieve its purpose	Culture Leadership	Joyce and Slocum (1984)
Leadership	Executive behaviour that provides direction to followers and becomes a role model for the values of the organisation	Management Practices Performance	Smith, Carson, and Alexander (1984)
Culture	Collection of overt and covert norms that guide organisational behaviour; influenced by history and past conduct	Systems Policies	Rosenberg and Rosenstein (1980)
Management Practices	Management behaviours observed in the day-to-day functioning of the organisation	Climate	Schneider and Bowen (1985)
Structure	Organisation of functions in order to deliver the different elements of work required to achieve the mission of the organisation	Climate	Joyce and Slocum (1984)
Systems	Standardised policies and practices that influence decision-making, control and authority systems within the organisation	Structure Climate Culture	Joyce and Slocum (1984)
Climate	Collective feelings and expressions of work members that influence their attitude towards the organisation	Motivation Performance	Rosenberg and Rosenstein (1980)
Motivation	Aroused behavioural tendencies that move employees towards goal attainment	Performance	Belle (2013)
Skills/Job Match	Behaviour required for task effectiveness, including the knowledge and skills to complete required tasks	Motivation Performance	Schmidt and Hunter (1983)
Individual Needs and Values	Psychological factors that provide worth and meaning to individuals within the system	Motivation Performance	Guzzo, Jette, and Katzell (1985)
Performance	The outcomes or results associated with the inputs into the organisation	All above mentioned factors and references	

The major criticisms of the Burke-Litwin model (Burke, & Litwin, 1992) lie in its complexity, as well as the fact that from a usability perspective it does not provide a single view of the organisation that can be interpreted in practice without further exploration of the causal factors identified by the model (Lee, Chen, Powell, & Chu, 2014).

2.4.7 Veldsman's Model of Organisational Efficiency

Within the South African context, an adaptation of the Burke and Litwin (1992) model was conceptualised by Veldsman (2015), referred to as the Veldsman efficiency model. The model expanded on the original work of Burke and Litwin (1992) and incorporated factors discussed in the models by Leavitt, Lewin, Nadler-Tushman and the Weisbord six-box model (Veldsman, 2015). The main contribution of the model lies in the renewed focus on organisational values as a separate construct criterion, as well as the focus on the change adaptability of the organisational system (Veldsman, 2015). The model further differentiates between influencing factors (environmental, organisational history, driving forces, restraining forces); transformational processes (mission, strategy, purpose, leadership, change adaptability, values), transactional operational dimensions (structure, management practices, systems, policies, procedures, climate, skills and job match, individual psychological needs, motivation, rewards, recognition, facilities, equipment and technology) and performance outcomes (organisational, departmental and individual). The model adds to the existing literature with a deeper focus on internal behavioural systems of functioning in order to understand the inherent expectations in the psycho-social contract, as well as the ability of the organisation to have change agility in a turbulent environment. From an organisational effectiveness perspective, the main contribution of the model lies in the identification of behavioural levers that will influence organisational processes and practices that in turn will lead to performance at the different levels (Veldsman, 2015). The model contextualises organisational effectiveness as a culmination of all of these factors and proposes that performance is a result of an effective organisation assessed as such in line with the multivariate approach towards organisational effectiveness discussed earlier in this chapter. Table 2.10 below describes the different elements of the Veldsman efficiency model as well as the core factors.

Table 2.10.

The Veldsman Model of Efficiency

	System component	Description	Core factors/ phenomena
Influencing factors	Environmental influence	Factors that will have an influence on organisational performance and are not under the direct control of the organisation	Industry Competitors Market and global trends Legislative impact Resources
	Organisational history	Factors that have had an impact on the shaping and forming of the organisation to what it is today	Organisation profile
	Driving forces	Forces that are key areas of strength and competitive advantage for the organisation and can be leveraged to optimise organisational performance	Organisational strengths
	Restraining forces	Forces that are inhibiting the organisation from achieving its maximum potential	Developmental/renewal opportunities
Transformational factor	Mission, strategy and purpose (value proposition)	The motives and intent of the organisation which will influence the task-level activities related to the organisation	Strategic intent and market relevance Clarity Employee buy-in Goals and objectives
	Leadership	The influence and empowerment of organisational members to achieve the goals and direction of the organisation	Authenticity and credibility Leadership style Direction and guidance Leading and deciding
	Change adaptability	How adaptable and embracing the organisation is in terms of change, and the current level of maturity as it relates to change practices	Attitude towards change Change competence Resilience
	Values	The integrated patterns of behaviour that shape and reinforce the behavioural frameworks within the organisation	People energy, creativity and innovation Behavioural norms Value awareness Informal organisational practices



	System component	Description	Core factors/ phenomena
Transactional factors	Structure	The hierarchy and the reporting structure of the organisation	Span of control Effectiveness of structure Governance
	Management practices	The daily operational management practices and relationship between employees and their direct supervisors	Management style Span of control Support Feedback Communication
	Systems, policies, procedures and processes	The elements of the formal organisation that govern the daily operational components of how tasks get delivered	Processes Policies Systems Expectations
	Departmental climate	The current impressions, expectations and feelings that employees have about their immediate working environment	Stress levels Relationships Skill utilisation
	Skills and job match	The optimisation and fit for purpose of the human workforce of the organisation relevant to the strategy and performance output of the organisation	Skill development Skill-job fit Reward and recognition structure
	Motivation, rewards and recognition	The drivers of individual and team achievement as well as the reinforcement of desirable behaviours	Motivational mechanisms Employee well-being
	Individual psychological needs	Factors pertaining to the well-being and congruence of employee-organisational fit	Engagement and empowerment Organisational value fit Organisational support
	Working environment facilities	The physical work environment and infrastructure that exist	Work practices Technology Infrastructure
	Equipment and technology	The physical equipment available to the members of the organisation to do their jobs	Facilities



	System component	Description	Core factors/ phenomena
Outcomes	Organisational performance	Factors related to the performance output of the organisation in relation to its strategy, mission and purpose	Achievement of strategic goals/outcomes Return on investment and expectations Financial performance Retention of talent/intellectual & social capital Innovation and creativity Adaptability
	Departmental/team performance	Factors related to the performance of the individual business units or teams within the organisation	Achievement of departmental goals Financial performance Innovation and creativity
	Individual performance	Factors pertaining to the individual performance of employees	Contribution to organisational success Performance management Innovation and creativity

Source: Veldsman (2015)

Veldsman's efficiency model (2015) has been criticised because it does not differentiate between effectiveness and efficiency. This has been mentioned in the literature as a key challenge because the two constructs are different in nature (Martz, 2008). The complexity of the model has also been criticised in terms of its usability in practice.

2.4.8 Olivier's model of organisational effectiveness

Olivier (2015) developed the organisational effectiveness model with a specific focus on service-orientated organisations. The model is based on the premise of an open systems theoretical framework and postulates that three key systems determine the effectiveness of the organisation:

- Healthy Systems – measured in terms of the health of various subsystems in the organisation (diversity, training and development, rewards and recognition, management practices, internal functioning, work environment, internal relations and workforce equity)
- Goal Achievement (vision and mission)
- Service Delivery (customer satisfaction)

The model incorporates both an internal functioning process perspective and a defined outcome-based approach. The model builds on the current models and theories discussed in this chapter and adds a critical component of customer satisfaction as key performance output. As is evident in the knowledge economy, the changing nature of the consumer demands a re-evaluation of effectiveness criteria, with customer needs and requirements often becoming the driving force behind organisational effectiveness needs. This model has been criticised for its inability to factor in influencing factors that will have an impact on whether the systems of the organisation are healthy or not, as well as the lack of attention to the interrelatedness of the various concepts.

2.4.9 Summary

In summary, various diagnostic models of organisational effectiveness exist. It is important to note that with the rise of the knowledge economy, the inclusion of human capital-related factors, as well as the external environment as an influencing factor, in understanding organisational effectiveness has become the norm. Organisational effectiveness models have undergone an evolution in the workplace that they aim to understand, and have broadened the scope of the factors that constitute effectiveness. This is evident in the shift towards the inclusion of behaviour-based factors to understand effectiveness, the

broadening environmental context, as well as the inclusion of both antecedents and indicators of effectiveness.

The discussion on the various organisational effectiveness models has brought about the following insights that need to be taken into account when understanding organisational effectiveness within the context of the knowledge economy organisation:

- *Insight 1:* open systems theory as the foundational premise that influences organisational effectiveness
- *Insight 2:* the need for an internal process perspective of organisational functioning that is influenced by the external environmental factors that affect the expectations of multiple stakeholders regarding organisational outputs
- *Insight 3:* the dynamic nature of the environment that will force organisational systems to become nimble and agile, establishing criteria for effectiveness that will forever be changing based on context, time and relevance to the market
- *Insight 4:* a clear relationship exists between organisational effectiveness and performance but the definition of performance criteria could be ever-changing depending on time, context and objectives
- *Insight 5:* the rise of human capital resources as a critical component that will determine the ability of the organisation to be effective and perform, yet limited focus is provided in terms of the elements that influence the behavioural systems within the organisation.

Although the models discussed refer to elements related to organisational effectiveness, the models do not reflect an extensive understanding of the drivers of human behaviour that would contribute to an effective organisational system. The models above reference the behavioural dimension as follows:

- Leavitt (1965) refers only to people as a subsystem within the organisation.
- Likert (1967) describes motivation and control as behavioural systems within the internal organisation.
- Burke-Litwin (1992) acknowledges culture, motivation and individual needs and values as key components of organisational effectiveness.
- Veldsman (2015) refers to values, climate, motivation and individual psychological needs.

Given this context, a clear gap becomes visible in the research regarding the understanding of the elements that form the underlying behavioural systems existing in the organisation.

These will influence the effectiveness of human capital as a key contributor to organisational effectiveness and, by implication, business performance.

2.5 PEOPLE EFFECTIVENESS AS AN ELEMENT OF ORGANISATIONAL EFFECTIVENESS

The knowledge economy has brought about a renewed focus on the importance of people effectiveness as an element of competitive advantage for the organisation (Hussain & Murthy, 2013). As discussed in the previous section, the definition of organisational effectiveness and the relevant measurement landscape have also evolved over time to incorporate elements that refer to people effectiveness and its positioning as a critical component of enabling an effective organisational system (Catalino & Frederickson, 2011). With the rise of the knowledge economy, the literature has started to focus on human capital as an underpinning criterion for effectiveness and has explored the underlying behavioural constructs that drive human capital in the organisation (Nienaber & Martins, 2016). The relationship between factors such as motivation, commitment, employee performance and teamwork has been well researched in terms of their relationship with organisational effectiveness (Sanjo & Adeniyi, 2012). A lack of these factors or the absence of certain hygiene factors within the work environment can lead to a workforce that is demotivated, which will impact negatively on levels of organisational effectiveness. Basak, Ekmekci, Bayram, and Bas (2013) further state that factors such as intention to leave are heavily influenced by the perception of support received from the organisation, levels of experienced job stress, as well as the levels of job satisfaction that exist. Trust in leadership and the perceived support obtained from leaders have also been discussed as a key factor influencing the effectiveness of employees and their ability to perform (Bedarkar & Pandita, 2014).

Mafini and Pooe (2013) state that organisations should measure the underpinning psychological factors that will influence employee commitment, engagement and motivation as part of understanding what will drive individual and organisational performance. The concepts of psychological attachment and engagement have come to the fore as organisations are aiming to build engaging cultures that provide a sense of purpose and identity to the individuals who form part of them. Filipkowski (2013) states that improving the levels of psychological attachment and engagement within the organisation will lead to higher levels of performance and has thus become a strategic priority for business leaders in enabling human capital as a key contributor within the organisational value chain.

Coetzee and Veldsman (2013) state that the levels of psychological attachment and the link with people effectiveness enabling factors that influence employees' psychological attachment within the organisation can be referred to as psychological work immersion; this is a key indicator of people effectiveness within the organisation. Psychological work immersion can be defined as a deep state of physical, emotional and cognitive identification with the work experience within a particular social cultural context that flows from positive perceptions of people effectiveness enablers (Veldsman, 2013). The term builds on the current literature on work engagement (Coetzer & Rothmann, 2007), employee engagement (Kahn, 1990), employee identification (Bothma & Roodt, 2013) and flow (Csikszentmihalyi, 1990), with all of these concepts showcasing a positive relationship with organisational commitment, job satisfaction and low turnover intention (Schaufeli & Bakker, 2004). When employees are fully immersed in their work and working context, they experience a sense of intrinsic motivation and a heightened sense of commitment, and they bring a positive psychological presence to the work environment which is conducive to the fostering of a performance-driven culture (Veldsman & Coetzee, 2014). Employees who are psychologically immersed in the work and the organisation tend to work harder and achieve more owing to the levels of experienced motivation, as well as the passion that draws them towards goal achievement and the satisfaction that goes with the successful contribution towards personal and organisational goals. For this state to occur, the organisation has to create an environment that is conducive to producing and enabling this state. Research has shown that employees' psychological work immersion is influenced by organisational and individual factors recognised as enablers of employees' performance and psychological attachment, such as manager credibility, performance feedback, strategic alignment, an enabling work environment, employee motivation and commitment (Veldsman, 2013; Veldsman & Coetzee, 2014). People effectiveness enablers have become critical criteria that will influence the perceived levels of psychological work immersion in the organisation.

Table 2.11 provides Nienaber and Martins's (2016) summary of the main influencing theories on work engagement that serve as the basis for the theoretical framework that underpins psychological work immersion and people effectiveness enablers. From an organisational point of view, the benefits experienced in terms of lower turnover intention, lower levels of absenteeism, increased productivity and higher profits have made psychological work immersion and work engagement key areas of interest for business leaders and organisational scholars in the field of organisational effectiveness and performance (Field & Buitendach, 2011; Jacobs, Renard, & Snelgar, 2014; Mendes & Stander, 2011; Nasomboon, 2014). Currently, however, the ability to empirically measure psychological work immersion and its relationship to business performance still need to be further explored to showcase

the relevance of the model as a measure of organisational effectiveness within the knowledge economy environment.

Table 2.11.

Theories and Approaches to Work Engagement

Approach	Influential theorist	Premise	Impact on human capital factors
Needs-satisfying approach	Kahn (1990)	Individual expression of self within work	Meaningfulness Safety Psychological availability
Burnout antithesis approaches	Rothmann (2014)	Engagement as opposite of burnout	Energy Involvement
	Maslach, Schaufeli and Leiter (2001)	Positive work-fulfilling experience	Efficacy Absorption Dedication
Satisfaction-engagement approach	Harter et al. (2002)	Individual involvement and enthusiasm in work activities	Commitment Willingness
Multidimensional approach	Saks (2006)	Cognitive, behavioural and emotional construct that impacts performance	Job engagement Organisational engagement
Tri-dimensional framework	Macey and Schneider (2008)	State, trait and behavioural engagement	Satisfaction Involvement Commitment Conscientiousness Proactiveness Trust

Source: Nienaber & Martins's (2016)

To date, measures related to people effectiveness have largely been based on a reactive perspective that measured past or current events. As stated by Bersin (2015), for people practitioners to contribute to the knowledge economy organisation, a revised measurement of people effectiveness is required that can enter the realm of predictive analytics. For human resource functions to be able to remain at the executive table, people effectiveness practitioners need to be able to measure and showcase the value-add of people effectiveness interventions in terms of return on investment, as well as future benefit realisation based on organisational investment in improving people effectiveness enablers in the organisation (Mercer, 2015). Failure to do so will forever create the perception of the human resource function as one that is focused on compliance as opposed to a strategic role player that can enable and unlock the biggest asset that the organisation possesses in the knowledge economy – human capital (Rigby, 2015).

In conclusion, the literature indicates that organisational effectiveness has become a critical enabler of business performance in the knowledge economy if approached within the context of a systems-based approach that interacts and evolves with the environment within which it operates. As a key component of organisational effectiveness from an internal point of view, the contribution of human capital in a knowledge-based economy has become a critical success factor in understanding the underpinning behavioural system that will enable an effective workforce able to deliver on the goals of the organisation. There is, however, a need to develop the ability to measure people effectiveness outcomes effectively in terms of psychological work immersion and the enabling factors that will drive people effectiveness in the organisation from both a current and a predictive perspective. Figure 2.9 summarises the concepts discussed and articulates a process-driven view of organisational effectiveness within the context of the external environment and its relationship with business performance.

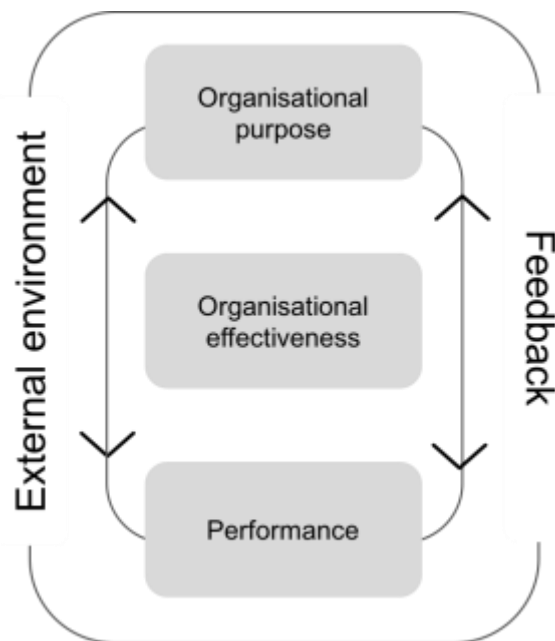


Figure 2.9. Organisational effectiveness and business performance: external environment

The organisational purpose within the context of the external environment will define the identity of who the organisation wants to become as well as the core objective and outcome of the organisation. The purpose will influence the approach to how effectiveness is perceived in the organisation with reference to transformational elements (e.g. vision, mission, strategy and values), transactional elements (e.g. structure, process, systems) and human capital enablers (e.g. psychological work immersion, commitment, willingness, motivation) in order to enable individual and organisational performance which will be measured by traditional (e.g. financial, operational, productivity) and new world order measures (e.g. ability to innovate, speed to market, changeability). These components

provide the organisational system with continuous feedback, thus rendering the criteria fluid over time, depending on the changing nature of the external environment.

Although various diagnostic models of and approaches to organisational effectiveness exist and the literature clearly stipulates the importance of including people effectiveness enablers that will lead to individual performance, the measurement of concepts such as psychological work immersion has received limited attention. For the practical application and understanding of the human capital contribution to organisational effectiveness in the model depicted above, more thorough research is required not only into the concept of psychological work immersion but also the underlying factors that will create an environment that is conducive to individual performance. The factors mentioned above, termed “people effectiveness enablers” by Veldsman (2013) and Coetzee and Veldsman (2013), need further exploration in order to define a practical, valid and reliable measurement framework for quantifying the people effectiveness contribution to organisational effectiveness and its usefulness as a predictive measure of business performance.

2.6 ORGANISATIONAL SETTING: FACTORS INFLUENCING ORGANISATIONAL EFFECTIVENESS AND BUSINESS PERFORMANCE

The purpose of the research was to validate the measurement of psychological work immersion and its impact on business performance within a not-for-profit organisation in South Africa at two stipulated points in time. The research was intended to evaluate whether a relationship exists between psychological work immersion levels as a component of organisational effectiveness and perceptions of business performance. The research approach measured the construct at two defined points over a 14-month period to understand whether the implementation of interventions intended to improve the people effectiveness enablers in the organisation had resulted in any improvement in the experienced levels of psychological work immersion and ultimately business performance.

This section will briefly provide an overview of the not-for-profit sector in South Africa in order to contextualise the organisational setting and then provide a brief overview of the organisational context within which the study was conducted.

2.6.1 A brief overview of the not-for-profit sector within South Africa

Lehohla (2015) reported that in 2014 there were 127 032 non-profit organisations in South Africa. The South African environment has a lively non-profit sector owing to the diverse society as well as the regime of the past which led to a society characterised by inequalities. A not-for-profit organisation can be defined as an organisation that does not operate for the

profit or gain of its individual members even though profit could still be generated (Luckert, 2015). This definition highlights that the main difference between profit and not-for-profit organisations lies in the motivation that leads to the establishment and core purpose of the organisation (Cornforth, 2003). A profit-driven organisation will have a key focus on the achievement of goals in order to relate to financial outcomes, whilst a not-for-profit organisation intends to generate revenue in order to survive but not as a main focus or goal. The goal of a not-for-profit organisation rather lies in the organisation's contribution to the society or community in which it operates.

Globally, a democratic vacuum has developed as a result of the unrelenting withdrawal of governmental structures in key service sectors owing to either a lack of funding and resources or inefficiencies that exist in the public sector (Powell & Steinberg, 2006). In developing countries in particular, a strong focus on economic agendas has enhanced this democratic vacuum, as governmental structures focus predominantly on growing the economy, as evidenced by the Growth, Employment and Redistribution (GEAR) macroeconomic strategies adopted by South Africa post the apartheid era (Jankelowitz, 2007). This vacuum has led to the creation of various not-for-profit entities that are fulfilling key functions that would traditionally have been fulfilled by government (Holloway, 2013).

The main challenge that non-profit organisations face in South Africa can be described in terms of the ability to generate funding through either private or public sector initiatives (Jankelowitz, 2007). In a time that calls for more accountability in both profit and not-for-profit institutions, not-for-profit institutions are challenged to be able to display transparency in their actions whilst still remaining relevant to the poor communities they serve (Mueller-Hirth, 2012). Access to funding has also become a critical challenge for non-profit organisations (NPOs), as corporate social investment funding from the private sector has dried up, which has led more non-governmental organisations (NGOs) to seek government funding (Francis & Talansky, 2013). This has increased the levels of competition in obtaining funding from government institutions and also poses challenges regarding the impartiality of NPOs. This concern relates to the ability of NPOs to serve according to their main purpose as opposed to driving a political agenda that becomes more like the parties from which they receive funding as opposed to the parties that they intend to serve (Jankelowitz, 2007).

Currently, within the South African context, two categories of not-for-profit organisations exist (Carr & MacLachlan, 2014). The first category focuses on advocacy in terms of a defined cause such as human rights, environmental concerns or human trafficking. The second category focuses on providing social services to a specifically defined target market, for example the elderly, the youth or specific rural areas, focusing on a variety of services such

as nutritional programmes, youth development and workplace skills development. Within the South African context, the need for organisations that drive a developmental agenda has become increasingly more important because of the large unemployment rate and the lack of infrastructure to provide developmental services to the youth in order to develop and prepare individuals for the workplace (Patel, 2014). Traditional schooling systems are not comprehensive or accessible enough to provide sufficient developmental opportunities to the youth of South Africa, particularly in the rural areas of South Africa which lack infrastructure and the required funding to implement these programmes.

In summary, the not-for profit sector in South Africa plays a critical role in making a social impact in the knowledge economy. The sector provides services that are currently not being provided by the public sector and as such play a critical role in ensuring the livelihood and the provision of basic services required for survival by numerous South African citizens.

2.6.2 Performance and effectiveness in not-for-profit organisations

Currently, non-profit organisations (NPOs) are challenged by the public perception that they are managed in an ineffective and inefficient manner (Lecy, Schmitz, & Swedlund, 2011). This perception has been created as a result of negative criticism received from both the general media and government as to how funding is applied and spent and their inability to operate according to the stipulated criteria that are required in order to receive ongoing funding. Owing to the current perceptions that guide and govern the NPO sector, the issue of performance and effectiveness has come to the fore (Lecy et al., 2011). Although NPOs' main objective is not profit, a need for focused governance and transparency has called for the organisation to be able to demonstrate the impact of its operations, carried out with received funding, in an attempt to gain donor confidence (Herzlinger, 1995). Donor confidence is a key metric that will enable the NPO to sustain itself amidst an increasingly competitive funding environment and to showcase the social impact that the organisation is able to make in terms of its core purpose (Rinker, 2012). Organisational effectiveness, generally associated only with profit-generating entities, has become a top agenda for NPOs in their quest to show how donor funding and investment have been applied, their impact on society and also how funds have been governed and spent. Traditional business measures such as cost reduction, quality and service delivery have entered the NPO environment and have become critical metrics to be considered when evaluating the sustainability of the NPO into the future (Lecy et al., 2011).

The organisation that is a part of this study is an NPO services organisation that focuses on youth development within the South African context. The organisation was established with

the sole purpose of enabling a cradle-to-career approach to youth development and enabling a multidisciplinary approach to equipping the youth of South Africa for entering the workforce as prepared individuals who can contribute to both society and the economic environment. The organisation operates in various rural areas with the majority of its permanent staff complement being based in Gauteng and the Western Cape. From an operations perspective, the organisation is dependent on donor funding from a combination of governmental and private sources and, accordingly, brand reputation has become a critical factor for the organisation. The organisation was restructured in 2012 with the objective of attaining a more effective and efficient organisational model that would lead to a reduction in head count and the streamlining of operations across all community centres where the organisation is located.

This research study aimed to measure the levels of psychological work immersion as an element of organisational effectiveness during time period 1 in order to understand the relationship between psychological work immersion and business performance. Over a period of 14 months various organisational development interventions were applied by targeting key people effectiveness enablers relevant to psychological work immersion in an attempt to improve the level of psychological work immersion in the organisation. Subsequently, a second measure of psychological work immersion was conducted in the organisation, following the intervention process, in order to understand whether the interventions had improved the levels of psychological work immersion and whether this improvement had any significant impact on business performance.

2.7 IMPLICATIONS OF THE STUDY FOR ORGANISATIONAL DEVELOPMENT PRACTICES

Traditionally, organisational development practices have been focused on the profit-generating organisational domain. With the rise of humanitarian work psychology, however, organisational development practitioners have been challenged in terms of their contribution to the society outside the traditional profit sector. Humanitarian work psychology can be defined as the application of industrial and organisational psychological principles to humanitarian issues such as those defined by the Millennium Goals articulated by the United Nations (Carr & MacLachlan, 2014). However, the field also challenges organisational development practitioners regarding the contribution to the non-profit organisational system in terms of ensuring the effective functioning of non-profit organisations as this has been mentioned as a critical success factor for the sustainability of the organisation in terms of access to funds, donor confidence and reputational integrity (Anheier, 2014). The knowledge, methods and scientific models of organisational development should be applied

by practitioners to the NPO system in order to ensure an aligned and effective organisation that achieves the articulated vision statement and goals that led to the creation of the organisation. With the rising void of service delivery and access to developmental services, specifically in youth development, the role of NPOs has never been more significant for ensuring a sustainable and enabled workforce of the future within the South African context (Manuel, 2013).

From an organisational development perspective, the need for a measurement framework that can demonstrate a practical return on investment related to resources spent on interventions to improve the organisational system and the ability to quantify this in terms of business performance have become a necessity (Fowler, 2013). The capital spent on people initiatives in such organisations has come under scrutiny, as a lack of financial resources has resulted in an increased expectation for organisational development practitioners both to show return on investment and to commit to the improvement of business performance through organisational effectiveness interventions. Theoretical models of improved business value are no longer sufficient in the knowledge economy organisation, which is ever-changing and based on the premise that human capital is the key to unlocking competitive advantage (Stegerean et al., 2010).

2.8 EVALUATION AND SYNTHESIS

Organisational effectiveness is a multifaceted construct that has gained even more relevance within the knowledge economy environment as a result of the ever-changing nature of the working environment. No one definition of organisational effectiveness exists and as such a complementary approach is required in order to understand that different models and approaches contribute unique elements towards the construct. Consensus may, however, be reached on the fact that organisational effectiveness is closely linked with the environment within which it operates, business performance as a key output and internal criteria or processes that will determine the effectiveness of the organisational processes, systems and people. Traditional criteria of organisational effectiveness and business performance, such as financial indicators, have provided a one-sided view of organisational performance and thus the scope of the criteria that define the effective outputs of the organisation in terms of performance needs to be enhanced to increase factors such as changeability, speed to market, innovation and human capital effectiveness. Human capital, as a key contributor to organisational effectiveness, has become extremely relevant in the knowledge economy, as the ability for knowledge to be translated into explicit knowledge has become a source of competitive advantage for organisations. Consequently,

psychological attachment, work immersion and engagement have become key indicators of people effectiveness in the knowledge economy and as such the research literature has indicated an increased focus on constructs such as commitment, willingness, employee satisfaction and trust. From a business perspective, the impact of these constructs has shown a strong relationship with business performance, either directly in terms of factors such as profitability or indirectly through factors such as a decrease in absenteeism and turnover intention and increases in productivity. The measurement of people effectiveness still requires further research, however. Empirical validation of the impact of improving people effectiveness on business performance also needs to be done.

2.9 CHAPTER SUMMARY

This chapter critically reflected on the definition and evolution of the concept of organisational effectiveness within the context of the ever-changing knowledge economy. The chapter reviewed the current literature on organisational effectiveness, as well as both the approaches and models that are applied to define the concept. The chapter identified that a complementary stance or approach to organisational effectiveness is required in order to ensure its relevance within the knowledge economy environment. This stance holds that all models of organisational effectiveness add some form or element to our understanding of the concept and as such should be applied in terms of their relevance to time and place. The importance of the external environment and the open systems perspective of organisations was highlighted, as these are key contributors to understanding organisational effectiveness and its relationship to performance. The chapter explored organisational effectiveness and determined that with the rise of the knowledge economy, if sustainable success is to be achieved it is crucial to unlock the human capital value in the organisation. The factors underpinning people effectiveness were explored and it was deduced that factors such as psychological work immersion, commitment, motivation and work engagement have become important concepts for understanding the levels of effectiveness related to people practices in knowledge economy organisations.

The chapter further explored the not-for-profit sector and positioned the rising need for practices to enable organisations to function effectively as critical service providers in this sector. The chapter also presented the contextual environment within which the research was conducted and its relevance within the broader domain of industrial psychology with a specific focus on organisational development practices.

This chapter discussed the first literature research aim applicable to this study by conceptualising organisational effectiveness and positioning the concept in relation to people

effectiveness and business performance. Chapter 3 will focus on conceptualising psychological work immersion as an indicator of people effectiveness and explore the relationship between psychological work immersion and business performance. The chapter will conclude by discussing the implications of organisational development practices in the modern knowledge economy workforce.

CHAPTER 3: THE PSYCHOLOGICAL WORK IMMERSION SCALE AS A PREDICTOR OF BUSINESS PERFORMANCE

This chapter focuses on addressing the literature research aims in relation to the context of this research. Firstly, the chapter aims to conceptualise the Psychological Work Immersion Scale (PWIS) (Veldsman, 2013) in terms of the underlying theory and constructs that inform the scale. The chapter will describe the PWIS (Veldsman, 2013) within the context of knowledge economy organisations in order to understand the relevance of the scale within the domain of organisational development practices. The chapter explores the psychometric properties of the PWIS (Veldsman, 2013) and will conclude with an overview of the applicability of the scale in identifying relevant interventions aimed at improving psychological work immersion in the organisational development domain. The chapter will conclude by reflecting on the implications for organisational development practices in relation to the usefulness and applicability of the PWIS (Veldsman, 2013) as a predictor of business performance.

3.1 CONCEPTUALISATION

The following section will position the PWIS (Veldsman, 2013) by, firstly, providing context for the concept of psychological work immersion, defining the underpinning constructs that inform the concept and evaluating its relevance as a measure of people effectiveness in the knowledge economy.

3.1.1 Defining the concept of psychological work immersion

Psychological work immersion is defined by Coetzee and Veldsman (2013) as a deep state of physical, emotional and cognitive identification with the work experience within a particular social cultural context that flows from positive perceptions of people effectiveness enablers. Psychological work immersion can be distinguished from other concepts such as job involvement, work engagement and flow by the focus on psychological presence that forms part of the construct. Kahn (1990, 1992) describes psychological presence as a feeling of being connected, fully attentive and focused in terms of an individual's work role. Veldsman (2013) builds on the concept of psychological presence, stating that the individual should not only draw upon his/her inner self in order to express their thoughts and feelings in terms of their job roles, but that the socio-cultural context should also play a role in fostering psychological attachment or engagement to the organisation and not just the task itself. People effectiveness enablers such as manager effectiveness, appreciative feedback, intra-team relations and individual congruence are important socio-cultural factors that influence

individuals' level of psychological attachment or engagement. This perspective builds on theories such as work engagement (Kahn 1990), flow (Csíkszentmihályi, 1990) and the job resources and demand theories conceptualised by Demerouti (1999) and adapted by Schaufeli and Bakker (2004). Psychological work immersion allows for the channelling of energy as influence by socio-cultural (people) performance enablers from an individual into physical, cognitive and emotional labours within a particular setting at a particular time, and further refers to the cognitive and emotional attachment that the individual experiences with regard to the identity of the organisation. This perspective positions psychological work immersion as a state of connection to the organisation, the individual contribution to the organisational purpose within a particular context and a deep involvement in the individual job role and task. Given the changing nature of the knowledge economy work environment, psychological work immersion is able to describe the connection that individual employees have to the organisational identity, which transcends the requirement for a physical presence in a particular work environment. Through this broader approach, psychological work immersion encapsulates the requirements of a knowledge economy workplace that is characterised by a diversified workforce, virtual teams and geographical distribution, by positioning the state of work immersion not just in terms of the psychological presence of the self but also in terms of the attachment with and to the broader organisational purpose (Coetzee & Veldsman, 2013).

3.1.2 Measurement of psychological work immersion

Psychological work immersion is influenced by the relationship between people effectiveness enablers (manager effectiveness, individual congruence, strategic connection, appreciative feedback, enabling environment, intra-team effectiveness) as independent variables (antecedent) and psychological attachment (commitment, absorption, and employee motivation) as the consequence (dependent variable). The PWIS (Veldsman, 2013) measures the measures psychological work immersion as a meta-domain construct that encapsulates the presence of people effectiveness enablers (manager effectiveness, individual congruence, strategic connection, appreciative feedback, enabling environment, intra-team effectiveness) and psychological attachment (commitment, absorption and employee motivation).

The scale further provides an opportunity to evaluate the whether the link between people effectiveness enablers and perception of business performance is significantly mediated by a sense of psychological attachment. The scale also enables the identification of organisational development interventions aimed at improving people effectiveness enablers at an organisational, team and individual level in order to influence the levels of

psychological attachment which will, in turn, have an impact on perception of business performance. Figure 3.1 provides a conceptual overview of the model:

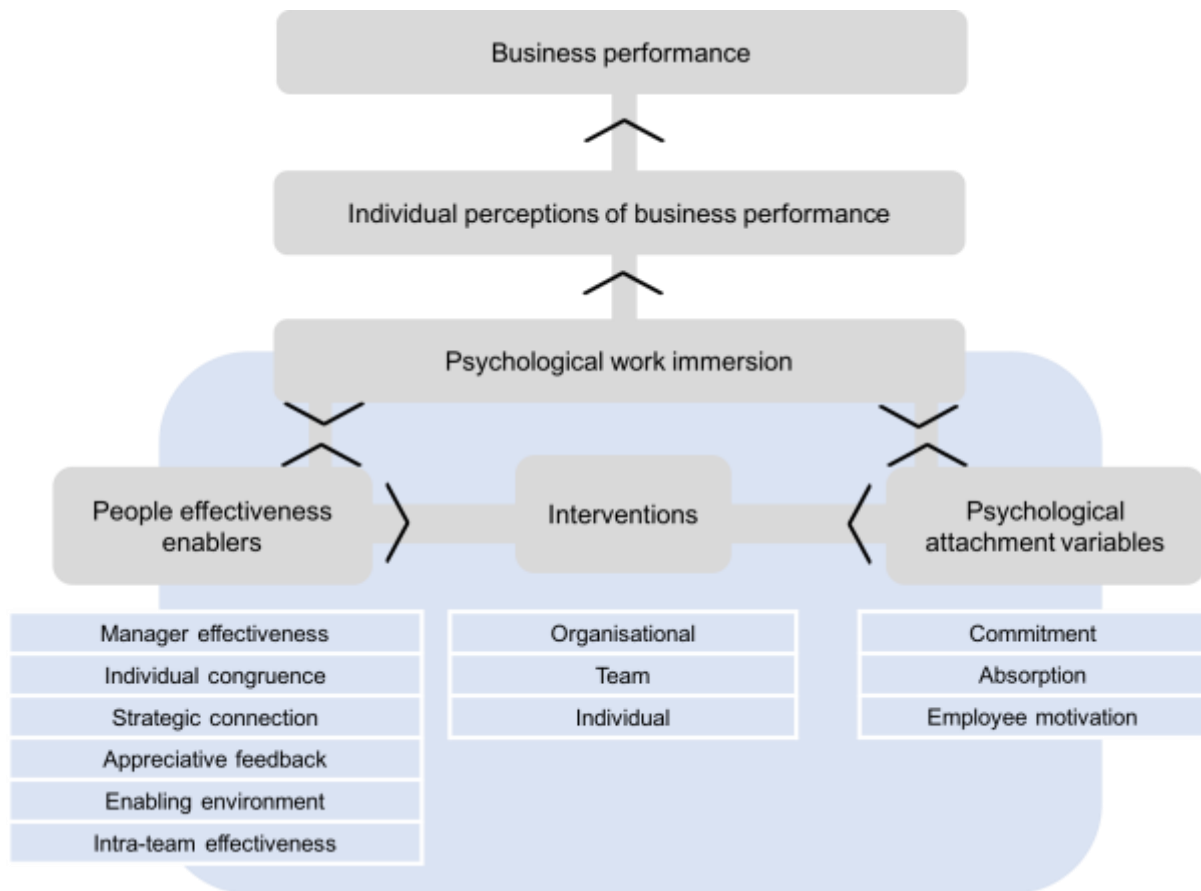


Figure 3.1. The conceptual model of psychological work immersion

The following section will describe each of the components that underpin the PWIS (Veldsman, 2013) in terms of people effectiveness enablers (manager effectiveness, individual congruence, strategic connection, appreciative feedback, enabling environment, intra-team effectiveness) and psychological attachment (commitment, absorption and employee motivation) in terms of its definition and applicability to the knowledge economy workplace.

3.1.2.1 *People effectiveness enablers*

People effectiveness enablers can be described in terms of the psychological behavioural state of attachment to overall business performance resulting from the employee's emotional-cognitive identification with or psychological attachment to the work and the organisation (Veldsman, 2013). A number of constructs have been identified that will influence this particular state and these should be seen as drivers of organisational effectiveness from a people perspective within the organisation. From an organisational development perspective, these drivers should be used as a key focus in terms of

interventions aimed at improving organisational effectiveness owing to their influence on psychological attachment variables (Coetzee & Veldsman, 2013).

Manager effectiveness relates to the extent to which managerial practices are perceived as fair, respectful and consistent, which creates a relationship of trust between employees and their direct managers (Veldsman & Coetzee, 2014). The concept further refers to the ability of managers to connect employees to the organisational purpose from a psychological point of view, which in turn influences the experienced levels of psychological attachment that the employee has to the organisational identity. Research has shown that a trusting relationship between managers and employees has implications for job performance, talent turnover intention, retention, job satisfaction and organisational citizenship (Roussin & Webber, 2012). Employee perceptions are shaped by the way they are treated by their managers, which in turn influences the organisational climate and culture and sets the tone for creating a psychologically safe environment where employees can flourish (Jiang, Lin, & Lin, 2010).

Individual congruence relates to the perception of the employee that there is a fit between their strengths, competencies and skills and the requirements of the job, as articulated in their day-to-day roles (Veldsman & Coetzee, 2014). The construct has shown a strong relationship with factors such as positive work experiences, feelings of significance and the ability to master personal goals and objectives (Swann, Crust, Keegan, Piggott, & Hemmings, 2015). Individual congruence has also shown a relationship with goal-achievement, experienced levels of commitment and motivation within the organisational context and is often seen as a key contributing factor to experienced levels of work engagement (Tims, Bakker, Derks, & Van Rhenen, 2013).

Strategic connection refers to the connection between individual contribution and broader organisational goal achievement and is underpinned by enabling employees to feel that they are making a significant contribution to the organisation (Veldsman & Coetzee, 2014). Strategic connection is crucial for enabling psychological identification with the work environment, as well as a key influencing factor in terms of employee motivation and commitment (Barrick, Thurgood, Smith, & Courtright, 2015). Organisational performance, goal achievement and task significance have all been related to the concept of strategic connection (Armstrong & Taylor, 2014). In the modern knowledge economy, with its ever-changing organisational landscape, the concept of strategic connection has become increasingly important not just because of its traditional purpose of creating line of sight towards organisational goals but also for the creation of psychological identification in terms of the purpose of the organisation, which stretches far wider than just vision and mission statements (Veldsman, 2011). Strategic connection creates a link between the individual

work role and the organisational purpose and, as such, creates an avenue for employees to create meaning in terms of their contribution. This leads to feelings of self-efficacy, work engagement and flow (Albrecht, Bakker, Gruman, Macey, & Saks, 2015).

Appreciative feedback refers to the perceived meaningfulness of employee feedback related to individual performance and areas of strength (Veldsman & Coetzee, 2014). Appreciative feedback shows a clear relationship to enhanced employee self-efficacy, motivation and the prevalence of problem-solving behaviour (Jordan & Audia, 2012). Appreciative feedback has been shown to have a clear influence on employee commitment, experienced feelings of significance and the ability for employees to grow and develop (Shahid & Azhar, 2013). From a performance perspective, appreciative feedback also relates to the perceived effectiveness of processes, such as performance feedback, and is a clear influencing factor for whether employees feel that they can grow and develop in the organisation (Mone & London, 2014). The construct of appreciation refers to far more than just tangible rewards, also encompassing the intangible perceived benefits that employees obtain in exchange for their contributions to and membership of the organisation. Recent research conducted by Mone and London (2014) found that feelings of appreciation lead to higher psychological identification with the organisation and its purpose and result in higher levels of productivity.

An enabling environment refers to the extent that the employee perceives the policies, procedures and physical work environment helpful in achieving organisational goals (Veldsman & Coetzee, 2014). Within the modern knowledge economy, the rise of virtual work teams, distributed geographical models and fluid organisational designs and practices have introduced this concept as a key contributing factor to employees' connection with the organisation and its ability to remain relevant in the modern world of work (Iorio & Taylor, 2014). Flexible work practices, often in contrast to traditional organisational policies, have demanded a shift in how working environments are governed and managed in order to allow innovative ways of enabling employees to work (Lohikoski, Kujala, Haapasalo, Aaltonen & Ala-Mursula, 2016). With the millennial generation entering the workforce, traditional hierarchical and policy-driven structures and practices are frequently irrelevant and outdated (Veldsman, 2015). The modern knowledge economy therefore has key implications for workplace design and has called for a shift from traditional command-and-control management principles to a focus on issues such as collaboration, shared working spaces and innovation hubs (Richmond, 2015). The enabling environment also refers to the perception of safety within the physical environment and has key implications for how and where organisations are located, where employees are based and how workplaces are governed.

The concept of teams has become a prominent feature of knowledge economy organisations (McGurrin, 2015). Intra-team effectiveness refers to the perception of the individual in terms of the competence of their team members, how team members treat each other in terms of the principles of dignity and respect and whether they feel supported by their team members to be able to achieve organisational goals (Veldsman & Coetzee, 2014). Current research on teams has shown that perceptions of competence will influence the openness of individuals to collaborate, trust one another and work together in a productive and effective manner (Du, Shin, & Choi, 2015). Dignity and respect have been highlighted as the basis of a trusting team relationship; however, these behaviours are only built up over time as a result of perceived competence between team members, team benevolence and integrity in their dealings with one another (Prooijen & Ellemers, 2015). The knowledge economy has broadened the concept of teams in the virtual workplace, with team members often not interacting face to face with one another at all, yet being expected to work together in a way that drives organisational performance (Gilson, Maynard, Young, Vairtainen, & Hakonen, 2014). Rothmann (2014) states that positive team interactions can lead to stronger psychological identification with the workplace, commitment to other team members and loyalty towards the organisation.

The people effectiveness enablers as antecedents of engagement will influence psychological attachment in terms of the levels of commitment, absorption and employee motivation present in the organisation (Veldsman & Coetzee, 2014). The following section will discuss the psychological attachment construct as a consequence of the people effectiveness enablers and its relationship to the broader psychological work immersion concept.

3.1.2.2 *Psychological attachment*

Psychological attachment as a measure of engagement refers to the variables that influence the levels of psychological work immersion. Commitment, absorption and employee motivation have been identified as three consequences of positive perceptions of people effectiveness enablers and can be seen as a measure of the perceived levels of psychological work immersion that are present in the organisation (Veldsman & Coetzee, 2014).

The commitment construct refers to the extent that the individual identifies with the organisational purpose and the underlying value system present within the organisation (Veldsman & Coetzee, 2014). Oyewobi et al. (2012) state that commitment entails a readiness to exert effort to achieve organisational goals and a drive to remain associated and retain membership of the collective organisation. The construct of commitment has

been associated with various organisational criteria such as showing a strong relationship with talent turnover, retention and productivity measures which makes it a relevant construct within the context of organisational effectiveness measures (Dhar, 2012). Commitment also implies an alignment of the individual to the organisational value system and an identification with the organisational identity. This has been shown to lead to low turnover intention and loyalty towards the organisation (Aggarwal & D'Souza, 2012).

Absorption refers to the levels of attachment that an individual feels towards his/her work (Veldsman & Coetzee, 2014). Schaufeli et al. (2002) conceptualised absorption as a key component of work engagement which describes the employee's sense of energetic involvement in and connection to their work activities. The construct of absorption will be influenced by factors such as perceived organisational support, opportunities for growth, job resources provided within the organisation as well as environmental factors such as psychological safety (Jeve, Oppenheimer, & Konje, 2015). Coetzer and Rothmann (2007) further state that higher levels of absorption lead to work engagement and a willingness on the part of employees to involve themselves and push towards new levels of achievement. As such the concept of absorption is relevant within the domain of organisational effectiveness owing to its influence on factors such as goal achievement, productivity, work engagement and commitment (Eldor & Vigoda-Gadot, 2015).

Employee motivation is a well-researched concept that underpins a number of modern organisational effectiveness theories (Milner, 2015). Employee motivation refers to an intrinsic drive that results in individual energy and influences the levels of enjoyment experienced by employees within the work environment (Veldsman & Coetzee, 2014). In their classical work, Hackman and Oldman (1980) demonstrate that factors such as employees feeling challenged within their working environment, experiencing autonomy in terms of making decisions in their own work environment and seeing how their individual contribution makes a difference in the broader organisation will influence the levels of employee motivation that the individual experiences. Employee motivation is also characterised by feelings of personal mastery in relation to the achievement of both personal and organisational goals and, as such, ties in with the modern organisational practices of reward and recognition prevalent in many knowledge economy organisations (Shields, 2007). Boredom, disengagement and feelings of insignificance are often mentioned as the paradox to employee motivational practices, yet the rise of these factors in modern organisations has become a reality, with Gallup (2013) stating that 70% of the knowledge economy workforce is experiencing a lack of motivation. Burnout studies have become increasingly important as the modern employee struggles to remain engaged, motivated and

healthy in a turbulent environment that is forever demanding more (Sulea, Van Beek, Sarbescu, Virga, & Schaufeli, 2015).

3.1.2.3 *The PWIS as a measure of people effectiveness*

The PWIS (Veldsman, 2013) can be seen as a relevant measure of people effectiveness as it provides an understanding of the people effectiveness enablers (manager credibility, appreciative feedback, strategic connection, intra-team effectiveness, enabling environment and individual congruence) that lead to psychological attachment (commitment, absorption, employee motivation). Both these concepts referred to above have shown relevance to the knowledge economy organisational landscape, with research indicating clear relationships to factors such as organisational performance, productivity, turnover intention, retention and reduced levels of absenteeism (Eldor & Vigoda-Gadot, 2015; Gallup, 2015; Shields, 2007). The scale further provides insight into the people practices prevalent in the organisation, as well as the alignment between individual employee expectations pertaining to the working environment and the lived practices in the organisation. The model underpinning the PWIS (Veldsman, 2013) also shows the alignment between well-researched concepts such as flow, work engagement, job satisfaction and motivational theories (Hackman & Oldham, 1980; Jeve et al., 2015; Richmond, 2015).


The following section discusses the underpinning theoretical models that influence the concept of psychological work immersion within the context of the knowledge economy and also focuses on the criteria that inform the scale.

3.2 THEORETICAL MODELS

The construct of psychological work immersion has its origins in the positive psychology movement of the early 2000s (Seligman, 2012). Figure 3.1 below provides an overview of the psychological movements that have influenced the conceptualisation of psychological work immersion by Coetzee and Veldsman (2013).

Historically, psychology focused predominantly on understanding human behaviour in order to address discrepancies in optimal functioning. Such an understanding was heavily influenced by behaviouristic and psychoanalytical paradigms of thought (Snyder & Lopez, 2014). Although valuable, these perspectives, from an organisational point of view, drove an approach to organisational development practices that focused predominantly on understanding the barriers to effective functioning, understanding the sum of its parts and then subsequently proposing a method for achieving effectiveness (Seligman & Csikszentmihalyi, 2014). During the 1950s, the humanistic movement started to influence

thinking patterns about how psychology is applied in the workplace (Csikszentmihalyi, 1975). This approach, often referred to as the third force, was conceptualised by theorists such as Maslow and focused on understanding the individual experiences of human beings in order to understand what drives us towards self-actualisation (Pedersen, 2015). This school of thought shifted psychology towards a more existentialist and phenomenological approach, yet was often criticised for the research methods associated with the paradigm (Hergenhahn & Henley, 2013). From an organisational development perspective, however, this paradigm started to view the individual not as an element that needed to be fixed but rather as an opportunity to create meaning that would lead to higher levels of functioning and, in the organisational context, performance. This movement provided the basis for the development of other branches of psychology that were more focused not only on understanding barriers to effective functioning but also the enablers that can create effectiveness (Meyers, Woerkom, & Bakker, 2013).



Year	Theorist	Publication/Event
1859	Darwin	Publishes "Origin of the species"
1875	James	Teaching psychology at Harvard
1879	Wundt	First psychology laboratory
1892	James	Publishes Principles of Psychology
1896	Freud	Addresses Viennese Society of Psychology
1900	Freud	Publishes "Interpretation of dreams"
1913	Watson	Publishes "Manifesto for behavioural psychology"
1923	Jung	Publishes "Psychological Types"
1946	Klein	Notes on some schizoid mechanisms
1951	Rogers	Publishes "Centred Therapy"
1970-	Maslow	Self Actualisation movement
1998	Seligman	APA Presidential address on "Positive Psychology"
1998	Frederickson	Publishes "Broaden and Build" Theory
1999	n/a	First conference on Positive Psychology
2000	n/a	Millennial Issue of Positive Psychology of American Psychologist
2000 -	n/a	Development of positive psychology theories

Figure 3.2. The historical underpinnings of psychological work immersion

Positive psychology aims to focus on creating environments and experiences for individuals to thrive and perform at an optimal level (Seligman & Csikszentmihalyi, 2014). Positive psychology can be defined as the scientific study of positive experiences and positive individual traits in the workplace in order to leverage them to create effective and optimal functioning (Seligman, 2012). This movement does not aim to ignore developmental areas of thought as conceptualised by traditional psychological paradigms but rather aims to

complement the manner in which we view human development (Seligman, 2012). This movement has given rise to numerous fields of research which include work on values, strengths, virtues and talents and, within the context of this research, the ways in which social systems and institutions can foster environments that are conducive to optimal and effective functioning (Seligman & Csikszentmihalyi, 2014).

As discussed in chapter 2, the knowledge economy workplace has called for an environment that optimises organisational effectiveness with a key focus on people effectiveness as a critical component. Traditional schools of thought in psychology can only provide a limited view of organisational effectiveness, owing to their key focus on the barriers to effectiveness, as suggested by their focus on understanding discrepancies in the environment and providing reactive solutions to existing problems. The positive psychology movement does, however, allow for a broader perspective. While not ignoring the factors that are inhibiting optimal functioning in organisations, it also provides a perspective on the use areas of strength in order to neutralise areas for development and enable optimal functioning (Meyers et al., 2013). This approach has become popular in the modern organisational effectiveness literature because of its solid grounding in factors such as motivational theory, self-actualisation, self-determination theory, goal attainment and the possibilities that it provides in terms of proactive organisational interventions to enable effectiveness (Seligman, Steen, Park, & Peterson, 2005). This is in contrast to previous approaches, which focused on understanding existing problems, providing interventions aimed at addressing the identified barriers and re-measuring the effectiveness of the solutions. Positive psychology provides a perspective in terms of which organisations can enable working environments that proactively facilitate effective functioning and, as such, enable effectiveness as opposed to fixing the barriers that inhibit optimal functioning (Seligman & Csikszentmihalyi, 2014).

The theoretical framework underpinning the PWIS (Veldsman, 2013) is embedded in the positive psychology movement towards optimizing people effectiveness and functioning in the workplace. The PWIS (Veldsman, 2013) is grounded on the conceptual model articulated by Coetzee and Veldsman (2013) on the states of psychological work immersion. This model was conceptualised on the basis of an understanding of the barriers that inhibit optimal functioning in the organisation and subsequently builds on areas of strength. The approach conceptualised by Coetzee and Veldsman (2013) acknowledges the organisation as a living system that needs to develop over time and focuses on characterising the organisation in terms of areas of optimal functioning and learning how to neutralise areas of development (Wheatley, 2006). This approach is in line with the shift in thinking towards open system theories, which view the organisation as a holistic and living entity that needs to

be understood in terms of all of its interrelated parts and environmental influences (Wheatley, 2006). Optimal functioning, on the other hand, was conceptualised in terms of the prevalent states of psychological work immersion present in the environment (Coetzee & Veldsman, 2013). The states of psychological work immersion are measured through people effectiveness enablers, referring to areas of development and strength which lead to experiences of psychological attachment (commitment, absorption, employee motivation), which in turn lead to enabling an effective workforce that contributes to the achievement of business performance (Coetzee & Veldsman, 2013).

Veldsman (2013) states that psychological work immersion is dependent on three conditions; namely, (1) the alignment between employee expectations, the work environment and organisational practices; (2) a significant relationship between the employee's job activities and the contribution to organisational goals; and (3) the espoused conventions, practices and values of the organisation and consistency in terms of how employees are experiencing them.

The model was conceptualised on the basis of three major influencing theories. Work engagement as conceptualised by the original work by Kahn (1990), the job-resources demand model (Demerouti, 1999) and the work related to psychological states of flow (Csizikszentmihalyi, 1990). The following section will discuss each of these influencing theories and contextualise the influence that it has had on the concept of psychological work immersion and the PWIS (Veldsman, 2013) as a measurement instrument aimed at measuring levels of psychological work immersion present in knowledge economy organisations.

3.2.1 Work Engagement

Kahn (1990) viewed work engagement as the extent to which the organisation harnesses its members to their work roles and articulates employee behaviour in terms of being physically, mentally and emotionally connected to the organisation. The definition of engagement, as contextualised by Kahn (1990), states that engagement is "the simultaneous employment and expression of a person's 'preferred self' in task behaviours that promote connections to work and to others, personal presence and active full performance". Engagement as such displays key relationships, with employees being psychologically present in the organisation, feeling connected to their roles and as such able to perform (Rich, Lepine, & Crawford, 2010). Kahn's work was motivational in nature, but also built on traditional work motivation theories by driving a key focus on bringing deeper experiences of the self into the working environment, which Kahn (1992) noted as a key contributor to employees being able to

perform in their roles. Kahn (1990) shifted the thinking in terms of job performance significantly by acknowledging the fact that the individual has to make a conscious decision as to whether to be physically, mentally and emotionally connected to the organisation. At the time, this view was contrary to various other perspectives that viewed affect, cognition or motives as the prevailing influencing factors that lead to physical persistence in tasks (Lepine & Crawford, 2010).

The definition and measurement of the engagement construct has received a lot of attention in recent research, largely due to a peaked interest in the workplace regarding how engagement can be applied in terms of enabling effectiveness and its relationship to organisational performance (Gallup, 2013). However, Wu (2011) is of the opinion that there is still confusion about the definition of the core construct, as the academic research has been largely influenced by consulting and survey firms which started popularising the terms in the workplace. Although researchers do not all agree on the definition of engagement, agreement does exist that improving employee engagement is beneficial to the organisation (Markos & Sridevi, 2010). The concept of work engagement has been criticised by some researchers, who state that employee engagement is nothing new as it draws on well-researched concepts such as commitment, job involvement and organisational citizenship behaviour (Wu, 2011). Contrasting views also exist which regard engagement as a broader construct that also refers to personality and mood and the actions of individuals in the workplace (Macey & Schneider, 2008).

For the purpose of this research, engagement is viewed as a multidimensional construct that requires the simultaneous presence of physical, mental and emotional investment in a job task by the individual. This view is supported by Macey and Schneider (2008), who define work engagement in terms of three defined psychological states based on Kahn's (1990) original work. Their research defines engagement in trait, state and behavioural terms (Macey & Schneider, 2008). Trait engagement is defined as a positive view of work and life, while state engagement refers to feelings of energy and absorption. Behavioural engagement can be defined as extra role behaviour and is visible through behavioural indicators (Wu, 2011). Psychological work immersion draws on all three states of engagement through the inclusion of psychological attachment factors such as commitment, employee motivation and absorption, while also looking at the antecedents that lead to these defined states.

The strong perceived relationship between engagement and individual job performance led to various studies within the industrial and organisational psychology domain focusing on understanding whether engagement could be a predictor of job performance (Nienaber &

Martins, 2016). A study conducted by Rich et al. (2010) found a strong relationship between value congruence, perceived organisational support and core evaluations of the self as predictors of job engagement. The study also further showcased job engagement as a valid predictor of task performance and organisational citizenship behaviour (Rich et al., 2010). Heightened states of engagement have been shown to lead to improved job performance, higher levels of commitment, increased levels of job satisfaction, better profitability for the organisation and increased levels of psychological health (Field & Buitendach, 2011; Jacobs et al., 2014; Mendes & Stander, 2011; Nasomboon, 2014). Schaufeli and Bakker (2010) also state that engaged employees demonstrate passion for their work, they are more motivated and committed to the organisation and perform better.

The development of the PWIS (Veldsman, 2013) was influenced by the current literature on employee engagement in terms of the following insights:

- *Insight 1.* The relevance of psychological attachment as a construct in knowledge economy organisations
- *Insight 2.* The incorporation of antecedents that will lead to psychological attachment as part of the PWIS which are characterised by the development of people effectiveness enablers
- *Insight 3.* The theoretical view of psychological attachment as being characterised by the constructs of commitment, absorption and intrinsic motivation as descriptors of psychological engagement
- *Insight 4.* The relationship between engagement, individual task performance and business performance as a key contributor to organisational effectiveness
- *Insight 5.* Psychological attachment as a key component of people effectiveness within the domain of organisational effectiveness

The need for effectiveness in the knowledge economy environment shifted the research towards understanding the underlying causes or drivers of achieving these states in knowledge economy organisations (Meyer, 2013). Meyer (2013) distinguishes the satisfaction of individual needs, social exchange in terms of our relationships with others in the workplace and person–environment fit as key drivers that will lead to higher levels of engagement. From a psychological work immersion perspective, this need shifted research towards understanding the resources that are required for attaining these states of engagement in knowledge economy organisations. This understanding relates to both the demands of the knowledge economy workplace and the related organisational resources required for effectiveness.

3.2.2 Job resources and demand model

The job resources and demand model was conceptualised by Demerouti (1999) for understanding the factors that will predict employee burnout. The model drew on original research conducted by Lee and Ashforth (1996) which identified eight job demands and thirteen job resources that were deemed to be possible causes of burnout in organisations. The model aligns with the job characteristics theory postulated by Hackman and Oldham (1980). It emphasises the motivational aspect of job performance by stating that in order to achieve organisational goals, organisations need to create an environment in which the resources needed to deal with the demands of the work are available to employees. The model postulates that every occupation and work environment has its own challenges but that there is an overarching theme relating to the balance between the demands and resources provided in that environment (Hu, Schaufeli, & Taris, 2016). The balance between these two opposing forces will lead either to higher levels of engagement and performance or subsequently to experienced levels of burnout. Job demands refer to the aspects of the job related to psychological, social or organisational issues that require either physical, cognitive and/or emotional efforts or skills and are therefore associated with certain physiological or psychological costs (Bakker & Demerouti, 2014). Job resources refer to the factors that need to exist in order to achieve functional goals and reduce the job demands associated with both physiological and psychological costs. These are aimed at stimulating personal growth, learning and development (Demerouti, 1999).

As a result of the balance that has to be achieved between demands and resources, the original model developed by Demerouti (1999) was adapted by Schaufeli and Bakker (2004) to include work engagement in addition to burnout. This shifted the focus of the model to include not only the negative outcome of imbalance, that is, burnout, but also to discover the possibilities of creating optimal functioning in an organisation. The revised model incorporated a motivation process that underpins the model. This process refers to environments where an abundance of resources is available for employees to experience states of engagement in terms of vigour, dedication and absorption (Schaufeli & Bakker, 2004). This was supported by the effort-recover theory (Meijman & Mulder, 1998), which emphasises that job resources play a critical role in fostering motivation and, in effect, work engagement in work environments. In this context, job resources also play an intrinsic motivational role as they satisfy needs for autonomy, relatedness, competency and significant work experiences (Deci & Ryan, 2000; Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008). Although the original model developed by Demerouti (1999) focused predominantly on the organisational level the adapted model described by Schaufeli and Bakker (2004) gave rise to a focus on the individual as being central to the model. This view

aligns with the original work by Kahn (1990), who stated that engagement is largely dependent on the individual's decision in the organisational context to commit to the experience of becoming engaged. In a review of the model conducted by Schaufeli and Taris (2016), they state that the model incorporates personal resources in terms of the following:

- Personal resources directly influence well-being: personal resources in this context are defined in terms of factors such as resilience and control.
- The relationship between job characteristics and well-being is moderated by personal resources: the assumption that the effects of job demands may be buffered by personal resources and influence engagement levels.
- Personal resources mediate the relationship between job characteristics and well-being: resourceful environments provide employees with the opportunity to develop factors such as self-confidence, optimism and hope as a result of the availability of required resources to achieve these goals.
- Personal resources influence individual perceptions of job characteristics: Bandura (2001) states that personal resources with reference to factors such as self-efficacy will shape the way in which individuals understand their work environment and in turn influence factors such as work engagement and performance.

The revised model proposed by Schaufeli and Bakker (2004) is represented in Figure 3.3 below:

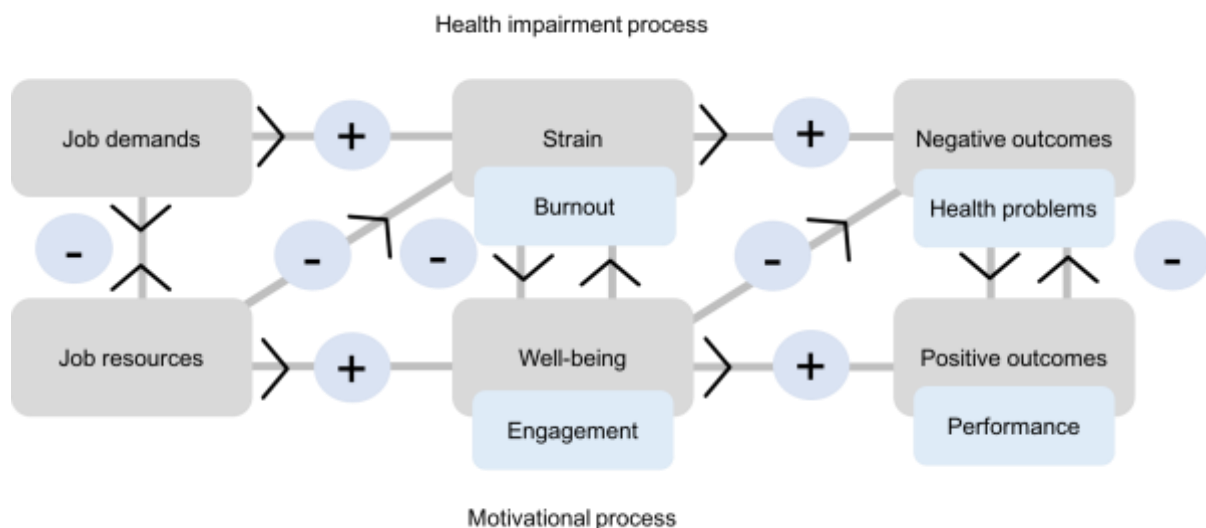


Figure 3.3. The JD-R model

The adapted model postulates two processes that govern the relationship between resources and demands. An imbalance between job demands and resources will lead to

strain which, in turn, leads to negative outcomes for the individual and, by implication, for the organisation. This process is characterised as a risk in terms of the impairment of the individual's health. A balance between job resources and demands leads to feelings of well-being and positive outcomes for the individual. From an organisational perspective this leads to performance. This process is seen as being motivational in nature and as benefitting both the organisation and the individual.

Schaufeli and Taris (2016) state that the JD-R model is acknowledged as one of the leading models for understanding the causes of job stress in the organisation and has been validated through numerous cross-sectional research studies (Bakker, Demerouti, & Schaufeli, 2003; Hakanen, Bakker, & Schaufeli, 2006; Lewig, Xanthopoulou, Bakker, Dollard, & Metzger, 2007). The model has, however, been criticised for its rather "loose" definition of job resources and demands and in essence only provides a framework of thinking pertaining to demands and resources as opposed to other models such as the Effort–Reward Imbalance (Siegrist, 1996) and Job Demands Control (Karasek, 1979) models that builds on well-established concepts that lead to motivation, employee health and well-being. By contrast, the JD-R model provides a way of thinking about a job and can be applied in any environment and based on the same assumptions underpinning the model is still found to relevant within the organisational context. This approach has made the model very popular but acts as both a strength and a weakness regarding the applicability of the model to the work environment (Schaufeli & Taris, 2016). Although the model is flexible and adaptable to various work environments, it is limited in terms of its generalisability across various work contexts. The implication is that the model cannot always explain why certain demands and resources have a relationship and often needs to draw on other theories in order to demonstrate the relevance of the identified relationships. Some of these theories include Hobfoll's (2002) conservation of resources theory, Fredrickson's (2001) broaden-and-build theory, Bandura's (2001) social cognitive theory, and Deci and Ryan's (2000) self-determination theory.

The JD-R model has also been criticised for the fact that the difference between demands and resources is not always easy to distinguish, as well as the fact that job demands are not always equally important (Schaufeli & Taris, 2016). Another concern with the model is the reciprocal causation that exists between demands, resources and outcomes. Numerous longitudinal studies have highlighted that reciprocal relationships exist between different factors and as such a simplistic cause-and-effect relationship is not applicable to understanding resources, demands and outcomes (Bakker et al., 2003; Hakanen et al., 2006; Lewig et al., 2007). The final criticism that has been levelled at the use of the model is

the fluid nature of the way personal resources can be integrated into the model and, as stated by Schaufeli and Taris (2016), no single method of integration exists.

In terms of the PWIS, the JD-R model provides the following insights:

- *Insight 1.* People effectiveness enablers act as job resources at an organisational and individual level in order to create levels of psychological attachment.
- *Insight 2.* The absence of people effectiveness enablers will lead to experienced levels of stress, burnout and disengagement.
- *Insight 3.* The relationship between people effectiveness enablers and psychological attachment in terms of a reciprocal relationship.
- *Insight 4.* Psychological attachment can be seen as personal resources within the environment.

From the literature on work engagement and the JD resources model, it is evident that employees will only experience levels of engagement if the balance between job demands and resources are provided in the organisational environment. The literature also clearly indicates that resources are present not just at the organisational level, but also refer to individual resources required for employees to perform. Given the strong relationship between engagement and performance, as discussed earlier in the chapter, this reasoning could also potentially lead to an exploration of how organisations can create environments that provide all the resources required for engagement to occur. Based on these conclusions, the psychological work immersion model is further influenced by the work on states of flow within the context of knowledge economy organisations.

3.2.3 Flow

Flow was conceptualised by Csikszentmihalyi (1975) as part of an exploration into autotelic activity, that is, the state of immersion that induces creativity. Csikszentmihalyi (1975) studied a group of artists who were fully immersed in the experience of painting or sculpting but would after completion lose interest in the piece of work. During the event, they experience a sense of intense concentration, losing track of time and perceiving their work to be the most important thing in the world. None of these artists thought that their pieces of art would change the world, make them famous or even enable them to obtain large amounts of wealth (Csikszentmihalyi, 1990). The artists over time also further sought new challenges with follow-up paintings in order to experience the same state of immersion, thus continually challenging their own skills and abilities (Csikszentmihalyi, 1990).

This observation shifted the thinking paradigm at the time based on what motivates individuals to perform. During the 1960s current thinking was very focused on extrinsic motivators such as monetary rewards as opposed to the activity itself (Brophy, 2013). With the exception of Maslow who had at the time already started to differentiate between the process and the product of creative behaviour, the prevalent thinking was still based on the assumption that individuals are motivated to perform not by the nature of the task, but by the reward that the task will bring as described by external factors (Csikszentmihalyi, 1990). Maslow referred to this state as a drive towards self-actualisation (Pedersen, 2015). However, Csikszentmihalyi (1990) perceived this to be a limited focus on the concept and attempted to understand whether this state could be achieved by individuals in any type of activity or whether it was only related to the creative process. This inquiry further explored whether all experiences feel the same and whether this state was achievable for all members of the population or for only a select few. The publication of *Beyond boredom and anxiety* (Csikszentmihalyi, 1975) signalled a shift in thinking from previous psychological approaches, which to a large extent were based on a shared epistemology that provided a reductionist view of understanding human action. Csikszentmihalyi (1975) was of the view that these approaches ignored the most critical aspect of understanding human behaviour, which was the existence of the conscious self.

Consciousness can be divided into three functional subsystems: attention which relates how we take notice of information available to us; awareness which refers to how we interpret the information and memory; and our ability to store the information over time (Csikszentmihalyi, 1975). This approach draws on the theoretical foundations of focus (Zimmerman & Schunk, 2012) and also holds the view that the self becomes entrenched in the consciousness and represents its own interests as goals. Both these concepts built on the research related to engagement through the articulation of conditions that need to be present for flow to occur such as perceived challenges that aim to stretch the individuals' current skills up to a level of appropriate capacity, as well as the proximity of goals to be achieved and continuous feedback based on progress. This approach ties in closely with the JD-R model discussed earlier in this chapter, as well as the influencing motivational theories that provides the basis for the work on engagement conducted by Kahn (1990). Flow as a concept refers to a subjective state where individuals enter a state of presence that is characterised by the following (Seligman & Csikszentmihalyi, 2014):

- Intense and focused concentration on activities within the present moment
- Convergence of action and awareness

- Sense of control over immediate actions and the realisation that actions will influence outcomes
- Distortion of time
- Perceiving the experience to be intrinsically rewarding and as such the end goal is often just seen as an excuse for the process.

Flow enables individuals to operate at optimal capacity and thus gathered interest in the organisational research domain during the 2000s (Seligman & Csikszentmihalyi, 2014). From an organisational effectiveness perspective, the research focused on determining whether an organisation could create an environment conducive to employees entering states of flow on a regular basis in order to drive greater extents of goal achievement, productivity and performance. The research consequently shifted to evaluate the person–environment fit, as well as the factors that will lead to the creation of a flow state aligned to organisational objectives. In order for individuals to achieve states of flow the following nine dimensions were identified by Csikszentmihalyi (1975) and validated by Jackson (1995) as described in Table 3.1.

Table 3.1.

Dimensions Required for Flow to Occur and its Relationship to the PWIS

Dimension	Description	Relation to the PWIS
Challenge and skills balance	States of flow can only be experienced if individuals are able to cope with the situational demands that are at a level just above the individuals' level of functioning. In essence, the balance between challenge and skills needs to be in balance in order for the individual to enter a state of flow.	The key focus on the balance between challenge and ability as a measure of the utilisation of employee strengths
Action-awareness merging	During flow, there is no sense of self, as the individual is so fully immersed in the activity that actions seem to occur automatically.	The experience of psychological attachment aligned to the levels of absorption experienced by individuals
Clear goals	Clear goal-setting and knowing what the expectations are in terms of the future goals.	Development of items related to strategic connection and employee understanding of where they fit into the broader organisational context
Unambiguous feedback	Immediate feedback is received in terms of enabling individuals to know whether they have achieved success. Feedback here is often received from an intrinsic "knowing" that achievement has occurred.	The appreciative feedback construct which also measures the frequency of feedback received
Concentration on the task at hand	A state of total concentration is achieved during states of flow where the individual is not distracted by external stimuli but only focuses on the task at hand.	The inclusion of psychological presence as the foundation of the PWIS
Loss of self-consciousness	The individual experiences a loss of self during flow and becomes part of the task at hand. This indicates a key merging between who I am and what I am busy with as part of the flow state.	The feeling of emotional, cognitive and physical immersion in a certain time or place
Transformation of time	The concept of time becomes fluid and can either become irrelevant, go by without notice or slow down. Although this dimension is not always present, it has been associated with the flow state in various studies.	The inclusion of the state of immersion in the broader concept
Autotelic experience	This refers to an intrinsically rewarding experience and is described as the end result of being in flow. The term is derived from the Greek referring to the self (auto) and the goal (telic).	Inclusion of intrinsic motivation as a key consequence of psychological work immersion

The measurement of the flow construct has been the focus of various research studies (Jackson & Marsh, 1996; Jackson, Martin, & Eklund, 2008). Owing to the hypothetical nature of the concept, the measurement of flow has been largely based on self-awareness assessments conducted by participants (Jackson et al., 2008). The changing nature of work

has resulted in a resurgence in applying the concept of flow in the knowledge economy workplace. Internet usage and various studies into online gaming and immersion have used the flow concept as a basis for understanding the behaviour of internet users (Koivisto & Hamari, 2014). With changes in the organisational landscape resulting from a dedicated shift towards not only virtual workplaces but also virtual consumers, the concept of flow has been studied to determine how online experiences could be designed for both employees and consumers in order to drive engagement with and within organisations (Eyal, 2016). Research conducted by Eyal (2016) explored the use of a number of mechanisms and tools in modern organisations to drive user experiences of flow and identified organisations such as Facebook, Pinterest, Tumblr, Twitter and Yelp, which use flow as core to their consumer strategies.

The development of the PWIS (Veldsman, 2013) was influenced by the flow research in terms of the following insights:

- *Insight 1.* Utilisation of a self-awareness scale to measure states of immersion
- *Insight 2.* Led to the acknowledgement that flow occurs within a specific socio-cultural context which makes the flow concept applicable to modern knowledge economy organisations
- *Insight 3.* Inclusion of certain people effectiveness enablers related to the required conditions for flow to occur
- *Insight 4.* Item development of the scale in terms of also assessing the skills–challenge balance required for the state of flow to occur
- *Insight 5.* Inclusion of intrinsic motivation as a key measurement of psychological engagement

In conclusion, the measurement of psychological work immersion and the development of the PWIS (Veldsman, 2013) as a measurement instrument has been influenced by the original work on engagement by Kahn (1990), the JDR model (Demerouti, 1999; Bakker, Demerouti & Schaufeli, 2003) and the work on psychological states of flow (Csikszentmihalyi, 1975). Each of these foundational theories has provided insights into the development of not only the conceptual model that underpins psychological work immersion but also the development of the PWIS (Veldsman, 2013) as a measurement instrument.

The following section will provide a critical reflection on each of these influencing models and conclude with the applicability of the PWIS (Veldsman, 2013) to the knowledge economy.

3.3 A CRITICAL REVIEW OF THE PWIS IN TERMS OF INFLUENCING MODELS AND APPLICABILITY TO THE KNOWLEDGE ECONOMY

The PWIS (Veldsman, 2013) draws on the JDR model (Demerouti, 1999; Bakker, Demerouti & Schaufeli, 2003) through the articulation of people effectiveness enablers as resources required to counter the demands of the knowledge economy workplace. The PWIS (Veldsman, 2013) also further postulates the existence of flow in the organisation, as characterised by the experienced state of consciousness associated with the psychological immersion described by the psychological attachment variables of commitment, absorption and employee motivation (Csikszentmihalyi, 1990; Hamari & Koivisto, 2014). The model also draws on the theoretical underpinning of Kahn's (1990) original work into the concept of engagement by stating that immersion needs to occur within three states, namely, physical, emotional and cognitive connection to the organisation. By being aligned to all three theories, the PWIS (Veldsman, 2013) is seen as a key indicator of people effectiveness. As informed by the literature on the relationship between engagement and business performance (Nienaber & Martins, 2016), people effectiveness can lead to higher levels of business performance. Table 3.2 summarises the key influencing criteria derived from each of the influencing theories:

Table 3.2.

Influencing Theories on the PWIS

Influencing theory	Reference	Key criteria influencing the PWIS
Work engagement	Kahn (1990)	<p>Incorporation of antecedents that will lead to psychological engagement</p> <p>Theoretical view of psychological attachment as being characterised by the constructs of commitment, absorption and intrinsic motivation as descriptors of engagement</p> <p>The relationship between engagement, individual task performance and business performance</p> <p>Psychological attachment as a key component of people effectiveness</p> <p>Relevance of psychological attachment in knowledge economy organisations</p>
Job resources and demands model	Demerouti (1999) Bakker, Demerouti and Schaufeli (2003)	<p>People effectiveness enablers act as job resources at both an organisational and an individual level in order to create levels of psychological engagement</p> <p>The absence of people effectiveness enablers will lead to experienced levels of stress, burnout and disengagement</p> <p>The relationship between people effectiveness enablers and psychological attachment in terms of a reciprocal relationship</p> <p>Psychological attachment can be seen as personal resources within the environment</p>
Flow	Csikszentmihalyi (1975)	<p>Utilisation of a self-awareness scale to measure states of immersion</p> <p>Led to the acknowledgement that flow occurs within a specific socio-cultural context, which makes the flow concept applicable to modern knowledge economy organisations</p> <p>Inclusion of certain people effectiveness enablers related to the required conditions for flow to occur</p> <p>Item development of the scale in terms of also assessing the skills–challenge balance required for the state of flow to occur</p> <p>Inclusion of intrinsic motivation as a key measure of psychological engagement</p>

The PWIS has undergone significant and rigorous statistical validation (Veldsman & Coetzee, 2014). It has shown acceptable validity and reliability in terms of measuring the underlying constructs that can be described as people effectiveness enablers (manager effectiveness, strategic alignment, individual congruence, appreciative feedback, enabling environment, intra-team effectiveness) and psychological attachment (commitment, absorption and employee motivation). A study conducted by Coetzee and Veldsman (2013) used confirmatory factor analysis to show the PWIS (Veldsman, 2013) as a valid measure of nine underlying factors related to people effectiveness (i.e. manager credibility, appreciative feedback, intrateam effectiveness, strategic connection, individual congruence, enabling environment, intrinsic motivation, commitment and absorption) and provided a good fit to the data (CMIN/df = 3.519; $p = .00$; CFI = .92; RMSEA = .045; SRMR = .04). Harman's one-

factor testing was applied to check for common method variance and indicated that the PWIS constructs accounted for 44% of the co-variance among the PWIS variables (Veldsman, 2013). The fit indices related to the PWIS model showed that a single factor did not fit the model adequately (CMIN/df = 10.39; $p = .00$; CFI = .93; RMSEA = .09) and suggested that common method bias did not pose a threat to the model. The purpose of this study is to contribute towards the test-retest reliability of the PWIS (Veldsman, 2013) over time.

The PWIS (Veldsman, 2013) has to date been applied in various industries such as manufacturing, information technology, the not-for-profit sector, the services, research and financial sectors, and fast moving consumer goods, and has been shown to be a valuable and reliable measure of people effectiveness in knowledge economy organisations (Veldsman & Coetzee, 2014). From a practical perspective, the PWIS (Veldsman, 2013) has also been used to identify organisational development interventions aimed at improving the levels of psychological attachment by addressing people effectiveness enablers and creating an environment conducive to performance. The use of the PWIS (Veldsman, 2013) as a measure of people effectiveness enablers has positioned the instrument as a critical indicator of the focus and relevance of organisational development interventions within the context of the knowledge economy workforce.

3.4 ORGANISATIONAL DEVELOPMENT INTERVENTIONS TARGETING PSYCHOLOGICAL WORK IMMERSION LEVELS

The PWIS identifies relevant organisational development interventions aligned to the people effectiveness enablers that can be focused on the individual, team and organisational level (Veldsman & Coetzee, 2014). Table 3.3 below provides an overview of the relevant interventions and subsequent theoretical framework that underpins the relationship between the people effectiveness enablers (manager credibility, appreciative feedback, strategic connection, intra-team effectiveness, enabling environment and individual congruence) and applicable organisational development interventions aimed at the individual, team and organisational levels:

Table 3.3.

People Effectiveness Enablers and Relationship to OD Interventions

People Effectiveness Enablers	Level of Organisational Development Interventions			References
	Organisational	Team	Individual	
Manager effectiveness	Leadership competency model design Culture interventions Leadership development Training	Team coaching Leadership development	Individual coaching Individual development	Jiang et al. (2010) Roussin and Webber (2012)
Individual congruence	Organisational design	Functional design	Work design Job rotation Personal development	Swann et al. (2015) Tims et al. (2013)
Strategic connection	Vision and value interventions Performance management Communication practices	Cascading of performance goals Communication forums	Individual feedback to employees regarding performance One-on-one communication mechanisms	Barrick et al. (2015) Armstrong and Taylor (2014)
Appreciative feedback	Total rewards practices Recognition and incentive programmes	Team recognition processes	Performance feedback Individual recognition practices	Jordan and Audia (2012) Shahid and Azhar (2013)
Enabling environment	Talent management Policy reviews Process optimisation Ergonomical design	Ergonomical design	Personal development Career pathing	Iorio and Taylor (2014) Lohikoski et al. (2016) Richmond (2015)
Intra-team effectiveness	Culture interventions	Team effectiveness	Team effectiveness Role clarification	Gilson et al. (2014) Prooijen and Ellemers (2015)

As depicted by Table 3.3 above, the interventions indicate the need to balance the interventions between the individual, team and organisational levels. The relevance of interventions also emphasises the relationship between interventions and the impact they have on improving the relevant people effectiveness enablers. Although interventions could potentially improve more than one of the people effectiveness enablers at a time, the table demonstrates the importance of targeting interventions aligned to people effectiveness enablers to ensure the relevance and applicability of the chosen intervention.

The organisational setting specific to this research study applied the PWIS (Veldsman, 2013) as a measure to determine current levels of psychological work immersion and identify interventions applicable to their environment to improve business performance. Given the specific findings obtained from the PWIS measure, the following interventions were identified and implemented to improve the levels of psychological attachment in the organisation. Table 3.4 provides an overview of the applied interventions and the levels of focus:

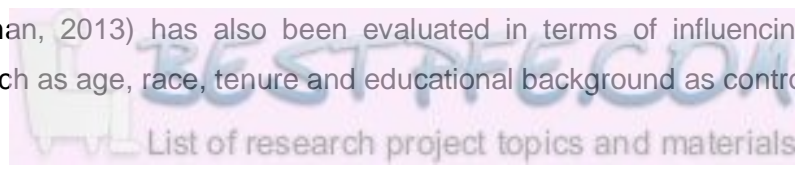
Table 3.4.

Specific Interventions Utilised within the Research Setting

People Effectiveness Enabler Prioritised	Intervention	Description	Focus
Strategic connection	Vision definition	Redefined organisational vision and purpose	Organisational level
Strategic connection	Performance enablement	Cascaded organisational goals to teams in regions and incorporated them in individual contracts	Organisational level Team level Individual level
Individual congruence	Organisational design Functional design Work design	Realigned organisational operating model to strategic goals and distributed work accordingly at regional centres	Organisational Team level Individual level
Manager effectiveness	Leadership development	Implemented a leadership competency framework and evaluated, developed and trained leaders accordingly	Organisational level
Manager effectiveness	Coaching	Executive coaching practices were put in place to develop individual leaders	Individual level
Enabling environment	Communication channels	Implementation of employee forums and two-way communication channels	Organisational level

Table 3.4 indicates that the organisation applicable to this study targeted various interventions at the individual, team and organisational level, with the majority of interventions targeted at the organisational level. The organisation applicable to this research study also demonstrates a good balance in relation to targeting a variety of the people effectiveness enablers. This indicates the importance of prioritisation and focus with regard to organisational development practices.

The PWIS (Veldsman, 2013) has also been evaluated in terms of influencing variables related to factors such as age, race, tenure and educational background as control variables.



The following section will discuss the PWIS (Veldsman, 2013) in terms of the findings related to the influencing variables and the implications for the use of the PWIS (Veldsman, 2013) within the knowledge economy environment.

3.5 VARIABLES INFLUENCING PSYCHOLOGICAL WORK IMMERSION

The knowledge economy consists of a multifaceted and diverse workforce (Guttman, 2009). Current research suggests that individuals from different demographic backgrounds in terms of gender, age, race and tenure could potentially experience psychological attachment differently in the organisation. This also further emphasises the point that people effectiveness enablers could potentially be more or less important for certain individuals depending on demographic differences (Veldsman & Coetzee, 2014). Current research within this area is rather limited, however, with conflicting findings. Tladinyane (2012) and Lumley (2009) found that men showed higher levels of commitment than their female counterparts, whilst Takawira (2012) found that females experienced higher levels of commitment than men. Takawira (2012) also found that there is no significant difference between the experiences of engagement related to demographic differences in groups with regard to age and race groups.

Coetzee and Veldsman (2013), however, found significant differences in the experienced levels of psychological work immersion between different demographical groups. The following summary of their findings are relevant to the context of this study:

- Female participants experienced significantly higher scores on people effectiveness enablers related to appreciative feedback and strategic connection.
- Male participants, on the other hand, experienced significantly higher scores than females on enabling environment.
- Participants in this study who were older than 35 years scored significantly higher than younger participants in terms of appreciative feedback, intra-team effectiveness, individual congruence, enabling environment, intrinsic motivation, commitment and absorption.
- African participants scored significantly higher than their white counterparts on appreciative feedback, strategic connection, intrinsic motivation and absorption.
- White participants scored significantly higher than the black participants on manager credibility and enabling environment.

- The tenure groups differed only in terms of enabling environment, with those with more than five years' experience scoring significantly higher than those with less than 5 years' tenure.

The study conducted by Coetzee and Veldsman (2013) contradicted previous research by showing that female participants responded in a more positive way to appreciative feedback received from managers as opposed to their male counterparts. This study corroborates a previous study conducted by Martins and Coetzee (2011), which indicated a similar trend in that it found that female employees attach greater importance to factors such as employee self-development, seeking feedback, personal development and seeking out opportunities for growth. The study conducted by Coetzee and Veldsman (2013) further found that male participants perceive factors related to enabling environment, that is, policies and practices that enable employees to perform their tasks, as more important than their female colleagues. This finding corroborates previous research which found that males attach greater meaning to the availability of resources within the environment.

A study conducted by Swart (2009) also found that female employees indicated a lower need for factors such as management communication, alignment with the vision and mission of the organisation and the physical work environment than their male counterparts. However, the study conducted by Coetzee and Veldsman (2013) indicated no difference between males and females in terms of their experience of psychological attachment variables (commitment, absorption, employee motivation). This is in contrast to the findings of the study by Tladinyane (2012) and Takawira (2012), who indicate that men and women tend to differ in terms of their levels of commitment and engagement in knowledge economy organisations.

From an age perspective, the study by Coetzee and Veldsman (2013) indicated that older employees were more positive than younger participants regarding positive feedback from managers, working in a healthy team environment and individual congruence related to person–job fit. They also found that older employees ascribed a higher level of importance to working in an enabling environment, higher levels of intrinsic motivation, commitment and understanding the strategic goals and aligning their own jobs to the broader organisational purpose. These findings are in line with a study conducted by Martins and Coetzee (2007) which found that employees under the age of 35 are more dissatisfied with the work environment than their older colleagues. This finding is in line with current research on generational differences in the workplace; Meister and Willyerd (2010) found that younger employees are more critical of organisational practices as a result of different values and needs. This finding is corroborated by a study conducted by Ferreira, Basson, and Coetzee

(2010), who found that older employees tend to be more committed to the organisation than younger employees.

Research conducted by Takawira (2012) indicates that race differences did not play a significant role in the experience of psychological attachment in organisations. Contrary to this view, Coetzee and Veldsman (2013) found that African employees tended to respond more favourably to appreciative feedback, strategic alignment and the setting of realistic goals than their white counterparts. The study further also identified that African employees showed higher levels of intrinsic motivation and absorption than their white counterparts. The study further highlighted that white employees placed more emphasis on manager effectiveness and the perception that everyone is treated fairly as opposed to their African counterparts. This is in agreement with a previous study conducted by Martins and Coetzee (2007).

From a tenure perspective, the study found that employees who have been in the organisation for a longer period of time tended to be more engaged than their colleagues. This finding is in line with Van Dyk's (2011) finding that employees with longer tenure tended to be more satisfied with their jobs.

Based upon the research findings discussed here the following conclusions can be drawn:

- Engagement experiences differ for different demographic categories of employees.
- Older employees tend to experience higher levels of psychological attachment than their younger colleagues owing to different motivational and value needs in the workplace.
- Conflicting views exist in terms of whether age, race and gender influence levels of psychological engagement.
- Different people effectiveness enablers are more/less important to different gender and age groups in the organisation.

In terms of the research setting, these findings highlight the need to evaluate the use of the PWIS (Veldsman, 2013) in terms of the application to the multifaceted workforce. This implies that different interventions could potentially be proposed not only on the basis of the measured people effectiveness enablers and psychological attachment constructs but also on the demographic characteristics of the group. Previous research conducted by Veldsman (2012) corroborates this finding: the PWIS was used in a financial services organisation to identify different interventions for different age and tenure groups. In terms of the research

setting applicable to this study, the implications of the influencing factors have been taken into account and will be described in Table 3.5:

Table 3.5.

Influencing Factors in terms of the Identified Interventions

People Effectiveness Enabler Prioritised	Intervention	Influencing Factor
Strategic connection	Vision definition	Older employees experienced higher levels of psychological attachment to the organisation and, as such, the intervention had to focus on defining the vision for younger employees within a context that they could relate to.
Strategic connection	Performance enablement	Younger employees experienced significantly lower levels of commitment to the purpose of the organisation and as such the measurement of goals had to be reconsidered.
Individual congruence	Organisational design Functional design Work design	Younger employees experienced a significantly lower level of individual congruence than their older counterparts and as such meaningful work design practices had to be applied and forums established in order for younger employees to be involved in decision-making.
Manager effectiveness	Leadership development	Length of tenure in the organisation indicated a higher need for leadership development.
Manager effectiveness	Coaching	Length of tenure in the organisation indicated a higher need for leadership development.
Enabling environment	Communication channels	Different age groups in the environment expressed different needs in terms of an enabling work environment. Safety and security was mentioned as an influencing factor with female employees showing a greater need for safety within the work environment than their male counterparts.
Psychological Attachment Construct	Intervention	Influencing factor
Commitment	Job rotation Career pathing	Younger employees experienced lower levels of commitment which was a result of the younger employees being disempowered within their job roles and status within the organisation
Absorption	Meaningful work design for younger employees	Younger work force was less absorbed in their work roles due to the fact that responsibilities were assigned to older employees with a lack of voice and decision-making occurring at lower levels
Employee motivation	Communication and Feedback mechanisms Clear goal-cascading Job design	Younger employees did not feel involved in decision-making and had the perception that their contribution was not significant in terms of the broader organisational purpose

Table 3.5 indicates that demographic differences influence the applicability of interventions with regard to their impact on people effectiveness enablers. Hence, they should be a key

consideration when choosing appropriate intervention target audiences for improving levels of psychological work immersion.

In terms of the research setting, race was not seen as a contributing factor to the interventions required to enable improvement in the levels of psychological attachment and, by implication, organisational effectiveness.

3.6 IMPLICATIONS FOR ORGANISATIONAL DEVELOPMENT PRACTICES AIMED AT IMPROVING ORGANISATIONAL EFFECTIVENESS AND BUSINESS PERFORMANCE

Based on the above discussion, it is clear that the research suggests that the PWIS (Veldsman, 2013) can be seen as an effective measure of people effectiveness enablers and psychological attachment in the knowledge economy workplace. The PWIS (Veldsman, 2013) has also demonstrated its relevance as a measuring instrument for identifying organisational development interventions aimed at improving the levels of psychological work immersion. Psychological work immersion has been shown to be an effective indicator of people effectiveness within the broader domain of organisational effectiveness owing to its relevance to knowledge economy work practices. In addition, human capital has been identified as a key source of competitive advantage in the knowledge economy workplace and thus the PWIS (Veldsman, 2013) as a measure of people-related factors has been shown to be a valid and reliable measure of people effectiveness in different contexts. Psychological attachment (commitment, absorption, employee motivation) has also been shown to have a key relationship with factors related to business performance such as profitability and productivity.

From an organisational development perspective, the research has identified a need to re-evaluate the key focus of organisational development interventions in terms of their applicability to not just the profit sector but also the not-for-profit sector. The NPO sector, especially in the South African context, has been shown to be an important contributor to service provision in areas previously supported by the public sector. Organisational effectiveness, in this context, has become crucial in terms of the sustainability of these organisations, as well as the ability to secure funding into the future.

The research has also shown that organisational development interventions are influenced by demographic factors such as age, race, tenure and gender; it has been found that these interventions are influenced by the target audience applicable to the intervention. Therefore, organisational development practices should consider these parameters when designing relevant interventions to improve organisational effectiveness.

3.7 EVALUATION AND SYNTHESIS

The literature clearly indicates that the knowledge economy can be described as a volatile and ever-changing landscape. Organisations are expected to be more productive with fewer resources, yet the consumer-led and driven economy has reshaped how and where organisations are expected to meet the needs of their consumers. Competitive advantage and organisational sustainability within this domain are largely influenced by the ability of the organisation to create, develop and retain knowledge in order to drive economic prosperity. At the centre of knowledge creation lies the contribution of human capital as a catalyst for knowledge creation through the application of abilities and skills to embed new knowledge in practice. However, in the knowledge economy context the nature of the workforce has changed significantly with virtually and geographically distributed organisations becoming the norm.

Organisational effectiveness and the factors that contribute to effectiveness have become a strategic priority. The literature shows that traditional views of organisational effectiveness have been largely limited and one-sided and that the knowledge economy has demanded a more robust perspective that also includes the contribution of people effectiveness. Traditionally, reactive measurement approaches to people effectiveness were applied to provide an indication of the past events that influenced organisational effectiveness and, by implication, business performance. By contrast, the knowledge economy landscape demands measurement models that can also provide predictive insight into the future and the factors that need to be influenced now in order to be able to drive future organisational outcomes.

The review of the organisational effectiveness literature and related models has shown that even though no one definition exists there is consensus on the importance of the construct, its relevance to the knowledge economy workplace and the need for a redefinition of the concept in terms of the knowledge economy requirements. Various models of organisational effectiveness exist and a complementary stance is required that does not view one model as absolute but rather regards the different models as contributing an additional component to understanding the broader concept. However, the literature clearly indicates that organisational effectiveness models over time were influenced by the development of open systems theory and that environmental influencing factors entered the domain and shifted the perspective of the organisation as a closed system to an open system that should be seen within the context of the environment within which it operates. This shift resulted in viewing organisational effectiveness not just from a criteria-based approach but also as being aligned to theoretical concepts such as goal attainment, optimal functioning and the

ability to acquire and apply resources to achieve organisational purposes. The literature further reveals the inclusion of people effectiveness related factors in the organisational effectiveness domain through the acknowledgement that human capital, especially within the context of the knowledge economy, lies at the heart of the ability of the organisation to perform.

Furthermore, the literature indicates a clear link between work engagement and organisational performance. Work engagement, largely influenced by the original work carried out by Kahn (1990), has gained prominence in knowledge economy organisations in an attempt to leverage human capital as a source of competitive advantage. Accordingly, organisations have attempted to understand the factors that need to be in place in order to be able to create an environment conducive to driving employee performance. Models such as the JD-R model conceptualised by Demerouti (1999) and adapted by Bakker and Schaufeli (2004) have become relevant as organisations aim to understand what resources should be present at both the organisational and the individual level in order to create an environment that is conducive to engagement and individual performance. The shift in focus, from a reactive approach to fixing problems that already exist in the organisation to a proactive approach in which an environment is created that is conducive to performance, has resulted in an emphasis on understanding the factors that create states of psychological flow in organisations.

The theoretical perspectives referred to above provided the underpinning framework that influences psychological work immersion, as well as the measurement criteria applicable to the PWIS (Veldsman, 2013) as a measure of people effectiveness. The PWIS (Veldsman, 2013) has been applied in various industries to understand how organisational development interventions can be focused on improving people effectiveness enablers (manager effectiveness, strategic alignment, individual congruence, appreciative feedback, enabling environment, intra-team effectiveness) in order to drive higher levels of psychological attachment (commitment, absorption, intrinsic motivation), which would lead to higher experienced levels of psychological work immersion in the organisation. Psychological work immersion levels, as measured by the PWIS (Veldsman, 2013), have been shown to be an indicator of people effectiveness and have clear links to both the individual and perceptions of business performance. As such, the PWIS (Veldsman, 2013) can be applied as a measure of people effectiveness within the broader domain of organisational effectiveness in knowledge economy organisations.

The literature also indicates a shift in terms of the role of the industrial and organisational psychologist with regard to the need to apply knowledge to improve organisational

effectiveness in the not-for-profit sector. This shift, especially within the South African environment, has been largely due to high levels of inequality and a lack of governmental capability to deliver services related to enabling youth development and sustainable economic activity in the future to the public.

The above literature review has identified a number of gaps which this research aims to address:

- There are limited studies that aim to identify both the causes (people effectiveness enablers) and the antecedents (commitment, employee motivation, absorption) of people variables as an element of organisational effectiveness.
- There are limited studies that aim to identify the people effectiveness contribution to the broader organisational effectiveness perspective.
- There are limited studies that relate people variables to business performance which encapsulates a predictive perspective.
- There are limited studies that equate financial indicators of performance such as profit/loss, costs and cash flow from operating activities to psychological work immersion indicators such as commitment, intrinsic motivation and absorption.

This study seeks to contribute new knowledge on understanding the contribution of people variables to organisational effectiveness, as well as the relationship between people variables and financial business indicators. The study aims to explore whether this relationship could be applied to inform business decision-making and redefine the role of the organisational development practitioner as a strategic role player who enables the organisation to operate sustainably into the future. From a research hypothesis perspective, the study expects to find a relationship between psychological work immersion, as an indicator of people effectiveness, and business performance indicators, as defined by profit/loss, costs and cash flow from operating activities.

3.8 CHAPTER SUMMARY

This chapter addressed the literature research aims by conceptualising the Psychological Work Immersion Scale (PWIS) (Veldsman, 2013) in terms of the underlying theory and constructs that inform the scale. The chapter described the PWIS (Veldsman, 2013) within the context of knowledge economy organisations in order to be able to understand the relevance of the scale within the domain of organisational development practices. The chapter explored the psychometric properties of the PWIS (Veldsman, 2013) and concluded with an overview of the applicability of the scale in identifying relevant interventions aimed at

improving psychological work immersion within the organisational development domain. The chapter concluded by reflecting on the implications for organisational development practices in terms of the usefulness and applicability of the PWIS (Veldsman, 2013) as a predictor of business performance.

Accordingly, the following literature research aims have been achieved:

- **Research aim 1:** Conceptualise organisational effectiveness and its relationship to people effectiveness and business performance
- **Research aim 2:** Conceptualise psychological work immersion as an indicator of people effectiveness
- **Research aim 3:** Describe the theoretical association between psychological work immersion and business performance
- **Research aim 4:** Describe the implications for people practices relating to organisational effectiveness and business performance

Chapter 4 will focus on the empirical research aims of the study by evaluating the PWIS (Veldsman, 2013) as an effective measure of people effectiveness at two points in a time in a defined research setting. The empirical research will also explore the PWIS (Veldsman, 2013) as a valid measurement model in terms of test-retest reliability and evaluate whether the PWIS (Veldsman, 2013) can be applied as a predictive measure of perception of business performance indicators over time.

CHAPTER 4: EMPIRICAL STUDY

The focus of this chapter is to provide an overview of the statistical approach and methods applied to assess whether psychological work immersion is a valid predictor of perceptions of business performance indicators (profit/loss, costs, cash flow from operating activities) over time. The chapter will include a summary of the sample applicable to this research and will present the sample within the context of the broader population. The PWIS as the measuring instrument applicable to this study will be presented and the rationale for its use will be explained. The chapter further aims to discuss the data gathering processes and statistical processing methods which led to the formulation of the research hypotheses as previously stated.

The empirical research steps applicable to this study are outlined as follows:

- Step 1: Choosing and justifying the use of the psychometric battery
- Step 2: Identifying and describing the sample
- Step 3: Ethical considerations and administration of the psychometric battery
- Step 4: Capturing of criterion data
- Step 5: Formulation of research hypothesis
- Step 6: Statistical processing of data
- Step 7: Reporting and interpreting the results
- Step 8: Integrating the research findings
- Step 9: Conclusions, limitations and recommendations

Chapter 4 focuses on steps 1 to 6 of the empirical research; steps 7 to 9 will be discussed in Chapters 5 and 6.

4.1 DETERMINATION AND DESCRIPTION OF THE SAMPLE

The purpose of sampling is to be able to make inferences about a population by studying a representative subset (Acharya, Prakash, Saxena, & Nigam, 2013). Sampling refers to the process whereby individuals are chosen from the broader population based on criteria which are deemed of interest to the researcher (Hair, Black, Babin, & Anderson, 2010). Tredoux and Durrheim (2013) state that the applicability of a sample to the broader population is informed by a number of key considerations; when deciding on a sampling technique the researcher should be guided by the applicable research aims and questions.



The present study used secondary data obtained from a specific organisation in the South African not-for-profit sector. The data was originally collected by an organisational development consultancy in South Africa. The organisation targeted as part of this research study, strives to provide developmental services for community centres across South Africa, with the aim of providing young learners from previously disadvantaged areas with support in the form of educational, health and social services to drive a cradle-to-career approach to human development. For the purpose of this study, the data that were used stemmed from a purposive sample (all employees targeted) of employees within the specific organisation. The data were collected by the organisation at a specific point in time (T1) and again after a period of 14 months (T2), as part of its organisational effectiveness improvement strategy. Data was collected through the use of on-line questionnaires that was administered by the organisational development consultancy who granted the researcher access to the data with the consent of the targeted organisation.

In terms of sampling criteria, the population targeted consisted of different races, genders and ages, with varying tenures and qualifications. These criteria were deemed to be relevant owing to their contextual relevance to the broader South African workforce, making this an applicable setting for the research. The sampling technique applied in this study was a non-probability purposive sampling technique. This type of sampling may be defined as the process of approaching research with a specific sampling purpose that is aligned to the defined research question, and selecting participants on the basis of criteria applicable to the research aims (Acharya et al., 2013).

The sample applicable to this study was measured at two defined points in time over a 14-month period. At T1, the broader population consisted of $N = 501$, with the sample consisting of $n = 414$ useable questionnaires. This indicated a sample that consisted of 82% of the broader population. The majority of participants in the population were based either in Gauteng or the Western Cape, but other provinces in South Africa also formed part of the research study. At T2, the population consisted of $N = 551$, with the sample size being recorded as $n = 482$ useable data, thus indicating an 87% participation rate.

The biographical variables in terms of age, gender, race and tenure were included based on the literature review, which pointed to these as areas of interest that should be explored when evaluating psychological work immersion within the South African context. These parameters were also used as control variables in the study in order to make inferences about the sample.

The following section will describe the sample at both data collection points, namely, T1 and T2, and will conclude by providing a summary of the similarities and differences within the sample.

4.1.1 Composition of age groups in the sample: T1

The composition of age groups in the sample applicable to T1 is illustrated in Figure 4.1.

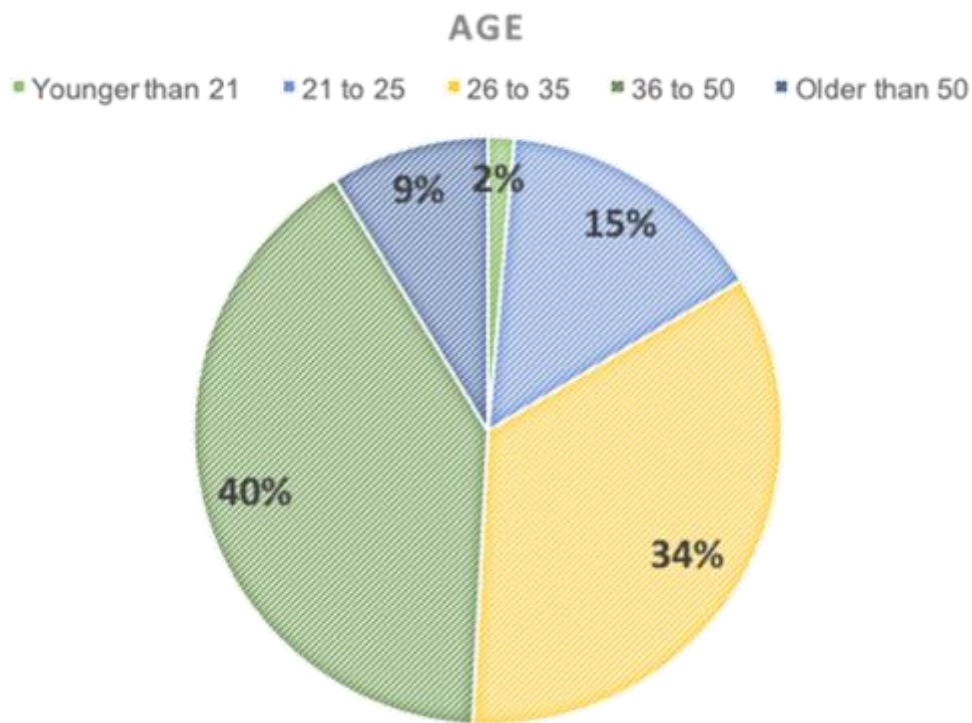


Figure 4.1. Age demographics for T1

As illustrated by Figure 4.1, the majority of the sample (T1) consisted of participants who were between the ages of 36 and 50, with 40% of participants recording their ages within this range. Thirty-four per cent of participants, on the other hand, reported being between the ages of 26 and 35. The other categories consisted of 15% of participants who were older than 50, and 9% of participants who were between the ages of 21 and 25. The remaining 2% of the sample consisted of employees reporting to be younger than 21 years. The rationale for displaying the age demographical parameters according to the defined ranges is based on previous research in the domain of psychological work immersion conducted by Coetzee and Veldsman (2013). According to these authors, this enables the provision of comparative data to understand the impact of age on the experienced levels of psychological work immersion.

4.1.2 Composition of age groups in the sample: T2

The composition of age groups in the sample applicable to T2 is illustrated in Figure 4.2.

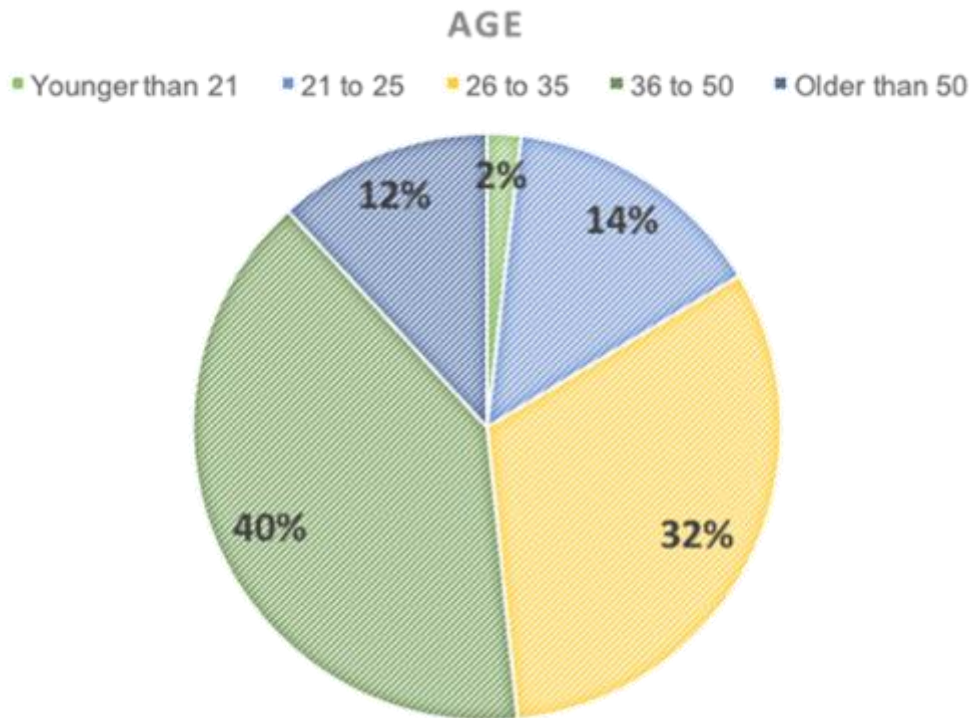


Figure 4.2. Age demographics for T2

At T2, 40% of the sample consisted of participants between the ages of 36 and 50, with 32% of participants between the ages of 26 and 35. In addition, 14% of the sample comprised participants who were reportedly older than 50, 12% between the ages of 21 and 25 and the remaining 2% were younger than 21. From a range perspective, the applicable age demographical ranges were consistent with T1.

4.1.3 Composition of gender groups in the sample: T1

Figure 4.3 provides an overview of the gender make-up of the sample for T1. As depicted by the figure, the sample ($n = 414$) consisted of 11% male and 85% female participants. Although this sample contained a majority of female participants, this was reflective of the broader population as the sample represented 82% of the population. The remaining 4% of participants opted not to provide a descriptor in terms of gender characteristics. Figure 4.3 illustrates the gender characteristics accordingly.

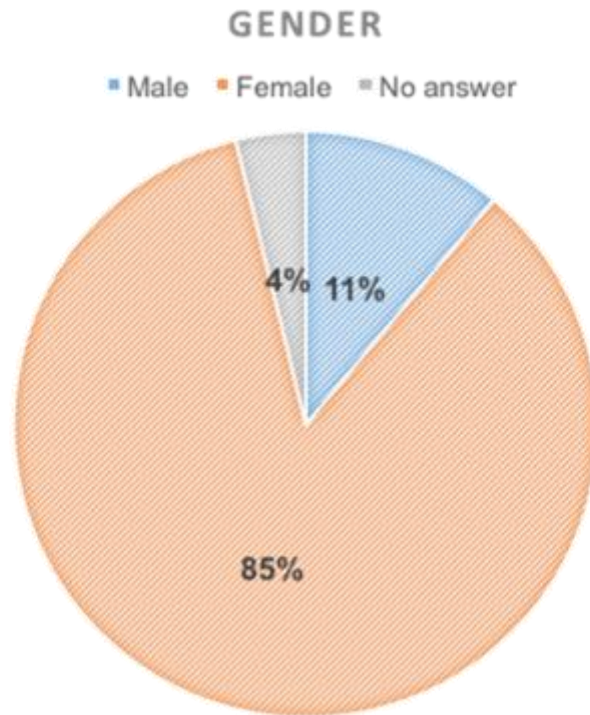


Figure 4.3. Gender demographics for T1

4.1.4 Composition of gender groups in the sample: T2

Figure 4.4 provides an overview of the gender sample for T2. As depicted in the figure, the sample (n = 482) consisted of 15% male and 79% female participants. This indicates a slight increase in male participation at T2; however, the majority of the sample still consisted of females. At T2, 6% of participants chose not to disclose their gender.

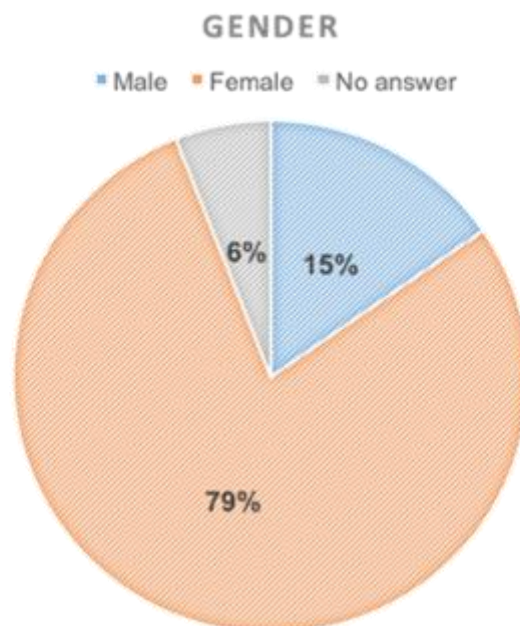


Figure 4.4. Gender demographics for T2

4.1.5 Composition of race groups in the sample: T1

From a race perspective, the sample was explored according to the following categories: white, African, Asian and coloured. An additional category was also included that allowed participants not to disclose their race. The sample at T1 consisted predominantly of African participants (72%), 18% coloured participants, 1% white and 1% Asian participants. Of the sample, 8% of participants chose not to disclose their racial status. Figure 4.5 provides an overview of the racial characteristics of the sample at T1.

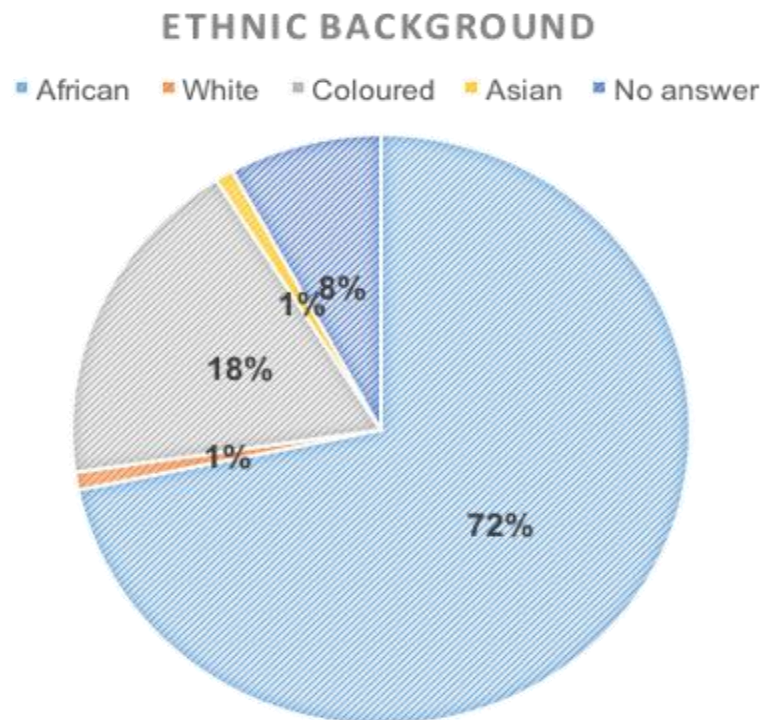


Figure 4.5. Racial demographics for T1

4.1.6 Composition of race groups in the sample: T2

At T2, the racial characteristics of the sample can be illustrated by Figure 4.6.

ETHNIC BACKGROUND

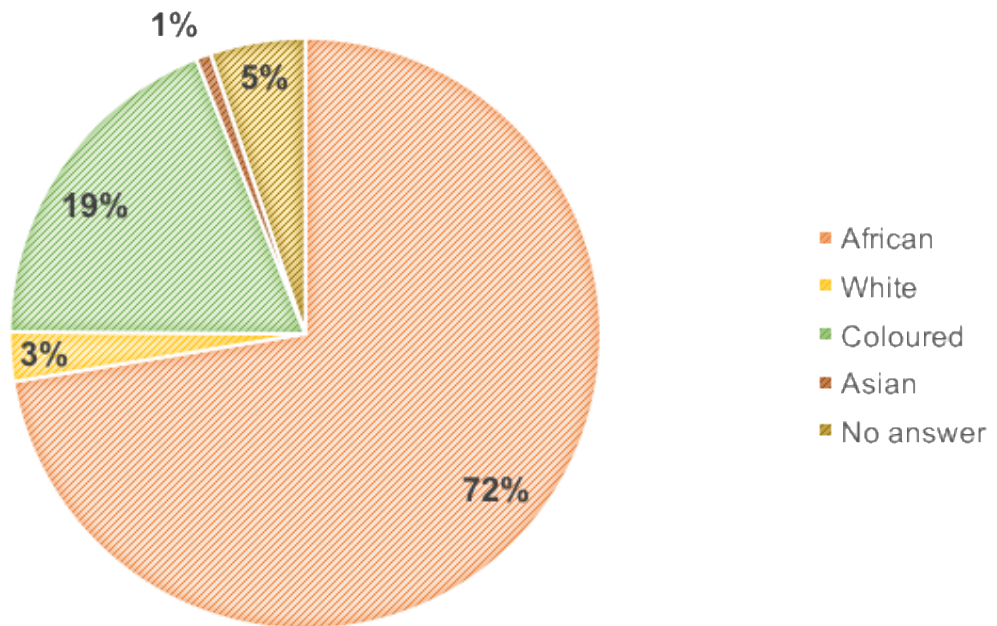


Figure 4.6. Racial demographics for T2

The sample at T2 consisted predominantly of African participants (72%), 19% coloured participants, 3% white and 1% Asian. Of the sample, 5% of participants chose not to disclose their racial status. A comparison of T1 and T2 thus displays no significant changes in terms of the ethnic characteristics of the sample, which was to be expected.

4.1.7 Composition of tenure groups in the sample: T1

From a tenure perspective, Figure 4.7 displays the characteristics of the tenure within the organisation. The sample consisted mainly of participants who had been with the organisation between three and five years (32%). Twenty-five per cent of participants had been with the organisation between one and two years, whilst 6% reported being with the organisation for more than 10 years. At the time of the study, 18% of participants reported having been with the organisation for less than a year.

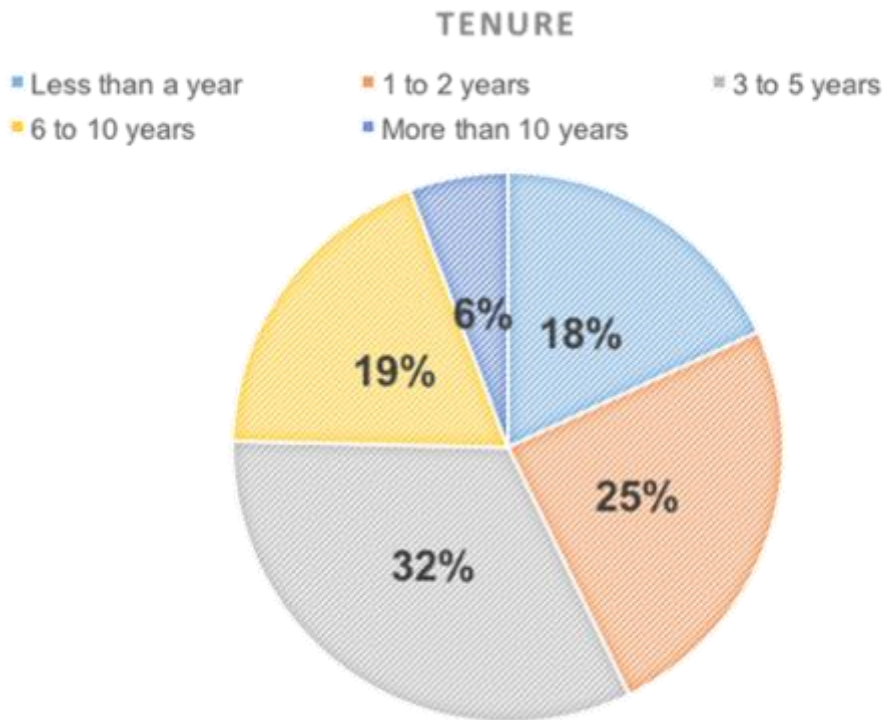


Figure 4.7. Tenure demographics for T1

4.1.8 Composition of tenure groups in the sample: T2

At T2, the tenure groups in the organisation can be described by Figure 4.8.

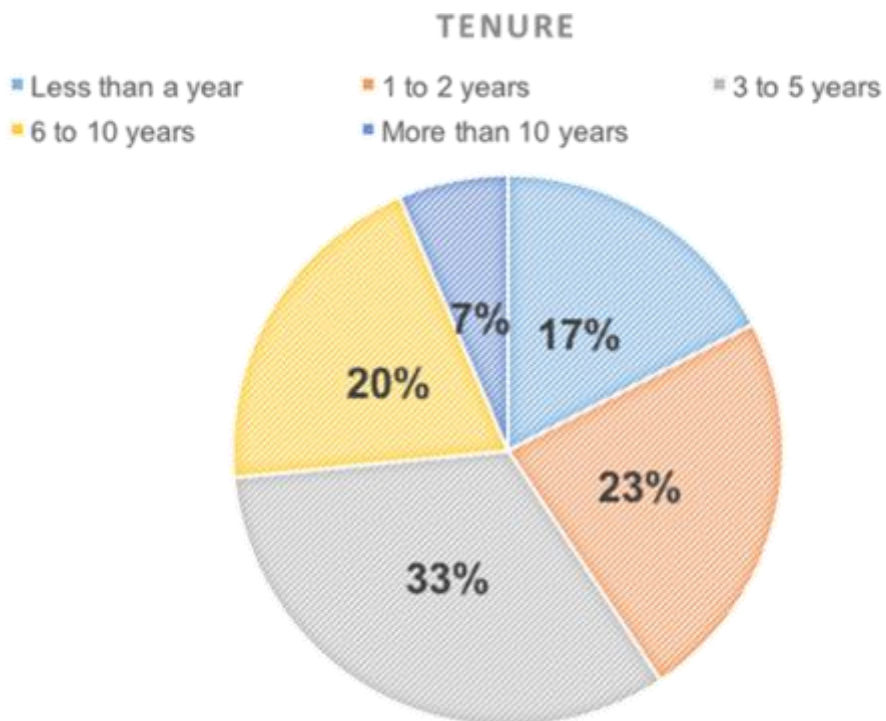


Figure 4.8. Tenure demographics for T2

At T2, the sample consisted mainly of participants who had been with the organisation between three and five years (33%). Twenty-three per cent of participants had been with the organisation between one and two years, whilst 7% reported being with the organisation for more than 10 years. Seventeen per cent of participants reported having been with the organisation for less than a year at T2. This could potentially also indicate new participants joining the organisation during the 14-month interval between T1 and T2, which would explain the percentage of participants falling into the 'less than a year' category.

4.1.9 Summary of sample socio-demographic profile

In summary, the socio-demographic profile obtained for the sample showed that the main considerations in terms of sample characteristics were related to age, gender, race and tenure for both samples of the population at T1 and T2. In the sample, participants' age ranged predominantly between 36 and 50 years at both T1 and T2. Figure 4.9 compares the age of the samples between T1 and T2.

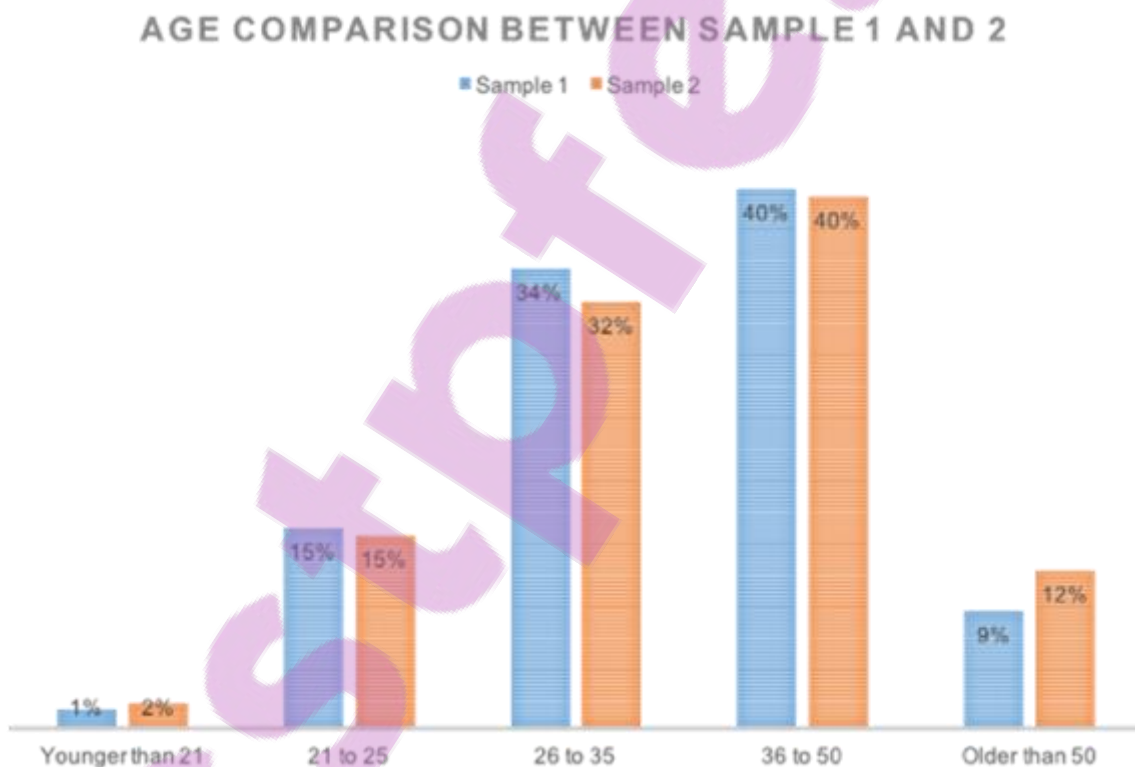


Figure 4.9. Age comparison between sample 1 and 2

In terms of gender, the sample at T1 consisted of predominantly female participants (85%), which is similar to the profile obtained for T2, where 79% was reported to be female. Figure 4.10 compares the gender make-up of T1 and T2.

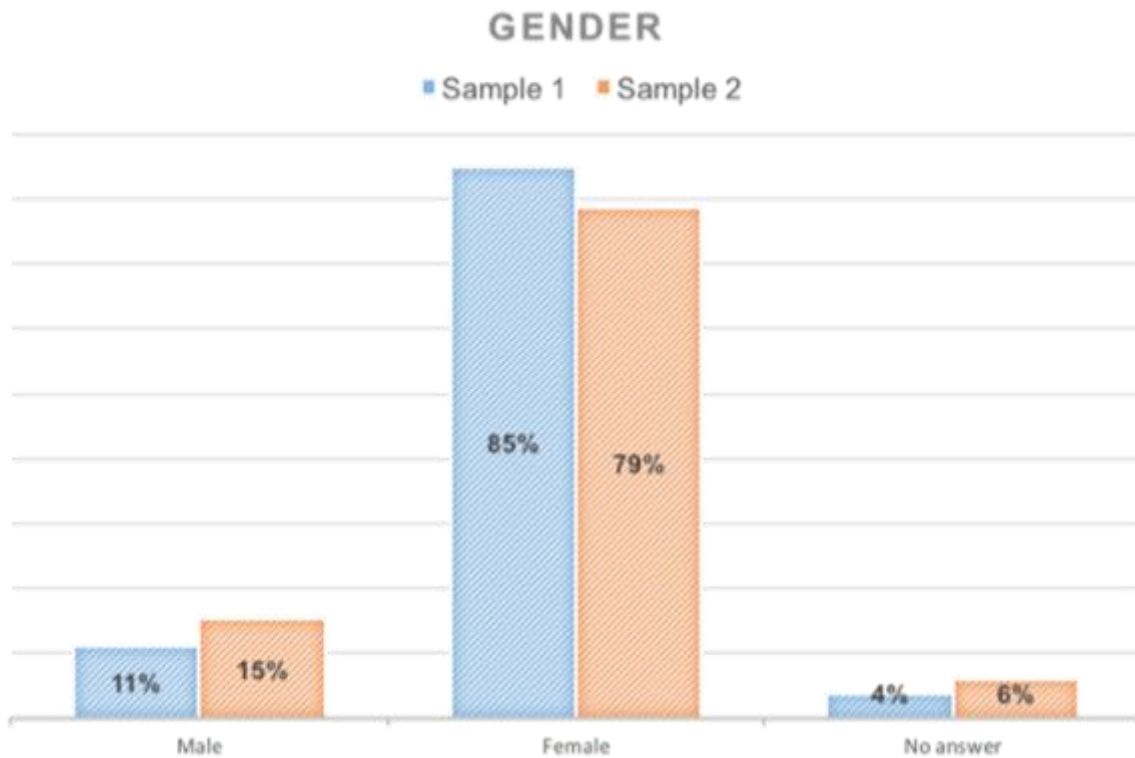


Figure 4.10. Gender comparison between samples 1 and 2

From a race perspective, the sample at T1 consisted predominantly of African participants, that is, 72%, a percentage which remained consistent at T2 (72%). Figure 4.11 displays the racial characteristics for both samples.

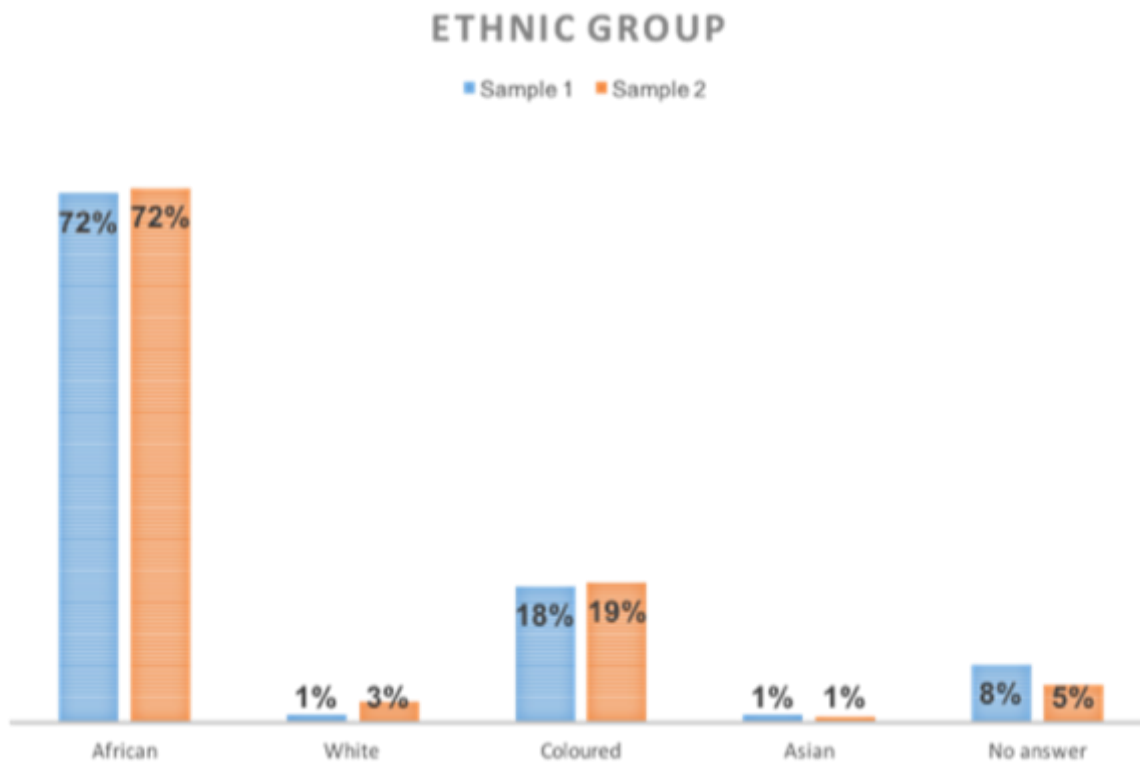


Figure 4.11. Ethnic group comparison between sample 1 and 2

The samples can also be described in terms of tenure; a similar trend was reported in terms of tenure at both time periods. The majority of both samples had been with the organisation between three and five years (33%), with a notable split between the other tenure categories. Figure 4.12 illustrates the tenure profile of the sample at T1 and T2.

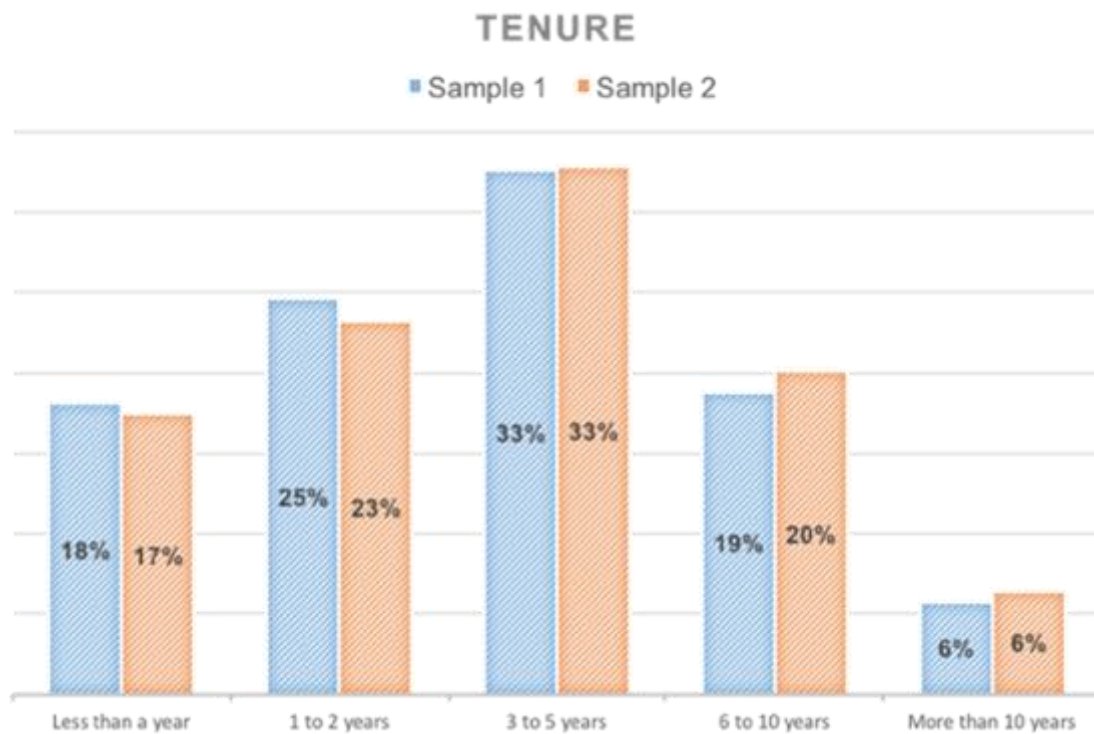


Figure 4.12. Tenure group comparison between samples 1 and 2

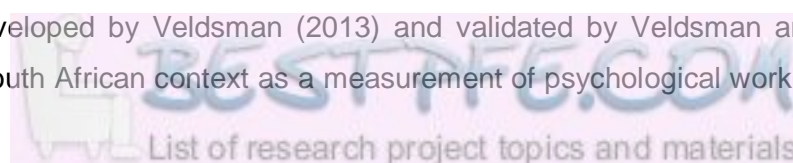
4.2 CHOOSING AND JUSTIFYING THE USE OF THE PSYCHOMETRIC BATTERY

The selection of the psychometric battery was informed by a review of the literature related to the concept of psychological work immersion and business performance within the context of the organisational effectiveness. The Psychological Work Immersion Scale (PWIS) was selected on the basis of its relevance to the models applicable to this study, the theoretical foundation that informed the research, as well as its validity, reliability and cost-effectiveness and its suitability for assessing the constructs relevant to this research.

The following section will discuss the PWIS as a research instrument and its applicability to the present study.

4.2.1 Psychometric properties of the Psychological Work Immersion Scale (PWIS)

The PWIS was developed by Veldsman (2013) and validated by Veldsman and Coetzee (2014) within the South African context as a measurement of psychological work immersion.



The following section will discuss the rationale, description, administration, interpretation, validity and reliability of the scale, as well as the reasons for choosing the PWIS as a measurement instrument for this study.

4.2.1.1 *Rationale for the PWIS*

The PWIS is a 30-item self-report inventory consisting of multiple factors in nine sub-scales, which can be categorised as follows:

- People effectiveness enablers (manager effectiveness, individual congruence, strategic connection, appreciative feedback, enabling environment, intra-team effectiveness)
- Psychological attachment variables (commitment, absorption and employee motivation).

The PWIS aims to measure employee perceptions of their experienced levels of psychological work immersion in the organisation. In this study, it was applied in order to enable a comparison between the levels of psychological work immersion and their potential relationship to perceptions of business performance indicators (profit/loss, costs, cash flow from operating activities).

4.2.1.2 *Dimensions of the PWIS*

The PWIS (Veldsman, 2013) is a 30-item (9 subscales) Likert-type measure (1 = strongly disagree; 4 = strongly agree) of individuals' perceptions of six people effectiveness enablers (manager credibility, appreciative feedback, strategic connection, intra-team effectiveness, enabling environment and individual congruence) and psychological attachment variables (commitment, absorption and motivation). Table 4.1 gives an overview of the constructs, number of items and item examples associated with the PWIS (Veldsman, 2013).

Veldsman (2013) conducted exploratory factor analysis and Rasch analysis to reveal acceptable construct validity and internal consistency reliability for the scale. The Cronbach's alpha coefficient for the overall people performance enabler subscale was .90 and .81 for the overall psychological attachment subscale. The PWIS (Veldsman, 2013) inter-subscale correlations ranged between $r \geq .27$ and $r \leq .83$ (small to large practical effect size), suggesting acceptable construct validity according to the guidelines of Tabachnik and Fidell (2007).

Table 4.1.

PWIS Constructs and Items

<u>People effectiveness enablers</u>			
Construct	Dimension definition	Number of items	Example items
Manager effectiveness	The extent to which managers are able to connect employees psychologically to the organisational purpose by treating them in a respectful, fair and consistent manner and establishing a trust relationship	3	Does your manager treat everybody fairly and consistently?
Appreciative feedback	The perceived meaningfulness of performance discussions and the extent to which employees receive feedback on their performance and strengths	3	How often does your manager give feedback on how well you are doing?
Strategic connection	The perceived connection between the organisational goals and the expected contributions of employees	3	How often does management talk about what the organisation needs to be good at in order to achieve its goals?
Intra-team effectiveness	The extent to which the employee perceives co-workers as competent, being treated with dignity and respect and being supported by members of the team in achieving goals	3	Do the people in your section help and support each other when you have to achieve a goal?
Enabling environment	The extent to which the employee perceives the policies, procedures and physical environment in the organisation as enabling for work performance	3	Do the policies and procedures in the organisation enable you to do your job?
Individual congruence	The employee's perceived fit between her/his strengths, competencies and skills and the requirements of the job	6	To what extent does the work you do help your organisation to achieve its goals?
<u>Psychological attachment</u>			
Construct	Dimension definition	Number of items	Example items
Commitment	The extent that the individual identifies with the organisational purpose and the underlying value system present within the organisation	3	Do you believe in the organisation and what it stands for?
Absorption	The levels of attachment that an individual feels towards his/her work	3	Do you ever find that you want to continue with your work in your free time?
Employee motivation	The intrinsic drive that results in individual energy and influences the levels of enjoyment experienced by employees within the work environment	3	Do you feel happy and cheerful when you are doing your work?

4.2.1.3 Administration

From a primary data collection approach, the PWIS (Veldsman, 2013) is administered online at an individual level. The instrument takes 25 to 40 minutes to complete. Clear instructions are provided for completion and there is no time limit on the completion of the questionnaire. No supervision is required for the instrument owing to the self-explanatory nature of the items. Respondents are required to respond to statements regarding their levels of agreement with the statements by relating them to a four-point Likert scale. No negatively scored items are included in the instrument.

The study utilised secondary data that was already collected by an organisational development consultancy within the South African environment.

4.2.1.4 Interpretation

The questionnaires completed by the respondents were each scored electronically. Higher levels of agreement displayed higher experienced levels of psychological work immersion within the work environment. Each of the sub-scales was calculated separately in order to display the individual responses on the scale in terms of the applicable dimensions (people effectiveness enablers, psychological attachment). A higher score indicates that respondents experienced that dimension more positively within the work environment. Responses are measured in terms of the following parameters on the Likert scale:

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Agree
- 4 = Strongly agree

4.2.1.5 Reliability and validity of the PWIS

Coetzee and Veldsman (2013) reported acceptable internal consistency, reliability and construct validity for the PWIS in a South African organisational context. In addition, exploratory factor analysis and Rasch analysis revealed acceptable construct validity and internal consistency reliability for the scale (Veldsman, 2013). The Cronbach's alpha coefficient for the overall people effectiveness enablers subscale was .90, and .81 for the overall psychological attachment subscale. The PWIS (Veldsman, 2013) inter-subscale correlations ranged from $r \geq .27$ to $r \leq .83$ (small to large practical effect size), suggesting acceptable construct validity according to the guidelines of Tabachnik and Fidell (2007). In the present study, the psychometric properties of the PWIS (Veldsman, 2013) were retested based on the data collected at two points in time in the targeted organisation.

4.2.1.6 *Motivation for using the PWIS*

The PWIS is easy to administer as the instrument can be administered online and is compatible with mobile devices. The on-line nature of the instrument further allows for immediate collation of responses and good data integrity measures that form part of the technology infrastructure. The PWIS has further been found to be valid and reliable within the South African environment. The instrument was designed to measure the characteristics related to psychological work immersion, which formed part of this study, and was thus deemed to be relevant and applicable to the study at hand. Because it had been developed within the South African context, the instrument was furthermore deemed relevant and applicable, as the targeted sample was representative of this particular parameter.

4.2.1.7 *Motivation for use of the business indicators and development of industry norms*

The business indicators chosen to form part of this study were based on an approach suggested by Kaplan and Norton (2001). This approach proposes that organisations should measure business indicators that are specific to their context and also crucial to the success of the specific organisation. For the purpose of this study, three business indicators (profit/loss, operating costs, cash flow from operating activities) were identified that were critical to the current and future sustainability of the organisation. The measures relevant to the study were identified by the organisation as key measures of success and as such were used as monitoring mechanisms at a Board level to ensure the sustainability of the business going forward. As such, these measures were thought to be relevant due to the importance that the organisation relevant to the study attached to their meaning. This approach is consistent with the abovementioned approach from Kaplan and Norton (2001) that state that organisations should define, implement and monitor measures that they deem to be critical and vital to their success. These measures were also deemed to be relevant due to their comparability with industry norms and the critical role that these measures play in evaluating the sustainability of organisations relevant to the industry explored as part of this study.

Financial health measures were used to generalise organisational performance and to enable a comparison with relevant industry norms. This step was undertaken to ensure that organisational performance could be evaluated relative to similar organisations in the market. This approach is in line with suggestions by Investopedia (2016), as a measure for evaluating the relative performance of an organisation within the context of the chosen industry and other peer organisations.

The study further evaluated individual employee perceptions of performance in order to be able to compare the PWIS with actual business performance for T1 and T2. This approach was in line with the bootstrapping approach suggested by Hayes (2013) and employed

principal component analysis to create a weighted score for each of the three business indicators.

4.2.2 Limitations of the psychometric battery

The PWIS is based on a self-report measurement approach. Self-reporting measurements have a number of disadvantages that need to be taken into consideration (Kormos & Gifford, 2014):

- Individuals tend to overestimate themselves and are prone to exaggeration.
- Social desirability bias, in terms of which respondents aim to answer in line with what they believe society dictates.
- Self-reporting approaches tend to be subjective by nature owing to the fact that scale descriptors could potentially have different interpretations depending on individual responders.

The PWIS was chosen as the instrument applicable to the study. However, the limitations of the measurement instrument will be taken into consideration when interpreting the research results and the findings of the present study.

4.3 ETHICAL CONSIDERATION OF ADMINISTRATION OF THE PSYCHOMETRIC BATTERY

From an ethical standpoint, the research followed a number of steps that are applicable to responsible and transparent research within the social sciences domain. Ethics refers to the concern pertaining to what is good and right in terms of human interaction and is focused on both the self and the other during the research process (Goosen & Van Vuuren, 2005). As secondary data were used for this study, permission was obtained from the relevant consulting firm as well as from the organisation applicable to this study. Ethical clearance for the research study was also obtained from the University of South Africa's Research Committee.

The primary data collection approach followed by the organisational development consultancy was evaluated by the researcher before conducting the study to ensure that responsible and ethical research practices were followed when collecting the original data. The primary data collection approach is described below.

In terms of the online completion of the instrument, informed consent was obtained from all participants in the specific organisation as part of the primary data collection process. Participation in the study was voluntary in nature and a thorough explanation was provided

of the purpose of the study by means of both a presentation conducted with the management of the organisation and participation letters which were distributed to all the participants before the research study commenced. The study and the approach ensured that no details were disclosed that could compromise the confidentiality and anonymity of participants. Moreover, no identifying information was required that could potentially lead to a breach of confidentiality or anonymity. Participant names were not recorded at any point during the data collection process and participant answers were given a fictitious code or pseudonym, which was used for reporting the research.

Completed questionnaires were submitted online to an external service provider to further ensure confidentiality. Informed consent was obtained from all participants and the invitation to participate in the online questionnaire explained that participation would be deemed to be proof of informed consent from all participants, as well as consent to use the results for research purposes. Direct or indirect coercion was avoided and no form of incentive was provided to induce participants to participate in the research study.

The consent letter that formed part of the online invitation to participate in the research included the following information:

- purpose of survey
- possible risks and benefits of the research
- the nature of the questions
- methods (questionnaire)
- participants' role in the research study
- the estimated time it would take to complete the questionnaire
- the identities of the researchers with their contact details
- details about privacy, anonymity and confidentiality
- future use of information
- the right of the participants to obtain help should the research cause them discomfort or distress
- the availability of researchers to assist participants with any concerns or discomfort.

Furthermore, the requirements for the use of psychological tests in the South African environment were taken into consideration in line with the Employment Equity Act 55 of 1998, which requires all assessments to be fair, valid and reliable and not biased against any group of employees. For the purpose of this research, the PWIS has been previously shown to be valid and reliable for use within the South African context and, as such, was chosen as a suitable instrument for this research.

The researchers ensured that the benefits of the research outweighed any potential risks and that the risk threshold was kept to an absolute minimum whilst ensuring that the research outcomes were achieved. Research participants were also informed of their right to withdraw from the study at any given point without having to give any reason for their withdrawal. Precautions were taken to mitigate any potential risks that could occur during the research process. From a data collection perspective, only information that was relevant to the present study was collected and no exploitation of research participants occurred. Once a questionnaire had been collected, however, the participants could not withdraw as a result of the lack of relevant identifiers linking them to their specific questionnaire.

The research will benefit the organisation relevant to the study and as such feedback will be provided to support them to understand how the improvement of psychological work immersion could benefit the sustainability of the organisation in terms of the key performance indicators identified in this study.

4.4 CAPTURING OF CRITERION DATA

The primary data contained employee responses that were captured on a Microsoft Excel spreadsheet with each row representing a participant and the columns their responses to a research item. The file was provided to the researcher in a password protected format and the password shared separately from the original document. Data was imported and analysed using statistical methods, specifically the SPSS (Statistical Package for Social Sciences) Version 23 for the Microsoft Windows platform, SAS version 9.4 (Cary, 2013).

4.5 FORMULATION OF THE RESEARCH HYPOTHESES

The research hypotheses were formulated in line with the requirements of the study in order to achieve the relevant objectives and gain insight into the subsequent research questions. Table 4.2 below provides an overview of the research hypotheses formulated for this study.

Table 4.2.
Research Hypotheses

Research aim	Research hypothesis	Statistical procedures		
		Time 1 (T1) PWIS: Within-subject analysis	Time 2 (T2) PWIS: Within-subject analysis	Between time (T1–T2) comparisons (repeated measures)
Research aim 1: To empirically assess the psychometric	Ha1: The PWIS factor structure is a valid measure of the psychological	Common method bias testing Confirmatory factor analysis (CFA)	Common method bias testing Confirmatory factor analysis (CFA)	Repeated measures analysis: Comparison of fit indices across

properties of the Psychological Work Immersion Scale (PWIS) in terms of its validity as a measurement model (construct, discriminant and convergent validity) (time 1 versus time 2: within-subject analysis).	work immersion construct across time (T1 and T2)	Average variance extracted (AVE) Correlations Regression analysis	Average variance extracted (AVE) Correlations Regression analysis	sample 1 and sample 2 Comparison of correlations and AVEs across sample 1 and sample 2
Research aim 2: To empirically assess the test-retest reliability of the PWIS across time (time period of 14 months).	Ha2: The PWIS has acceptable internal consistency reliability across time (T1 and T2) Ha3: The PWIS demonstrates test-retest reliability across time	Composite and Cronbach's alpha coefficients Inter-correlations	Composite and Cronbach's alpha coefficients Inter-correlations	Comparison of reliability coefficients across sample 1 and sample 2 (paired t-tests) Comparison of correlations across sample 1 and sample 2

Research aim	Research hypothesis	Statistical procedures		
		Time 1 (T1) PWIS: Within-subject analysis	Time 2 (T2) PWIS: Within-subject analysis	Between time (T1-T2) comparisons (repeated measures)
Research aim 3: To empirically assess the predictive (criterion) validity of the PWIS in terms of perceptions of key business performance indicators (profit/loss, costs, and cash flow related to operating activities) across time (time 1 versus time 2: within-subject analysis comparisons)	Ha4: The people effectiveness enablers and psychological attachment variables significantly predict perceptions of business performance indicators (profit/loss, costs, and cash flow related to operating activities) Ha5: Strong perceptions of people effectiveness enablers relate to strong individual perceptions of business performance through a high sense of	Principal component analysis Mediation modelling Business performance relative to industry norms	Principal component analysis Mediation modelling Business performance relative to industry norms	Comparison of mediation models T1 and T2 Comparison of business performance in terms of industry norms T1 and T2

Research aim 4: To assess longitudinal links between psychological work immersion and business performance indicators (14-month time interval)	psychological attachment Ha6: The link between psychological work immersion and business performance increases over time with a significant increase in business performance	Means, standard deviations Business performance indicators (actual performance relative to industry norm)	Means, standard deviations Business performance indicators (actual performance relative to industry norm)	Comparison M & SD (paired t-test) Comparison in increase/decrease of business performance T1 versus T2
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4.6 STATISTICAL PROCESSING OF THE DATA

The statistical procedure relevant to this study was based on three stages. Stage one made use of descriptive statistics to describe the basic characteristics of the data set; namely, the mean and the levels of standard deviation and the way they represent the data set.

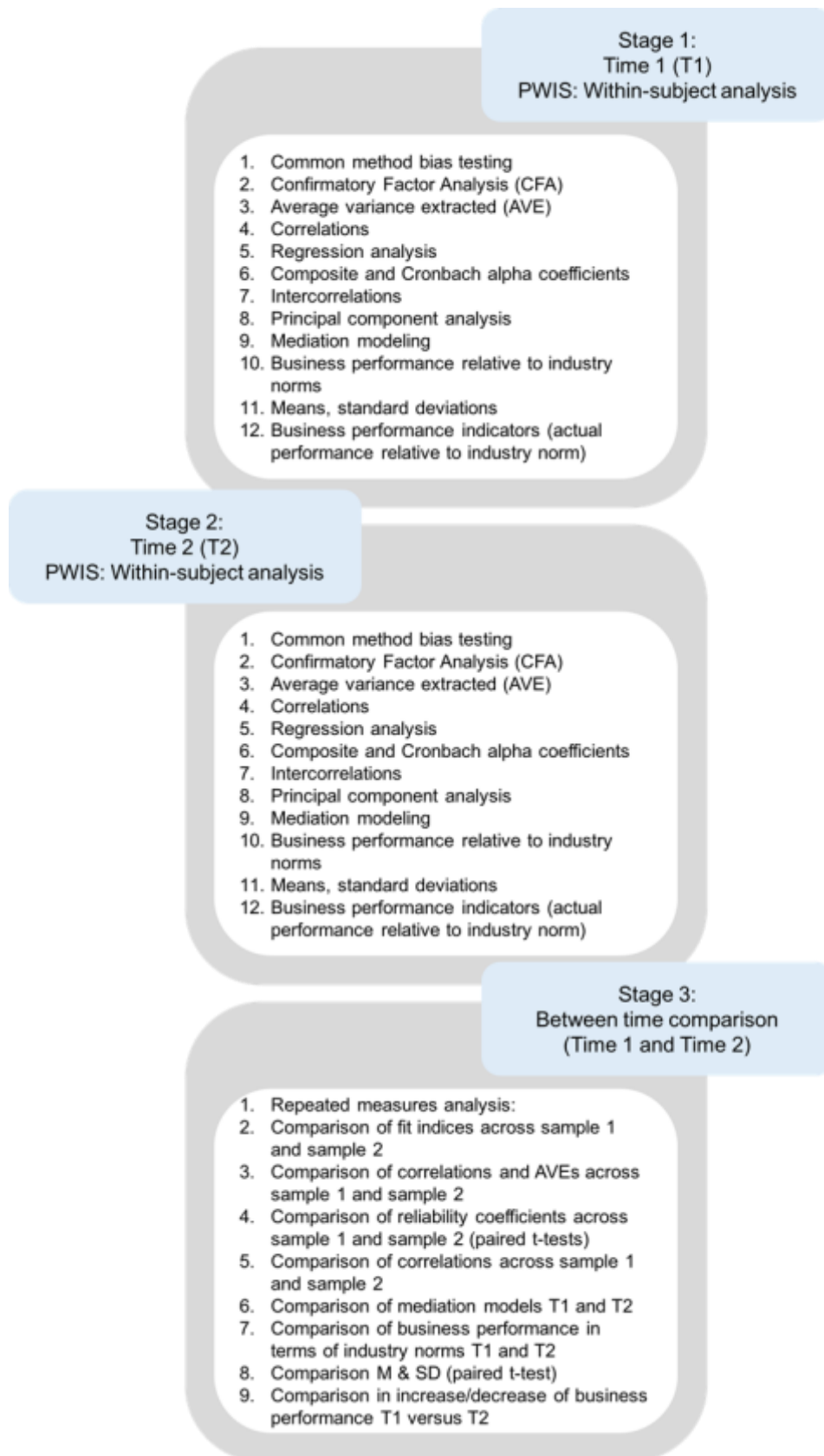


Figure 4.13. Data analysis process and statistical procedures per stage

Cronbach's alphas and composite reliability measures were used to determine the internal consistency reliability of the data. A number of statistical descriptors were used to describe

the data, including common method bias, confirmatory factor analysis, average variance extracted, inter-correlations, principal component analysis, regression analysis, mediation modelling and t-tests for significant mean differences. Stage 2 applied the same statistical techniques in order to provide an accurate comparison of T1 and T2 as per the requirements of the study. Stage 3 utilised inferential statistics to make inferences about the data with the aim of understanding potential trends applicable to the broader population. Figure 4.13 provides an overview of the three stages and the statistical steps that were applied in each stage.

In the following section, each of the stages and the applicable steps will be discussed.

4.6.1 Stage 1: Time 1 (T1) and Time 2 (T2): PWIS: Within subject analysis

This stage consisted of the following steps:

- determining the internal consistency reliability of the measuring instruments by means of the Cronbach's alpha coefficient and the composite reliability coefficient
- testing for common method bias by means of Harman's one-factor solution and a one-factor solution confirmatory factor analysis (CFA)
- testing the structural validity of the PWIS measurement model by means of CFA, correlations and average variance extracted (AVE)
- determining the means and standard deviations, kurtosis and skewness of the categorical and frequency data
- testing assumptions (inter-correlational analysis, regression analysis, mediation modelling and t-tests for significant mean differences), and
- creating a weighted composite individual perception of performance factor (WIPS) by applying principal component analysis.

Descriptive statistics were applied to describe the basic characteristics of the data set in relation to the specific research questions and the statistical techniques applied. As mentioned by Neumann (2011), descriptive statistical analysis describes the mean of the data, as well as the level of the standard deviation in terms of how well the mean represents the dataset. The internal consistency reliability of the data was measured using the Cronbach's alpha coefficient, in an attempt to describe how strongly the items on the scales relate to one another (Tredoux & Durrheim, 2013). Composite reliability coefficients were measured to assess the extent of the latent construct indicators' share in the measurement of the construct (Hair et al., 2010).

Socio-demographic data were used to describe and compare the sample population. Skewness of means and standard deviations were employed to describe the data in terms of a positive, negative or normal skewness distribution. The research also made use of a variety of statistical techniques to test the assumptions underlying multivariate statistics, such as sample size, missing values and the accuracy of the data, outliers, normality, linearity and homoscedasticity. During this stage the statistical analysis described the following as they relate to the data set (see Table 4.3):

Table 4.3.
Statistical Descriptors for Stage One

Descriptor	Purpose
Common method bias	Determine the variance that can be attributed to the method of measurement as opposed to the constructs the measures represent
Confirmatory factor analysis	Method applied to understand the factorial structure between observable and latent variables in the PWIS, and to test for construct validity
Composite and Cronbach's alpha coefficients	Measurement of the internal consistency reliability of the PWIS
Average variance extracted	Measurement of the convergent validity of the PWIS
Means and standard deviations	Determine the average of the data points in the data set, as well as the expression of how much the data sets in the group differ from the mean
Principal component analysis	Principal component analysis was used to create a weighted IPS composite score for the three business indicators (wIPS): profit/loss, operating cost and cash flow
Inter-correlations	Inter-correlations were used to show the relationship between constructs in the PWIS, as well as between the PWIS and perceptions of business performance indicators.
Regression analysis	Regression analysis was performed to assess the within-subject predictive validity of the enablers across time (T1 and T2).
Mediation modelling	Mediation modelling was used to assess whether the people effectiveness enablers and psychological attachment variables significantly predict perception of business performance indicators (profit/loss, costs, and cash flow related to operating activities), and (2) strong perceptions of people effectiveness enablers relate to strong individual perceptions of business performance through a high sense of psychological attachment.
T-tests for significant mean differences	T-tests for significant mean differences were used to evaluate whether the link between psychological work immersion and business performance increases over time with a significant increase in business performance.

Each of the steps applicable to the study will be discussed below.

4.6.1.1 *Step 1: Common method bias testing*

Common method bias testing determines the variance that can be attributed to the method of measurement as opposed to the constructs the measures represent. Common method variance presents a potential threat of bias in behavioural research, especially with cross-sectional (single-informative) surveys (Podsakoff, MacKenzie, & Podsakoff, 2012), as was the case in each time period (T1 and T2). Accordingly, Harman's one-factor test and confirmatory factor analysis (CFA) (one-factor solution) were conducted to assess the model fit data for each scale. In essence, this method was applied in order to understand whether a single or an overall factor explained the variance between the constructs applicable to the PWIS.

4.6.1.2 *Step 2: Confirmatory factor analysis*

Confirmatory factor analysis was used to understand the factorial structure between observable variables within the PWIS, as well as to test for construct validity. Goodness-of-fit measures evaluated the suitability of the model and the construct validity of the PWIS, and provided an indication of whether the tested model should be accepted or rejected. A confirmatory fit index of greater than .90, a non-normed fit indices (NNFI) of greater than .90, as well as the root mean square error of approximation (RMSEA) and standardised root mean square residual (SRMR) less than .08, were applied to indicate a good fit between the structural and the measurement model (Moss, 2016). The RMSEA examines the degree of unsuccessful fit of the model with the data. Thus, the RMSEA estimates the overall level of inaccuracy and associated degrees of freedom associated with the fitting function value. The standardised RMR (SRMR) is used to showcase model fit and is seen as the standardised variance between observed correlational relationship and the hypothesised relationships.

CFA (one-factor solution) was conducted to assess the model fit data of the PWIS (T1 and T2) by using the CALIS procedure in SAS (Cary, 2013). CFA was used to assess the within-subject construct (convergent and discriminant) validity of the PWIS: T1 and T2. In CFA, convergent and discriminant validity examines the extent to which measures of a latent variable share their variance and how they differ from others (Alarcó & Sánchez, 2015). Assessing the within-subject construct validity of the PWIS entailed analysing the measurement model in each time period of the administration of the PWIS in order to check for the best fit measurement model. This was subsequently used as the general structural model for further statistical analysis within-time (T1 and T2) and between-time (T1 versus T2).

Convergent and discriminant validity of the best fit measurement model (CFA model 3) for each time (T1 and T2) of the administered PWIS was also assessed. Convergent validity implies the extent to which the indicators of a latent variable (factor) that are theoretically related should correlate (highly). The general rule of thumb (Hair et al., 2010) is that all factor loadings ($p \leq .05$) should exceed $>.70$ (accounting for 50% of the variance).

4.6.1.3 Step 3: Composite and Cronbach's alpha coefficients

Internal consistency reliability was assessed in order to determine whether the PWIS is a consistent measuring instrument for the underlying construct. Tredoux and Durrheim (2013) state that internal consistency reliability allows the researcher to determine whether the applicable instrument delivers consistent results in terms of measuring the underlying constructs.

Cronbach's alpha coefficient (α) and composite reliability tests were applied to check for internal consistency reliability. Composite reliability measures were used as an alternative to the Cronbach's alpha coefficient to evaluate the extent to which items measure the underlying components of the construct (Hair et al., 2006). The rule of thumb is that the threshold value for acceptable reliability coefficients is $.70$. A pairwise comparison of the Cronbach's alpha reliability coefficients of the T1 sample and T2 sample was done by means of Feldt's test (Charter & Feldt, 1996) to check for differences in independent reliability coefficients.

4.6.1.4 Step 4: Average variance extracted

The convergent validity of the CFA measurement model can be assessed using the average variance extracted (AVE). AVE measures the level of variance captured by a construct versus the level due to measurement error. AVE values above $>.70$ are considered very good and values at the level of $\geq .50$ are acceptable (Alarcó & Sánchez, 2015). Measurement error relates to the differences in terms of the actual values and responses provided and can occur as a result of factors such as response confusion, ignorance and dishonesty (OECD, 2016). According to the Fornell and Larcker (1981) criterion, discriminant validity can also be assessed by comparing the amount of variance captured by the construct (AVE) and the shared variance with other constructs. The levels of each construct should be greater than the squared correlation involving the construct (Alarcó & Sánchez, 2015). A measure of discriminant validity was therefore used to compare the average variance extracted (AVE) estimates with the squared interconstruct correlations (SIC) associated with the sub-factors of the PWIS for T1 and T2.

4.6.1.5 Step 5: Means, standard deviations

Descriptive statistics were applied to describe the means and standard deviations in order to express the way the datasets within the group differed from the mean. Mean scores provide an indication of the central tendency applicable to the research sample, whilst the standard deviation shows the extent to which the sample varies from the central tendency (Tredoux & Durrheim, 2013). A normal distribution of the sample relates to a skewness distribution, with equal amounts of data on both sides of the middle viewpoint. Kurtosis is used as a measure to describe the skewness, flatness and peak comparisons applicable to a data set (Hair et al., 2010).

4.6.1.6 Step 6: Principal component analysis

In order to assess the validity of the PWIS in predicting perceptions of business performance, principal component analysis was used to create a weighted composite score for the three business indicators (wIPS): profit/loss; operating cost and cash flow. Principal component analysis is a useful statistical technique for finding patterns in datasets and allows for the analysis of similarities and differences (Smith, 2002). Principal component analysis was used to create a weighted individual perception score (wIPS) factor that was statistically important in order so as to empirically calculate the link between an individual perception of business performance in terms of the three business indicators (profit/loss, operating cost, and cash flow).

4.6.1.7 Step 7: Inter-correlations

Bivariate correlation was applied to indicate the direction and strength of the relationship between variables. The Pearson correlation or the Spearman value (for biographical variables) was used to describe the relationship, with values ranging from -1 to +1, with the \pm sign indicating the direction of the correlation and the value size referring to the strength of the relationship. A score of +1 is deemed to be a perfect positive relationship, while a score of -1 indicates a perfect negative relationship. A score of 0 indicates no linear relationship between the variables. Practical effect sizes were used to describe the significant relationships between variables, and were interpreted according to the following guidelines: $r = .10$ is a small practical effect, $r = .30$ is a medium practical effect and $r = .50$ is a large practical effect. Correlation analysis was used to describe the relationship between the following:

- The sub-factors of the PWIS as a method to showcase internal discriminant validity
- The sub-factors of the PWIS with the overall PWIS construct as a method to showcase convergent validity
- Biographical factors in terms of age, race, gender and tenure

- The reversed individual perception scores and mean individual perception scores
- The PWIS factors and the weighted individual perception scores

The test-retest reliability of the PWIS across T1 and T2 was assessed by comparing the within-subject bi-variate correlations for T1 and T2.

4.6.1.8 *Step 8: Regression analysis*

Regression analysis was performed to assess the within-subject predictive validity of the enablers across time (T1 and T2). The adjusted R^2 values of T1 and T2 were compared for significant differences by using the Fisher R to z transformation calculator. Regression analysis was thus performed to evaluate whether the people effectiveness enablers predicted psychological attachment over time (T1 and T2). Age, race, gender and tenure were also further analysed in terms of predictive factors in relation to psychological attachment over time (T1 and T2).

4.6.1.9 *Step 9: Mediation modelling*

This step involved calculating a mediation model using the bootstrapping approach in SPSS as guided by Hayes (2013). This step tested whether the people effectiveness enablers and psychological attachment variables significantly predict perception of business performance indicators (profit/loss, costs, and cash flow related to operating activities) and strong perceptions of people effectiveness enablers relate to strong individual perceptions of business performance through a high sense of psychological attachment. According to the guidelines of Zhou, Hirst, and Shipton (2012) for significant mediating effects, four conditions should be met: (1) the independent variable (i.e. people effectiveness enablers) is significantly related to the mediator (i.e. psychological attachment); (2) the independent variable is significantly related to the dependent variable (wIPS: individual perception of business performance indicators factor); (3) the mediator is significantly related to the dependent variable; and (4) the independent variable becomes significantly smaller (partial mediation) when the mediator is held constant in the equation. In addition, the more reliable bootstrapping bias-corrected 95% confidence interval should not include zero (Shrout & Bolger, 2002) in order to support the significant indirect effect of the relevant mediator variable.

4.6.1.10 *Step 10: T-tests for significant mean differences*

Paired t-test analysis was used to determine significant differences between two data sets (T1 and T2) (De Winter, 2013). The paired t-test compared the means and standard deviations obtained in the two sample sets (within-subject analysis of T1 and T2) by comparing the results across the two measurement points at T1 and T2. The paired t-test

analysis was reported by comparing the mean and standard deviation scores of the two samples and was able to report on the differences between the two samples of the data in order to evaluate the test-retest reliability of the PWIS.

4.6.2 Stage 2: Time 2 (T2): PWIS: Within subject analysis

Stage 2: Time 2 (T2) PWIS: Within-subject analysis. Stage 2 made use of the same statistical methods used during stage 1 for a data set collected 14 months later within the same population group.

4.6.3 Stage 3: Between time (T1–T2) comparison (repeated measures)

Stage 3: Between time (T1–T2) comparisons (repeated measures). Inferential statistics were applied to make inferences from the data in an attempt to understand trends potentially applicable to the broader population (Field, 2009). Relevant to this research, this stage checked whether the results of the T1 analysis differed significantly from the results obtained for T2.

Table 4.4 provides an overview of each of the steps applicable to the statistical measures applied to understand the data:

Table 4.4.

Statistical Descriptors for Stage Three

Descriptor	Purpose
Comparison-of-fit indices across sample 1 and sample 2	Indication of whether overall the model was a good fit and can be deemed as acceptable for samples 1 and 2 (construct validity of the PWIS).
Comparison of correlations and AVEs across sample 1 and sample 2	Comparison of the convergent validity scores of both samples using t-tests to determine whether differences in samples were significant.
Comparison-of-reliability coefficients across sample 1 and sample 2 (paired t-tests)	Reliability coefficients refer to the consistency of the measure for sample 1 and sample 2.
Comparison inter-correlations (paired t-test)	Comparison of the difference in relationships between sample 1 and sample 2 within the PWIS using a paired t-test.
Comparison of mediation models T1 and T2	Compare whether the people effectiveness enablers significantly predict perceptions of business performance for T1 and T2 and whether strong perceptions of business performance predict high levels of psychological attachment.
Comparison of business performance in terms of industry norms T1 and T2	Comparison of the business performance for T1 and T2 in line with industry norms.
Comparison M & SD (paired t-test)	Comparison of the means and standard deviations for sample 1 and sample 2 to determine whether significant differences exist.
Comparison in increase/decrease of business performance T1 versus T2	Comparison of the business performance between T1 and T2 in order to evaluate improvement or decline in performance.

The steps applicable to this stage will be described below:

4.6.3.1 *Step 1: Comparison of fit indices across sample 1 and sample 2*

This step evaluated whether the model was a good fit overall and could be deemed as acceptable at both T1 and T2. This step compared the comparative fit index, the non-normed fit indices (NNFI), the root mean square error of approximation (RMSEA) and standardised root mean square residual (SRMR) for both T1 and T2 in order to evaluate model fit.

4.6.3.2 *Step 2: Comparison AVEs across sample 1 and sample 2 (paired t-tests)*

This step provides a comparison of the convergent validity scores at both T1 and T2. AVE values above $>.70$ are considered very good and values at the level of $\geq .50$ are acceptable (Alarcó & Sánchez, 2015). This step discussed the difference between T1 and T2 and aimed to explain differences in measurement between the time periods (T1 and T2).

4.6.3.3 *Step 3: Comparison of reliability coefficients across sample 1 and sample 2 (paired t-tests)*

Reliability coefficients refer to the consistency of the measure for sample 1 and sample 2. This step compared three reliability measures in order to check for internal consistency reliability across T1 and T2, namely, Cronbach's alpha coefficient (α), composite reliability and a pairwise comparison of the Cronbach's alpha reliability coefficients using Feldt's test (Charter & Feldt, 1996) for differences in independent reliability coefficients.

4.6.3.4 *Step 4: Comparison inter-correlations (paired t-test)*

This step provided a comparison of the difference in correlations between the sub-factors of the PWIS, the sub-factors of the PWIS with the overall PWIS construct, biographical factors related to age, race, gender and tenure, the reversed individual performance perception scores, mean individual perception scores and the PWIS and the weighted individual perception score between T1 and T2 using a paired t-test. Significant differences were described in terms of the levels of significance which were set at $p < 0.5$. The test-retest reliability of the PWIS across T1 and T2 was assessed by comparing the within-subject bivariate correlations for T1 and T2.

4.6.3.5 *Step 5: Comparison of mediation models T1 and T2*

This step assessed whether the people effectiveness enablers significantly predict perceptions of business performance for T1 and T2 and whether strong perceptions of business performance predict high levels of psychological attachment. This step compared the mediation models calculated using the bootstrapping approach in SPSS (Hayes, 2013) for T1 and T2, in order to assess the test-retest reliability and validity of the PWIS in

predicting perceptions of business performance within time (T1 and T2) and over time (T1 vs T2).

4.6.3.6 *Step 6: Comparison of business performance in terms of industry norms T1 and T2*

This step provided a comparison of business performance for T1 and T2 through the development of an industry-aligned performance scale. Business performance indicators were compared in terms of actual business performance for T1 and T2 in relation to the three business indicators (profit/loss, operating costs, cash flow from operating activities), as well as financial health indicators (gross profit margin and defensive interval ratio) for both T1 and T2. The financial health indicators were benchmarked against industry norms using a rating scale to provide generalisability of organisational performance to the current market for both T1 and T2.

4.6.3.7 *Step 7: Comparison mean and standard deviations (paired t-test)*

Step 7 compared the means and standard deviations for T1 and T2 to determine whether significant differences exist between T1 and T2. Mean and standard deviation scores were compared for the sub-factors of the PWIS, the overall PWIS construct, the psychological enablers and the weighted individual perception scores at both T1 and T2. A final step was to compare the mean and standard deviation scores with the business indicators for both T1 and T2.

4.6.3.8 *Step 8: Comparison in increase/decrease in business performance T1 versus T2*

Step 8 focused on comparing the increase or decrease in business performance for T1 and T2 in order to evaluate whether performance had improved from T1 to T2 in relation to the three business indicators (profit/loss, operating costs, cash flow from operating activities). Business indicators were compared in terms of the rand values achieved, as reported by the financial statements for T1 and T2, as well as in terms of the financial health indicators in relation to gross profit margin and the defensive interval ratio. The gross profit margin and defensive interval ratio comparison for T1 and T2 was also further evaluated in terms of the industry rating scale to determine whether performance had increased or decreased for T1 versus T2.

4.6.3.9 *Step 9: Integration of the research findings*

The results of the empirical research were integrated with the findings of the literature review.

4.6.3.10 Step 10: Conclusions, limitations and recommendations

In this step, conclusions were drawn based on the empirical research conducted and the findings of the literature review. Limitations related to the study, and recommendations in terms of the influence of psychological work immersion on business performance, were also provided. The research concluded by making recommendations for future research related to this domain.

4.6.4 Statistical significance level

Regarding statistical significance, a confidence level of 95% was set, which implied that a p -value lower than .05 would reject the null hypothesis. In this instance, the results were seen as significant (Hair et al., 2010). Tredoux and Durrheim (2013) state that statistical significance levels provide various levels of research probability in order to illustrate significance. Table 4.5 gives an overview of the relevant levels of significance.

Table 4.5.

Different Levels of Statistical Significance

Probability level	Significance
.10	Less significant
.01 to .05	Significant
.001 to .01	Very significant
.001	Extremely significant

Source: Tredoux & Durrheim (2013)

The significance level that is set for the research will determine the rejection of the null hypothesis. During this phase, the researcher runs the risk of either a Type I or a Type II error, which could lead to making incorrect deductions from the research. Type I errors refer to the incorrect rejection of the null hypothesis, whilst a Type II error refers to a hypothesis that is erroneously accepted.

4.6.4.1 Level of significance: correlational statistical analysis

The practical effect significance level of the correlations coefficient is determined by the effects of the r value and can be described as follows (Cohen et al., 2013):

- Small effect: $r \leq .20$ to $\leq .29$
- Medium effect: $r \geq .30$ to $\leq .49$
- Large effect: $r \geq .50$



4.6.4.2 *Level of significance: standard multiple regression*

With regard to standard multiple regression, levels of statistical significance can be described as follows:

- $F(p) < .001$
- $F(p) < .01$
- $F(p) < .05$ as the cut-off for rejecting the null hypotheses

From a practical perspective, the guidelines of Cohen et al. (2013) were applied and interpreted as follows:

- Adjusted $R^2 \leq .12$ (small practical effect size)
- $R^2 \geq .13 \leq .25$ (moderate practical effect size)
- $R^2 \geq .26$ (large practical effect size).

4.6.4.3 *Level of significance: mediation modelling*

According to the guidelines of Zhou et al. (2012) for significant mediating effects, four conditions should be met: (1) the independent variable (i.e. people effectiveness enablers) is significantly related to the mediator (i.e. psychological attachment); (2) the independent variable is significantly related to the dependent variable (wIPS: individual perception of business performance indicators factor); (3) the mediator is significantly related to the dependent variable; and (4) the independent variable becomes significantly smaller (partial mediation) when the mediator is held constant in the equation. In addition, the more reliable bootstrapping bias-corrected 95% confidence interval should not include zero (Shrout & Bolger, 2002) in order to support the significant indirect effect of the relevant mediator variable. A more robust bootstrapping confidence interval range was used to examine the significance of the indirect (mediating) effect of psychological attachment on the enablers–wIPS relation. The kappa-squared (k^2) mediation effect and the R^2 mediation effect were also calculated in order to evaluate the significance and strength of the relationship and explore the predictive ability of the PWIS. According to Preacher and Kelley (2011), effect sizes in terms of mediation modelling should be determined based on the context, practical implication and type of construct under measurement. From a practical perspective, the guidelines of Cohen et al. (2013) were applied to test for the magnitude of the relationship:

- Adjusted $R^2 \leq .12$ (small practical effect size)
- $R^2 \geq .13 \leq .25$ (moderate practical effect size)
- $R^2 \geq .26$ (large practical effect size).

4.6.4.4 *Statistical significance: tests for significant mean differences*

Paired two-sample t-test comparison analysis was used in order to ascertain whether there were significant mean differences between T1 and T2. Mean scores were compared for all the sub-factors of the PWIS and the wIPS and then compared to the business indicator scores (profit/loss, operating costs and cash flow from operating activities) for both T1 and T2. The significant level for the tests of mean differences was seen as significant and valid when the p -value was lower than $p \leq .05$. This parameter was based on the guidelines of Hair et al. (2010). A test for equality of variances assumed was used to assess whether there was a difference in variances between the sub-factors of the PWIS and the wIPS for T1 and T2. Cohen's practical effect was also calculated in order to report on the magnitude of effects according to the following parameters:

- $d = .2$ small effect
- $d = .5$ medium effect
- $d = .8$ large effect.

4.7 CHAPTER SUMMARY

The purpose of this chapter was to provide an overview of the statistical approach and methods applied to assess whether psychological work immersion is a valid predictor of business performance indicators (profit/loss, costs, cash flow from operating activities) over time. The chapter discussed a summary of the sample applicable to this research and presented the sample within the context of the broader population. The PWIS as the measuring instrument applicable to this study was presented and the rationale for the use of the scale motivated. The chapter provided an overview of the first seven steps of the empirical examination for both T1, T2 and between T1–T2 analyses. This entailed the determination and description of the research sample; the justification for the use of the PWIS as the assessment instrument; the administration and scoring of the PWIS; ethical considerations; capturing of criterion data; and the formulation of the research hypotheses. The chapter also explored the three phases of the empirical investigation, which included the descriptive, correlational and inferential statistical analyses that will be used during the processing of the data. The chapter concluded with the statistical significance level that will be applied when interpreting the data.

In Chapter 5 the empirical research results will be discussed and aligned to the research aims of the study.

CHAPTER 5: RESULTS

The purpose of this chapter is to discuss the statistical analyses and results applicable to this study. The chapter reports the statistical procedures applied in testing the research hypotheses in relation to the research objectives of the study and presents the empirical research results using tables and figures. Descriptive and inferential statistics will be discussed in line with the designated research objectives. The final section of the chapter will discuss the empirical findings relevant to the study.

In terms of the empirical research steps highlighted in Chapter 4, this chapter focuses on step 6, the statistical processing of the data, and step 7, the reporting and interpretation of the results.

5.1 ASSESSING THE PSYCHOMETRIC PROPERTIES OF THE PSYCHOLOGICAL WORK IMMERSION SCALE: TIME 1 and TIME 2

In this section, the following research aim will be discussed:

Research aim 1	To assess the psychometric properties of the Psychological Work Immersion Scale (PWIS) in terms of its validity as a measurement model (construct: discriminant and convergent validity) (time 1 versus time 2: within-subject analysis and between time 1 and 2 within-subject comparisons).
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This section will also investigate the following hypothesis aligned to the research aim:

Ha1	The PWIS factor structure is a valid measure of the psychological work immersion construct across time (T1 and T2)
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5.1.1 Testing for common method variance

Preliminary statistical analysis involved testing the psychometric properties of the PWIS within time (T1 and T2). This step entailed, firstly, testing for common method variance for each time period in which the PWIS was administered. Common method variance presents a potential threat of bias in behavioural research, especially with cross-sectional (single-informative) surveys (Podsakoff et al., 2012), as was the case in each time period (T1 and T2). Accordingly, Harman's one-factor test and confirmatory factor analysis (CFA) (one-

factor solution) were conducted to assess the model fit data of the PWIS (T1 and T2) by using the CALIS procedure in SAS (Cary, 2013).

Table 5.1 summarises the results of Harman’s one-factor test and the CFAs conducted on the PWIS in each time period. A marginal value of RMSEA and SRMR for model acceptance is $\leq .10$, and a value of .08 and lower, and a CFI value close to $\geq .90$ and higher, are all considered an acceptable fit (Hamtiaux, Houssemand, & Vrignaud, 2013; Park, Nam, & Cha, 2012).

Table 5.1.
Testing for Common Method Variance: T1 & T2

PWIS One factor CFA model	Chi-square/df	RMSEA	SRMR	CFI	NNFI	AIC	Harman’s one-factor percentage (%)
Time 1	3.86***	.09	.07	.68	.67	1682.0993	7
Time 2	3.20***	.06	.06	.77	.76	1148.4056	6

Notes: Time 1 sample: N = 414. Time 2 sample: N = 482. ***p < .0001. RMSEA: upper 90% confidence limit.

As shown in Table 5.1, the one-factor solutions for the PWIS (T1 and T2) showed that the single factor that emerged accounted for only 7% (T1) and 6% (T2) of the covariance among the PWIS variables. The CFA single-factor models did not fit the data adequately for T1 and T2, with the CFI and NNFI values (T1: $< .68$ and T 2: $< .77$) being well below the threshold value for model acceptance ($> .90$). These results indicate that common method bias did not pose a serious threat to the findings regarding the PWIS for both T1 and T2.

5.1.2 Testing the PWIS measurement model for construct validity

CFA was used to assess the within-subject construct (convergent and discriminant) validity of the PWIS: T1 and T2. In CFA, convergent and discriminant validity examine the extent to which measures of a latent variable share their variance and how they differ from others (Alarcó & Sánchez, 2015). In the first step, the PWIS was evaluated in terms of its internal convergent validity (in T1 and T2).

The Fornell and Larcker criterion (1981) has been commonly used to assess the degree of shared variance between the latent variables of the CFA model (Alarcó & Sánchez, 2015). According to this criterion, the convergent validity of the CFA measurement model can be assessed by the average variance extracted (AVE) and composite reliability. AVE measures the level of variance captured by a construct versus the level due to measurement error.

AVE values above $>.70$ are considered very good and values at the level of $\geq .50$ are acceptable (Alarcó & Sánchez, 2015). Composite reliability is a less biased estimate of reliability than the Cronbach's alpha coefficient. A composite reliability coefficient of $\geq .70$ is considered acceptable (Alarcó & Sánchez, 2015).

The first step in assessing the within-subject construct validity of the PWIS entailed analysing the measurement model in each time period of the administration of the PWIS in order to first check for the best fit measurement model. This was subsequently used as the general structural model for further statistical analysis within-time (T1 and T2) and between-time (T1 versus T2).

Table 5.2.

Confirmatory Factor Analysis: Competing Measurement Models: T1 & T2

PWIS CFA models	Chi-square/df	RMSEA	SRMR	CFI	NNFI	AIC
Time 1						
Model 1	4.56***	.11	.05	.92	.89	159.0292
Model 2	2.60***	.07	.06	.83	.81	1165.1326
Model 3	2.16***	.06	.05	.91	.90	637.8290
Time 2						
Model 1	4.89***	.11	.05	.93	.89	129.7295
Model 2	2.35***	.06	.05	.85	.84	998.5546
Model 3	2.05***	.04	.05	.91	.90	612.4369

Notes: Time 1 sample: N = 414. Time 2 sample: N = 482 *** $p < .0001$. RMSEA: upper 90% confidence limit.

Table 5.2 shows that three competing CFA models were computed for the PWIS (T1 and T2).

Model 1: The CFA was computed on the original nine-factor model (manager credibility, appreciative feedback, intrateam effectiveness, strategic connection, intrinsic motivation, commitment, absorption, individual congruence, enabling environment) developed by Veldsman (2013). Time 1: The RMSEA value was above $.10$ and the NNFI below the required $.90$ value for model acceptance. Time 2: For time 2, the RMSEA value was again above $.10$ and the NNFI below 0.9 , indicating that model 1 was not deemed an acceptable fit, as the RMSEA value was above the threshold of acceptance set at $.10$ described by Kenny (2016).

Model 2: The CFA was computed on a modified five-factor solution for the PWIS: individual congruence and enabling environment were combined into one factor labelled as *organisation-individual alignment*; the three variables, intrinsic motivation, commitment and absorption, were combined into a single factor labelled as *psychological attachment*; manager credibility and appreciative feedback were combined into a factor labelled as *management behaviour*; and the two factors *inrateam effectiveness* and *strategic connection* were retained in their original form. Table 5.2 shows that the CFI and NNFI values were below the threshold value for model acceptance. For T1, the RMSEA value was .07, and the NNFI value of .81 displayed mediocre fit despite being below the threshold of <.90. For T2, model 2 obtained an RMSEA value of .06 and an NNFI value of .84, which indicated an acceptable model fit as per the guidelines of Kenny (2016).

Model 3: The CFA was computed on a modified four-factor solution for the PWIS for T1 and T2. The four-factor solution excluded the organisational-individual alignment factor created in model 2. Table 5.2 shows that all the fit statistics were well in line with the threshold values for good model fit. These results provided evidence of within-subject convergent validity across time (T1 and T2), that is, the overall psychological work immersion construct was well measured by the four sub-factors across the 14-month period. The AIC values for model 3 (T1 and T2) were the lowest and, in addition, model 3 for T1 and T2 obtained the best model fit data, with all fit statistics well in line with the threshold values for good model fit (construct validity). As such, Model 3 for T1 and T2 were used as the structural models for further data analysis.

The standardised path estimates (factor loadings) for the four-factor solution for each of the four factors for T1 and T2 were also assessed for the within-subject construct (convergent) validity of the PWIS. Construct validity refers to the extent which the questionnaire measures the constructs presumed to be measured (Carruthers, 2016). Validity can be further understood in terms of convergent and discriminate validity. Convergent and discriminate validity state that the related constructs do in fact display interrelatedness (convergent), whilst constructs that should show no relationship did not report any significant relationship (discriminate) (Marsh et al., 2013). In this section only the convergent validity of the PWIS was assessed as a first step.

Table 5.3 reports the factor loadings for T1 and Table 5.4 reports the factor loadings for T2. For sample 1, all factor loadings reported in Table 5.3 had strong loadings onto the respective factor. The general rule of thumb (Hair et al., 2010) is that all factor loadings ($p \leq .05$) should exceed $> .70$ (accounting for 50% of the variance) for evidence of convergent validity. Convergent validity implies the extent to which the indicators of a latent variable

(factor) that are theoretically related should correlate (highly). Convergent validity is the degree of confidence the researcher has that a trait (e.g. psychological work immersion) is well measured by its indicators. This type of validity also relates to the degree the various sub-factors are measured by their respective indicators (items). Although the recommended guideline for factor loadings is set at $>.70$, Carlson and Herdman (2012) state that a score above $>.50$ can still be seen as significant in the social sciences research domain.

Table 5.3.

Four-Factor Solution: Standardised Factor Loadings PWIS T1 Sample

Factor	Path	Item	Estimate (loadings)	Standard error	t-value
Psychological attachment		V3	.41	.04	9.19
Psychological attachment		V5	.65	.03	19.79
Psychological attachment		V14	.66	.03	20.45
Psychological attachment		V7	.65	.03	19.47
Psychological attachment		V17	.47	.04	11.19
Psychological attachment		V32	.71	.02	23.96
Psychological attachment		V48	.65	.03	19.57
Psychological attachment		V19	.32	.04	6.74
Psychological attachment		V23	.46	.04	10.79
Psychological attachment		V34	.46	.04	10.70
Psychological attachment		V44	.44	.04	10.20
Management behaviour		V6	.69	.03	18.00
Management behaviour		V10	.72	.03	22.38
Management behaviour		V40	.77	.02	25.90
Management behaviour		V22	.41	.04	8.60
Management behaviour		V38	.60	.03	15.30
Management behaviour		V43	.57	.04	13.96
Intrateam effectiveness		V25	.67	.04	15.68
Intrateam effectiveness		V36	.64	.04	14.74
Intrateam effectiveness		V51	.61	.04	13.91
Strategic connection		V13	.50	.05	9.84
Strategic connection		V52	.66	.03	16.64
Strategic connection		V54	.75	.03	19.07
Strategic connection		V30	.68	.04	14.08

Notes: T1 sample N = 414; t-values > 2.56 ($p \leq .01$); t-values > 1.96 ($p \leq .05$).

Table 5.3 indicates that the majority of factor loadings were above the $>.50$ threshold, with t-values indicating statistical significance at both the $p \leq .01$ ($t > 2.56$) and $p \leq .05$ ($t > 1.96$) levels. A few items had factor loadings close to $.50$ (V17: $.47$; V23: $.46$; V34: $.46$) and some lower than the threshold value: V3 ($.41$), V19 ($.32$), V41 ($.22$), V44 ($.44$). These results were taken into account in the further modification of the structural model and in the interpretation of the results.

Table 5.4.

Four-Factor Solution: Standardised Factor Loadings PWIS T2 Sample

Factor	Path	Item	Estimate (loadings)	Standard error	t-value
Psychological attachment		V3	.46	.04	11.09
Psychological attachment		V5	.53	.04	13.69
Psychological attachment		V14	.55	.04	15.02
Psychological attachment		V7	.59	.03	16.99
Psychological attachment		V17	.55	.03	14.85
Psychological attachment		V32	.56	.03	15.39
Psychological attachment		V48	.66	.03	21.28
Psychological attachment		V19	.36	.04	8.00
Psychological attachment		V23	.49	.04	12.41
Psychological attachment		V34	.51	.04	12.96
Psychological attachment		V44	.06	.05	1.13
Management behaviour		V6	.70	.03	22.18
Management behaviour		V10	.65	.03	19.20
Management behaviour		V40	.67	.03	20.56
Management behaviour		V22	.52	.04	13.30
Management behaviour		V38	.53	.04	13.46
Management behaviour		V43	.52	.04	13.19
Intrateam effectiveness		V25	.59	.04	14.75
Intrateam effectiveness		V36	.58	.04	14.31
Intrateam effectiveness		V51	.71	.03	19.75
Strategic connection		V13	.47	.04	10.47
Strategic connection		V52	.53	.04	13.29
Strategic connection		V54	.77	.04	21.97
Strategic connection		V30	.47	.05	10.10

Notes: T1 sample N = 482; t-values > 2.56 ($p \leq .01$); t-values > 1.96 ($p \leq .05$).

Table 5.4 indicates that the majority of factor loadings were above the $>.50$ threshold, with t -values indicating statistical significance at both the $p \leq .01$ ($t > 2.56$) and $p \leq .05$ ($t > 1.96$) levels. A few items had factor loadings close to $.50$ (V3: $.46$; V23: $.49$; V13: $.47$; V30: $.47$) and some lower than the threshold value: V19 ($.36$), V44 ($.06$). These results were taken into account in the further modification of the structural model and in the interpretation of the results.

The results showed overall good model fit for the four-factor solution and adequate convergent validity in terms of the items loading onto the respective factors within time (T1 and T2) and across time (T1 vs T2). The results provided evidence in support of research hypothesis Ha1 in terms of the PWIS factor structure as a valid measure of the psychological work immersion construct across time (T1 and T2).

5.1.3 Testing the PWIS people performance enabler construct for construct validity

As shown in Table 5.5, a CFA was also performed on the three people performance enabler factors (management behaviour, intrateam effectiveness and strategic connection) of the four-factor solution of the PWIS for T1 and T2 in order to assess the construct (convergent) validity of the enabler construct. The fit statistics showed that the people performance enabler construct had good model fit (within-subject construct validity) for both T1 and T2.

Table 5.5.

Confirmatory Factor Analysis: People Performance Enabler Construct Measurement Models: T1 & T2

PWIS: people effectiveness enablers CFA models	Chi- square/df	RMSEA	SRMR	CFI	NNFI	AIC
Time 1						
Model	1.58***	.05	.03	.98	.97	159.8027
Time 2						
Model	1.87***	.06	.03	.97	.96	174.8884

Notes: Time 1 sample: N = 414. Time 2 sample: N = 482 *** $p < .001$. RMSEA: upper 90% confidence limit.

Table 5.6 reports the factor loadings for T1 and T2. For sample 1 and sample 2, all factor loadings for the people performance enabler construct had significant and strong loadings ($>.50$) onto the respective factors. The model fit statistics and path coefficients (factor loadings) provided evidence of convergent validity for the people performance enabler construct within time (T1 and T2) and across time (T1 vs T2).

Table 5.6.

PWIS People Performance Enabler Construct: Standardised Factor Loadings PWIS T1 & T2 Sample

Factor	Path	Item	Estimate (loadings)	Standard error	t-value
Time 1					
Management behaviour		V6	.70	.03	18.21
Management behaviour		V10	.72	.03	22.09
Management behaviour		V40	.76	.03	24.10
Management behaviour		V22	.40	.04	8.40
Management behaviour		V38	.60	.03	15.46
Management behaviour		V43	.57	.04	14.22
Intrateam effectiveness		V25	.64	.04	14.34
Intrateam effectiveness		V36	.64	.04	14.39
Intrateam effectiveness		V51	.64	.04	14.21
Strategic connection		V13	.55	.05	10.39
Strategic connection		V52	.67	.04	16.90
Strategic connection		V54	.75	.04	18.86
Strategic connection		V30	.56	.05	10.66
Performance enabler		Management behaviour	.88	.06	14.46
Performance enabler		Intrateam effectiveness	.53	.05	9.12
Performance enabler		Strategic connection	.84	.06	13.47
Time 2					
Management behaviour		V6	.71	.03	22.00
Management behaviour		V10	.65	.03	18.99
Management behaviour		V40	.66	.03	19.56
Management behaviour		V22	.52	.03	13.12
Management behaviour		V38	.53	.03	13.59
Management behaviour		V43	.52	.03	13.13
Intrateam effectiveness		V25	.58	.04	14.01
Intrateam effectiveness		V36	.58	.04	14.06
Intrateam effectiveness		V51	.72	.03	18.91
Strategic connection		V13	.46	.04	9.99
Strategic connection		V52	.52	.03	13.03
Strategic connection		V54	.79	.03	21.72



Factor	Path	Item	Estimate (loadings)	Standard error	t-value
Strategic connection		V30	.44	.04	9.15
Performance enabler		Management behaviour	.93	.03	24.61
Performance enabler		Intrateam effectiveness	.69	.04	15.87
Performance enabler		Strategic connection	.99	.04	20.62

Notes: Time 1 sample: N = 414. Time 2 sample: N = 482 t-values > 2.56 ($p \leq .01$); t-values > 1.96 ($p \leq .05$).

Table 5.7 reports the composite reliability coefficients (CRs) and AVE values for the PWIS (T1 and T2) as additional indicators of convergent reliability (Alarcó & Sánchez, 2015). Composite reliability (CR) is a less biased estimate of reliability than the Cronbach's alpha coefficient and a CR coefficient of $\geq .70$ is considered acceptable (Alarcó & Sánchez, 2015). Table 5.7 shows that with the exception of the intrateam effectiveness factor ($CR < .70$), all the other sub-factors of the PWIS (T1 and T2) showed high internal consistency reliability ($> .70$) over time. The values of .68 (T1) and .68 (T2) for the intrateam effectiveness factor were close to the threshold value of .70 and thus regarded as acceptable for the purpose of this research.

AVE measures the level of variance captured by a construct versus the level due to measurement error. Measurement error relates to the differences in terms of the actual values and the responses provided and can occur as a result of factors such as response confusion, ignorance and dishonesty (OECD, 2016). AVE values above $> .70$ are considered very good and values at the level of $\geq .50$ acceptable (Alarcó & Sánchez, 2015). Table 5.7 shows that the AVE values for both T1 and T2 were very low ($< .50$), with the AVE values for T2 being the lower of the two. This finding suggests a measurement error which could be due to both macro and micro confounding factors present at the time. For example, macro factors, such as influencing factors in the economic, political and operating landscape, could have influenced the way participants answered the questions. Cognisance was also taken of the fact that during the period of the study, the non-profit sector in South Africa experienced serious funding constraints and the organisation in question had to reduce its workforce. This could have influenced the general sentiment within the organisation. At a micro level, familiarity with the items, tiredness or the participants' state of mind when completing the questionnaire could also have caused the lower AVE values. These factors were subsequently taken into account in the interpretation of the findings and the evaluation of the limitations relevant to the present study.

Table 5.7.

Reliability Coefficients and Average Variance Extracted for the PWIS T1 & T2

PWIS factors	Cronbach's alpha coefficient	Composite reliability coefficient	AVE
Time 1			
Management behaviour	.83	.80	.40
Intrateam effectiveness	.67	.68	.41
Strategic connection	.73	.75	.43
People effectiveness enablers	.85	.85	.41
Psychological attachment	.81	.81	.30
Overall PWIS	.89	.89	n/a
Time 2			
Management behaviour	.78	.77	.36
Intrateam effectiveness	.67	.66	.40
Strategic connection	.67	.80	.38.
People effectiveness enablers	.85	.84	.31
Psychological attachment	.76	.78	.26
Overall PWIS	.88	.88	n/a

Notes: Time 1 sample: N = 414. Time 2 sample: N = 482.

In summary, the results showed that the PWIS four-factor solution and the two constructs, psychological attachment (intrinsic motivation, commitment and absorption) and people effectiveness enablers (management behaviour: credibility and appreciative feedback; intrateam effectiveness; and strategic connection), had acceptable within-subject convergent validity over time for T1 and T2. However, the AVE values suggested measurement error that could have influenced the convergent validity of the PWIS. This limitation was considered in the interpretation of the results.

5.1.4 Testing the discriminant validity of the PWIS four-factor model

Divergence (discriminant validity), as an aspect of the within-subject construct validity of the PWIS over time T1 and T2, related to assessing whether the PWIS (four-factor measurement model) indicators were better associated with their respective latent variables (the respective PWIS factor) than with the other latent (PWIS factor) variables (intra-test construct validity). It was expected (and shown) that the four PWIS factors would correlate highly with one another and the overall PWIS construct (convergent validity). The enablers were also included as an additional composite factor in the correlation analysis.

Discriminant validity relates to the degree to which measures of different traits (e.g. the PWIS sub-factors) are unrelated. Testing intra-test discriminant validity was considered important in order to assess the PWIS for possible threats of multi-collinearity among the sub-factors. Multi-collinearity refers to the extent that two predictor models within a multiple regression model show an almost linear relationship by correlating highly with one another (Yakubu, 2011).

5.1.4.1 *Testing intra-discriminant validity of the PWIS: T1 and T2*

An initial measure of divergent (discriminant) validity entails comparing the best fitting CFA measurement model with a one-factor CFA model of the PWIS. As was shown in Table 5.1 (one factor CFA) and Table 5.2 (four-factor best fit model), for both T1 and T2 the within-subject one-factor solution for the PWIS had poor data fit, while the four-factor solution had a good data fit. These findings suggest acceptable within-subject discriminant validity of the PWIS across time (T1 and T2).

A second measure of internal discriminant validity entails assessing whether the correlations among the sub-factors of the PWIS obtained a value below $r \leq .85$. As a general rule of thumb, a bi-variate correlation of $r \geq .85$ or larger indicates poor discriminant validity and possible threats of multi-collinearity among the sub-factors of the scale (Hair et al., 2010; Park et al., 2012).

The bi-variate correlations reported in Table 5.8 (T1) showed that the bi-variate correlations among the four factors (management behaviour, intrateam effectiveness, strategic connection, psychological attachment) ranged between $r \geq .30$ and $r \leq .58$; $p < .0001$; moderate to large practical effect. The four sub-factors had good discriminant validity ($r < .85$). Similarly, Table 5.9 (T2) showed good within-subject discriminant validity for the four factors, with the correlations ranging between $r \geq .41$ and $r \leq .61$; $p < .0001$; moderate to large practical effect. The results showed that multi-collinearity among the sub-factors was not a potential threat to the findings.

Overall, in terms of T1 (Table 5.8), the four sub-factors, including the people effectiveness enablers factor, had high significant correlations with the overall PWIS construct ($r \geq .55$ and $r \leq .95$; $p < .0001$; large practical effect), indicating convergent validity. The three people performance enabler sub-factors (management behaviour, intrateam effectiveness and strategic connection) also showed convergent validity with the overall people performance enabler factor ($r \geq .56$ and $r \leq .89$; $p < .0001$; large practical effect). The correlation between the people performance enabler factor and psychological attachment showed acceptable discriminant validity ($r < .85$) between these two constructs ($r = .61$; $p < .0001$; large practical

effect), which suggested that multi-collinearity between the two factors was not a potential threat to the findings about the link between the two constructs.

Table 5.8.

Bi-variate Correlations for the PWIS T1

	1	2	3	4	5	6	7	8	9	10	11
1 Age	-										
2 Race	.15**	-									
3 Gender	.11*	.27*	-								
4 Tenure	.22*	-.03	-.03	-							
5 Management behaviour	.12*	-.01	.03	-.03	-						
6 Intrateam effectiveness	.11*	-.03	.02	.09	.33***	-					
7 Strategic connection	.04	.08	-.03	-.04	.56***	.31***	-				
8 People effectiveness enablers	.12*	.03	.02	-.02	.89***	.56***	.79***	-			
9 Psychological attachment	.20**	-.13*	-.12	-.23	.50***	.40***	.50***	.61***	-		
10 Overall PWIS	.16*	-.05	-.06	-.03	.83***	.55***	.76***	.95***	.83***	-	
11 wIPS	.07	-.01	-.10	.02	.30***	.34***	.36***	.42***	.48***	.49***	-

In terms of T2 (Table 5.9), the four sub-factors, including the people effectiveness enablers, reported significant correlations with the overall PWIS construct ($r \geq .65$ and $r \leq .95$; $p < .0001$; large practical effect), which again indicates convergent validity. The three people performance enabler sub-factors (management behaviour, intrateam effectiveness and strategic connection) also showed convergent validity with the overall people performance enabler factor ($r \geq .66$ and $r \leq .90$; $p < .0001$; large practical effect). The correlation between the people performance enabler factor and psychological attachment showed acceptable discriminant validity ($r < .86$) between these two constructs ($r = .61$; $p < .0001$; large practical effect), which again suggested that multi-collinearity among the two factors was not a potential threat to the findings about the link between the two constructs.

From a biographical perspective, T1 showcased significant correlations between age and race ($r \geq .15$; $p < .01$; small practical effect), gender and age ($r \geq .11$; $p < .01$; small practical effect), race ($r \geq .27$; $p < .05$; small practical effect) and tenure and age ($r \geq .22$; $p < .05$; small practical effect). For T2, significant correlations were reported between race and age

($r \geq .16$; $p < .001$; small practical effect), gender and race ($r \geq .23$; $p < .01$; small practical effect) and tenure and age ($r \geq .31$; $p < .01$; moderate practical effect).

Table 5.9.

Bi-variate Correlations for the PWIS T2

	1	2	3	4	5	6	7	8	9	10	11
1 Age	-										
2 Race	.16**	-									
3 Gender	-.02	.23**	-								
4 Tenure	.31**	-.04	.01	-							
5 Management behaviour	.07	.03	-.15**	.01	-						
6 Intra-team effectiveness	.06	.03	-.07	.07	.45***	-					
7 Strategic connection	.04	.04	-.08	.03	.61***	.40***	-				
8 People effectiveness enablers	.07	.04	-.14**	.03	.90***	.66***	.81***	-			
9 Psychological attachment	.16**	-.12*	-.15**	.08	.50***	.47***	.53***	.61***	-		
10 Overall PWIS	.11*	-.02	-.16**	.04	.84***	.65***	.79***	.95***	.83***	-	
11 wIPS	.12*	-.06	-.02	.18**	.32***	.29***	.34***	.39***	.52***	.48***	-

Note: T2 N = 482. *** $p \leq .001$. ** $p \leq .01$. * $p \leq .05$

According to the Fornell and Larcker (1981) criterion, discriminant validity can also be assessed by comparing the amount of variance captured by the construct (AVE) and the shared variance with other constructs. The levels of each construct (e.g. the PWIS sub-factors) should be greater than the squared correlation involving the construct (Alarcó & Sánchez, 2015). A third measure of discriminant validity was therefore to compare the AVE estimates with the squared interconstruct correlations (SIC) associated with each of the four sub-factors of the PWIS for T1 and T2 (Table 5.10). The people performance enabler factor was also included in the analysis. The general rule of thumb for evidence of intra-dimensional discriminant validity among the sub-factors of the PWIS related to SIC values being smaller than the AVE values (Fornell & Larcker, 1981).

Table 5.10 shows intra-dimensional discriminant validity in terms of management behaviour and intra-team effectiveness. Lack of intra-dimensional discriminant validity was indicated for intrateam effectiveness and strategic connection, strategic connection and management behaviour, as well as for management behaviour, intrateam effectiveness and strategic connection in relation to psychological attachment. The SIC values were slightly larger for

intra-team effectiveness and strategic connection, strategic connection and management behaviour, as well as for management behaviour, intra-team effectiveness and strategic connection in relation to psychological attachment.

Table 5.10.

Average Variance Extracted Estimates for the Four PWIS Factors Versus the Squared Interconstruct Correlations Associated with the Relevant Factor T1 & T2

PWIS sub-factors	AVE	SIC			
		1	2	3	4
Time 1					
1 Management behaviour	.40	-			
2 Intra-team effectiveness	.41	.19	-		
3 Strategic connection	.43	.48	.17	-	
4 Psychological attachment	.30	.38	.28	.38	-
Time 2					
1 Management behaviour	.36	-			
2 Intra-team effectiveness	.40	.38	-		
3 Strategic connection	.38	.73	.45	-	
4 Psychological attachment	.26	.43	.44	.54	-

Notes: AVE: Average variance extracted. SIC: Squared interconstruct correlations

5.1.4.2 Testing the external discriminant validity of the PWIS: T1 and T2

The external discriminant validity of the PWIS (T1 and T2) was determined by assessing the correlation between the PWIS constructs and a weighted individual perception of business performance score (wIPS). Dobre (2012) states that employee perceptions of whether the organisation is performing, as well as the internalisation of goals in relation to organisational performance have a positive relationship with both employee motivation and actual business performance. Employee motivation has also been shown to positively influence business performance (Cerasoli, Nicklin, & Ford, 2014). Figure 5.1 depicts these relationships, which formed the basis for developing the items in the wIPS:

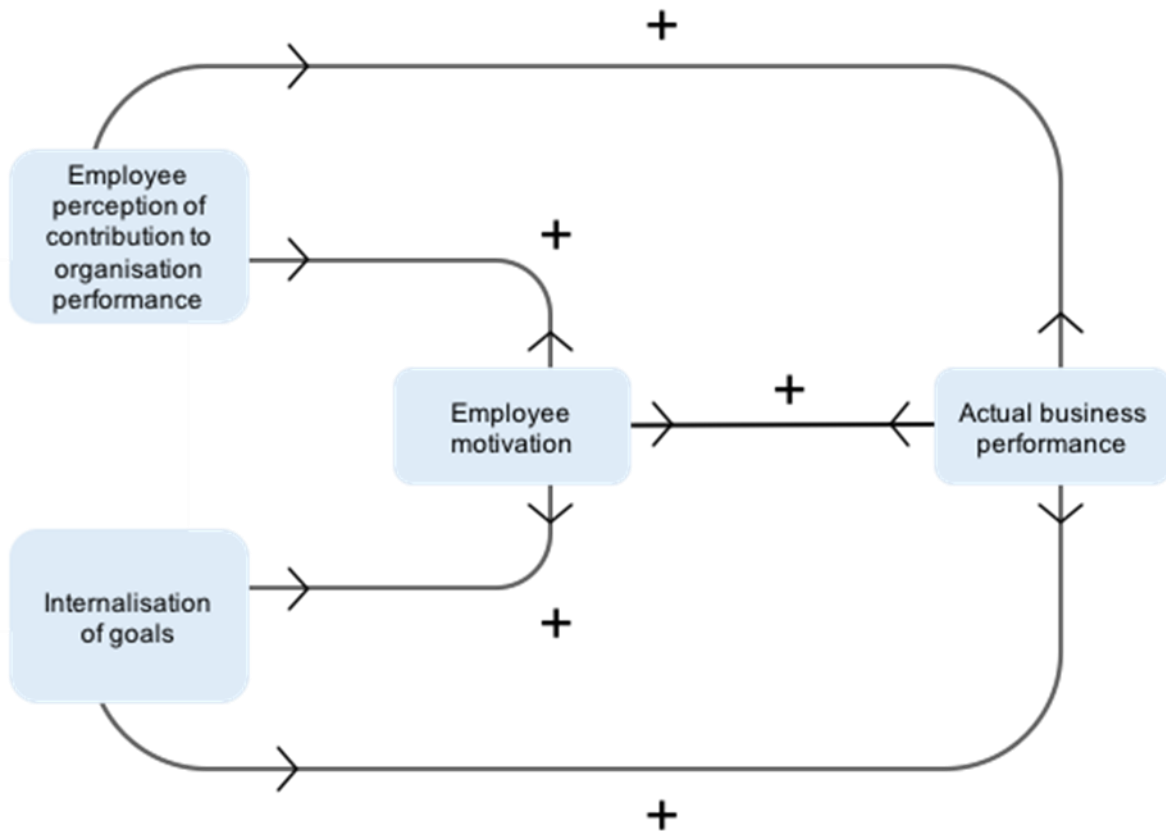


Figure 5.1. Foundational theory for the wIPS items

The wIPS factor measured items related to the employee perception of contribution to organisational performance. The wIPS factor comprised of three items: (1) PWIS V15: How well do you know what is expected of you at work? (2) PWIS V37: Does the work you do help the organisation achieve its strategy? and (3) PWISV53: Does the work you do help the organisation achieve its goals? The internal reliability coefficients of the IPS score were below the threshold value of $>.70$: IPS T1: $\alpha = .48$ ($M = 3.35$; $SD = .54$); IPST2: $\alpha = .53$ ($M = 3.36$; $SD = .54$). This result was taken into consideration in the interpretation of the findings and noted as a potential limitation.

Creating the wIPS factor was statistically important to be able to calculate empirically the link between an individual perception of business performance score in terms of the three business indicators (profit/loss, operating cost, and cash flow). Principal component analysis was used to create a weighted IPS composite score for the three business indicators (wIPS): profit/loss; operating cost and cash flow.

Using the formula $IPS = V14w1 + V37w2 + V53w3$, the weights were normalised (a^2) factor loadings to ensure that the $sum(w1 + w2 + w3) = 1$. Table 5.11 shows the results of the

principal component test for creating the weights. The T1 sample was used as the measurement model.

Table 5.11.

Principal Component Analysis: Creating a Composite Weighted IPS Score

Items	Eigenvectors	
	Loadings	Weights
V15	.49	.24
V37	.61	.38
V53	.62	.39

Note: T1 N = 414, The proportion wIPS was calculated as: $IPS/\text{sum}(IPS) = 1$

As shown in Table 5.12, the business performance for T1 was not good. For T1, the organisation achieved negative performance results on both profit/loss and cash flow from operating activities. In terms of the comparability of scores, the gross profit margin and defensive interval ratio was also calculated and compared to industry norms. Industry norms were developed by comparing industry accepted financial norm scores and then adapting the scores to the specific industry relevant to the study. The norm development process will be discussed in section 5.3 of this chapter. However, the summary presented by Table 5.12 indicates a positive relationship between the wIPS and subsequent performance scores and ratings. As such, for T1 the composite weighted IPS score was therefore reversed such that individuals who tend to disagree with the three statements (V15, V37, and V53) will score high on the perception of the business performance indicator, for example: rIPS (reversed IPS) = $(6 - V15) + 0.235739381 + (6 - V37) * 0.376701338 + (6 - V53) * 0.387556052$. For robust testing the mIPS based on the mean score was calculated as follows; $mIPS = \text{mean}(V15, V37, V53)$.

Table 5.12.

Business Performance T1 & T2

Profit/Loss	Rand Values			Performance Health indicators		
	Operating costs	Cash Flow from operating activities	Gross profit margin	Norm comparison rating scale	Defensive interval ratio	Norm comparison rating scale
T1 (Sample 1)						
-5,656,536	45,910,736	-6,363,647	-12%	1 (poor performance)	5,71	3 (norm performance)
T2 (Sample 2)						
2,585,909	43,968,963	2,485,803	5%	3 (norm performance)	5,77	3 (norm performance)

Correlation was further done between the rIPS and mIPS scores. The correlations between IPS and rIPS are negative and perfect $r = 1$, which indicates that the rIPS is the reversed version of the IPS. Correlation between the rIPS and mIPS is negative and high, which indicates that the two measures are very close and the difference can be explained as a result of the weighting of the rIPS. Table 5.13 indicates the correlation between the rIPS and mIPS:

Table 5.13.

Correlation Between rIPS and mIPS

	IPS	rIPS	mIPS
IPS	1.0	-1.0	-.99

Note: T1 N = 414

The next step was to calculate the wIPS for the three business indicators (profit/loss, operating costs and cash flow from operating activities) as follows:

- $wIPS_{pl} = wIPS * -5656536$; ($wIPS_{pl}$ = Weighted Individual Perception Score* Profit/loss)
- $wIPS_{oc} = wIPS * 45910736.00$; ($wIPS_{oc}$ = Weighted Individual Perception Score* Operating cost)
- $wIPS_{cf} = wIPS * -6363647.00$; ($wIPS_{cf}$ = Weighted Individual Perception Score* Cash flow)

Table 5.14.

Descriptive Statistics: Weighted Means

	Std Dev	Mean	Sum	Minimum	Maximum
rIPS	.54	2.65	1098.11	2.00	4.61
wIPS	.00	.00	1.00	.00	.00
wIPS _{pl}	2788.80	-13664.56	-5657127.21	-23761.72	-10303.31
wIPS _{oc}	22635.00	110907.09	45915534.47	83625.84	192859.70
wIPS _{cf}	3137.42	-15372.73	-6364312.11	-26732.12	-11591.31

Note: T1 N = 414

Table 5.15 reports the correlations between the PWIS factors and the weighted IPS score for each of the three business indicators. The wIPS score correlations were the same across the three weighted individual perception of business performance indicators. Therefore, the wIPS notation was used in further statistical analysis to assess the association between the

PWIS sub-factors and the perception of business performance on the three indicators. Table 5.8 (T1) and Table 5.9 (T2) report the correlation range between the PWIS factors and the wIPS factor. For T1, the correlations ranged between ($r \geq .30$ to $r \leq .49$; $p < .0001$; moderate practical effect). Similarly, for T2 the correlations ranged between ($r \geq .32$ to $r \leq .52$; $p < .0001$; moderate to large practical effect). All correlations were significant and positive. The range of the correlations between the PWIS factors and the weighted wIPS factors is below the threshold value of $r = .85$, indicating no potential threat of multi-collinearity and the external divergent (discriminant) validity of the PWIS.

It should be noted that, in the interpretation of the findings, the business performance of the organisation was very low in T1 and showed only a marginal improvement in T2 relative to industry norms. A high wIPS score indicated strong perceptions of business performance. The positive associations between the PWIS factors and the wIPS therefore suggest that strong perceptions of people effectiveness enablers and a high sense of psychological attachment relate to strong perceptions of performance.

Overall, the results provided evidence of acceptable within-subject intra-discriminant validity of the PWIS (T1 and T2) over time and external discriminant validity in relation to the business performance construct. However, the AVE and SIC values (T1 and T2) suggested measurement error which could be due to the macro and micro factors that could have influenced the way participants answered the questions and subsequently influenced the lower AVE values. This limitation was considered in the interpretation of the results.

Table 5.15.

Correlations Between PWIS Factors and the Composite Weighted Individual Perception Scores in Terms of the Three Business Performance Indicators

	wIPSpI	wIPSoc	wIPSco
Psychological attachment	.48	-.48	.48
Management behaviour	.30	-.30	.30
Intrateam effectiveness	.34	-.34	.34
Strategic connections	.35	-.35	.35
PWIS	.49	-.49	.49
Enablers	.42	-.42	.42

Note: N = 414, $p < .0001$



Overall, the results provided evidence in support of research hypothesis Ha1 in terms of the PWIS factor structure as a valid measure of the psychological work immersion construct across time (T1 and T2).

5.1.5 Testing the PWIS structural model

An important premise of the theoretical model underpinning the PWIS (Veldsman, 2013) is that the people effectiveness enablers predict the level of psychological attachment. The next step therefore involved testing the within-subject validity of the PWIS structural model (people effectiveness enablers as predictors of psychological attachment) over time. The four-factor solution measurement model was used as basis for the data in the structural equivalence modelling procedure. The CALIS procedure in SAS (Cary, 2013) was used. The Structural equation modelling (SEM) procedure controlled for the biographical variables (age, race, gender and tenure). The biographical variables were coded as follows:

- Age: 0 = < 35 years; 1 = > 35 years
- Race: 0 = Black participants; 1 = White participants
- Gender: Male = 0; Female = 1
- Tenure: < 5 years = 0; > 5 years = 1

Table 5.16 shows that the fit statistics for the predictive validity of the people effectiveness enablers (T1) was good, with all fit statistics well within the boundaries for good model fit. However, the fit statistics for T2 showed an increase in the AIC value and somewhat lower CFI and NNFI values, suggesting somewhat less predictive validity for T2. This finding could be attributed to measurement error. This limitation was considered in the interpretation of the results.

Table 5.16.

Structural Equation Modelling: People Effectiveness Enablers as Predictors of Psychological Attachment T1 & T2

SEM models	Chi-square/df	RMSEA	SRMR	CFI	NNFI	AIC
<u>Time 1</u>						
Model	2.16***	.06	.05	.91	.90	637.0632
<u>Time 2</u>						
Model	2.97***	.07	.06	.83	.80	832.7207

Notes: Time 1 sample: N = 414. Time 2 sample: N = 482. ***p < .001. RMSEA: upper 90% confidence limit.

A regression analysis was then performed to assess the within-subject predictive validity of the enablers across time (T1 and T2). The adjusted R^2 values of T1 and T2 were compared for significant differences by using the Fisher R to z transformation calculator. Table 5.17 shows that for both T1 and T2 significant regression models were achieved: T1: $F = 50.64$; $p < .000$; $R^2 = .40$; large practical effect; T2: $F = 55.10$; $p = .000$; $R^2 = .38$; large practical effect.

The people effectiveness enablers significantly predicted the psychological attachment variable in T1 ($\beta = .60$; $p \leq .001$) and T2 ($\beta = .60$; $p \leq .001$). Although the R and R^2 value achieved in T2 was somewhat smaller than for T1, the Fisher z transformation test showed that the two R values (T1 and T2) did not differ significantly. In both within-subject time periods, the people effectiveness enablers were a strong and significant (and relatively stable) positive predictor (large practical effect) of the psychological attachment construct.

Table 5.17.

Regression Analysis Results: People Effectiveness Enablers as Predictors of Psychological Attachment T1 & T2

Variables	Time 1		Time 2	
	β	t	β	t
Age	.13	3.01**	.13	3.39**
Race	.03	.74	-.01	-.24
Gender	-.10	-2.38*	-.02	-.56
Tenure	.05	1.33	.02	.41
People effectiveness enablers	.60	14.88***	.60	15.96***
Model info				
F_p	50.64***		55.10***	
R^2	.40		.38	
ΔF_p	221.33***		254.55***	
ΔR^2	.35		.36	
<i>Fisher z score</i>	.34			

Note: T1 N = 378; T2 N = 442. *** $p \leq .001$. ** $p \leq .01$. * $p \leq .05$

Table 5.17 further shows that in T1, age ($\beta = .13$; $p \leq .001$) and gender ($\beta = -.10$; $p \leq .001$) predicted psychological attachment. Gender negatively predicted psychological attachment suggesting potential differences between male and female participants. In T2, only age ($\beta = .13$; $p \leq .001$) significantly predicted psychological attachment. This finding was considered in the interpretation of the results.

Overall, the results showed acceptable construct (convergent and discriminant) validity for the PWIS for T1 and T2. Although the AVE/SIC analysis pointed to some potential threats to intra-discriminant validity over time, the CFA and correlation analyses provided adequate evidence of convergent and discriminant validity for the purpose of this research. The people effectiveness enablers were also significant positive predictors of the psychological attachment construct across time. It can therefore be concluded that adequate evidence in support of research hypothesis Ha1 was provided in terms of the PWIS factor structure as a valid measure of the psychological work immersion construct across time (T1 and T2)

5.2 ASSESSING THE TEST-RETEST RELIABILITY OF THE PWIS: TIME 1 and TIME 2

The following section will discuss research aim 2 of this study. This aim can was formulated as follows:

Research aim 2	To assess the test-retest reliability of the PWIS across time (time period of 14 months).
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Hypothesis Ha2 and Ha3 will also be tested within this section as described below:

Ha2	The PWIS has acceptable internal consistency reliability within and across time (T1 and T2).
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Ha3	The PWIS demonstrates test-retest reliability across time.
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5.2.1 Assessing the internal consistency reliability of the PWIS within and across time: T1 and T2

As was shown in Table 5.7 (section 5.1.2), two reliability tests were carried out to check for internal consistency reliability, namely, (1) Cronbach's alpha coefficient (α), and (2) composite reliability). Composite reliability (CR) is a less biased estimate of reliability than the Cronbach's alpha coefficient (Alarcó & Sánchez, 2015). A Cronbach's alpha or composite reliability coefficient of $\geq .70$ is considered acceptable (Alarcó & Sánchez, 2015; Hair et al., 2010). Table 5.7 shows that with the exception of the intrateam effectiveness factor (CR $< .70$), all the other sub-factors of the PWIS (T1 and T2) showed high within-subject internal consistency reliability ($> .70$) over time. However, the CR values of .68 (T1)

and .68 (T2) were close to the threshold value of .70 and were regarded as acceptable for the purpose of this research. The results provided supportive evidence for research hypothesis Ha2: The PWIS has acceptable internal consistency reliability within and across time (T1 and T2).

A pairwise comparison of the Cronbach's alpha reliability coefficients of the T1 sample and T2 sample were done by means of Feldt's test (Charter & Feldt, 1996) for differences in independent reliability coefficients. The results reported in Table 5.17 show that the internal consistency reliability of management behaviour (T1: .83; T2: .78), strategic connection (T1: .73; T2: .67) and psychological attachment (T1: .81; T2: .76) was significantly lower in T2 and not equal to the internal consistency reliability achieved in T1. The significantly lower internal consistency reliability coefficients for these three PWIS factors in T2 could be attributed to measurement error and other confounding factors that influence repeated measures. In longitudinal studies, factors such as familiarity with items, panel attrition and non-responsiveness of participants over time can be reasons for lower internal consistency, and this might have also influenced the reliability achieved in T2 (McCrae, Kurtz, Yamagata, & Terracciano, 2011).

Table 5.18.

Pairwise Comparison of Cronbach's Alpha Coefficients PWIS: T1 Sample and T2 Sample

Variables	Sample T	α	W statistic	p
Management behaviour	T1	.83	.80	.01
	T2	.78		
Intrateam effectiveness	T1	.67	.99	.48
	T2	.67		
Strategic connection	T1	.73	.82	.02
	T2	.67		
Psychological attachment	T1	.81	.77	.003
	T2	.76		
People effectiveness enablers	T1	.85	1.01	.53
	T2	.85		
Overall PWIS	T1	.89	.93	.24
	T2	.88		

Notes: Time 1 sample: N = 414. Time 2 sample: N = 482.

5.2.2 Assessing the test-retest reliability of the PWIS across time: T1 and T2

The test-retest reliability of the PWIS across T1 and T2 was assessed by comparing the within-subject bi-variate correlations for T1 and T2. The bi-variate correlations of the PWIS were reported in Table 5.8 (T1) and in Table 5.9 (T2). The results showed that the range of the bi-variate correlations for T1 and T2 was very similar in magnitude and direction (positive), and was also positive and significant for both T1 and T2. The practical effect size was moderate for both T1 and T2. The PWIS factors also significantly and positively predicted the wIPS factor in T1 and T2 (moderate effect). The Fisher z transformation test showed that the *r* values between T1 and T2 (across time) did not differ significantly, which provided evidence of the test-retest reliability of the PWIS.

The scores achieved on the PWIS factors for T1 and T2 were then correlated to further explore the test-retest reliability of the PWIS across time. Condition criteria were set to enable the matching of the two samples (Age_s1 = Age_s2 & Gender_s1 = Gender_s2 & Race_s1 = Race_s2 & Tenure_s1 = Tenure_s2). In instances where more than one sample case matched, the scores were removed which resulted in N = 388 useable scores. Table 5.19 indicates the correlation between T1 and T2 constructs:

Table 5.19.

Correlations Between PWIS T1 and T2 Scores

		<u>Time 1</u>						
		1	2	3	4	5	6	7
<u>Time 2</u>	1 Management behaviour	.13	.00	.13	.11	.14	.13	-.09
	2 Intrateam effectiveness	-.00	.00	-.04	-.02	.01	-.00	-.00
	3 Strategic connection	.07	.06	.11	.10	.13	.12	-.12
	4 People effectiveness enablers	.12	.03	.12	.10	.15	.13	-.09
	5 Psychological attachment	.07	.01	.09	.07	.19	.13	-.03
	6 Overall PWIS	.11	.03	.12	.10	.18	.15	-.08
	7 IPS	.01	.00	.05	.03	.18	.03	-.08

Note: T1 N = 388; T2 N = 442. *** $p \leq .001$. ** $p \leq .01$. * $p \leq .05$

Intrateam effectiveness demonstrated no correlation between T1 and T2. This could be as a result of the nature of the construct which relates to the perceived support and competence levels of direct team members. The possibility exists that individual respondents might have changed teams and as such this construct could not effectively be measured across T1 and

T2. Alternatively, newly formed teams during T1 and T2 could have resulted in an inability to effectively evaluate the construct during T2, leading to teams that had not matured enough to effectively measure the construct.

The IPS scores demonstrated no correlation between T1 and T2. This could be due to the nature of the construct in relation to evaluating perceived organisational performance, which could be influenced by the current climate within the organisation. This has been noted as a limitation of the study.

In summary, the results provided evidence in support of research hypothesis Ha3: The PWIS demonstrates test-retest reliability across time with the exception of the intrateam effectiveness construct that forms part of the PWIS.

5.3 ASSESSING THE PREDICTIVE VALIDITY OF THE PWIS: TIME 1 and TIME 2

This section will discuss research aims 3 and 4 as applicable to this study. Research aims 3 and 4 are stated as follows

Research aim 3	To assess the predictive (criterion) validity of the PWIS for perceptions of key business performance indicators (profit/loss, operating costs, and cash flow related to operating activities) across time (time 1 versus time 2: within-subject analysis and between time 1 and 2 within-subjects comparisons)
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The research aim relates to the testing of the following hypotheses:

Ha4	The people effectiveness enablers and psychological attachment variables significantly predict perception of business performance indicators (profit/loss, costs, and cash flow related to operating activities).
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Ha5	Strong perceptions of people effectiveness enablers relate to strong individual perceptions of business performance through a high sense of psychological attachment.
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Ha6	The link between psychological work immersion and business performance increases over time with evidence of an increase in business performance.
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5.3.1 Assessing the PWIS as a predictor of business performance

This section reports the results of the statistical procedures performed to test research hypotheses Ha4 and Ha5.

5.3.1.1 Evaluating business performance: T1 versus T2

The next step was to evaluate the business performance indicators by comparing the rand values as reported at the end of the financial period for T1 and T2. Year-on-year comparison numbers were used to compare the organisation against previous performance and thus to compare output in terms of the three identified business performance indicators (profit/loss; operating costs and cash flow from operating activities). Table 5.20 provides a summarised overview of the changes in business indicators at both time periods.

Table 5.20.

Business Measurement Scorecard T1 and T2

	T1 (Sample 1)	T2 (Sample 2)	% change from 2013 to 2014
Profit/loss	-R5 656 536	R2 585 909	246
Operating costs	R45 910 736	R43 968 963	-4
Cash flow from operating activities	-R6 363 647	R2 485 803	239

Table 5.20 shows a significant increase in rand values for profit/loss (246%) and cash flow from operating activities (239%) when comparing T1 and T2. Although a slight decrease in operating costs was evident between T1 and T2, the measure remained relatively stable which shows that the organisation performed better during T2 while also being able to keep costs relatively consistent between T1 and T2.

However, using only rand values to assess business performance may be problematic owing to the relativity of actual rand values. The following step therefore was to analyse the performance indicators further by calculating industry norms based on two key financial health indicators, the gross profit margin and the defensive interval ratio. The rationale for this step was to be able to compare the organisation against industry norms to see its performance in the context of the market in which the organisation operates. Two critical ratios of performance were identified as being relevant to the research. The gross profit

margin is a key indicator of organisational profitability as it relates to the ability of the organisation to cover its costs through earned revenue and is used as an indicator of organisational growth (Investopedia, 2016). In addition, the defensive interval ratio is used to analyse as an organisation's ability to operate and meet its current commitments (Khatik & Singh, 2015).

For comparability purposes, a rating scale was developed to differentiate performance on both the gross profit margin and the defensive interval ratio in relation to industry norms. The rating scale was developed on the basis of industry guidelines (Investopedia, 2016) and adapted to take into consideration the not-for-profit business segment to which the organisation relevant to this study belongs.

Table 5.21 and Table 5.22 provide an overview of the rating scales and the relevant performance descriptions.

Table 5.21.

Gross Profit Margin Evaluation Scale

Rating scale	Calculated gross profit margin	Description
1	Below 0% (negative score)	Bad performance with high risk of organisation not being sustainable
2	0–4%	Mediocre performance
3	5–8%	Norm performance
4	8–12%	Above the norm performance
5	12% +	Exceptional performance

Table 5.22.

Defensive Interval Criteria Rating Scale

Rating scale	Defensive interval criteria
1	Poor performance (negative amount)
2	0–3 months (high risk)
3	3–6 months (norm)
4	6 months – 9 months (minimal risk)
5	9 + months (low risk)

Table 5.23 shows a 17% improvement in the gross profit margin between T1 and T2, which indicates better financial health to be reported during T2. The improvement from -12% to

5% further indicates that compared to industry standards, and shows that the organisation reported performance in line with industry norms at T2, whilst being rated as performing poorly at T1. Although the actual rand values showed a major increase in performance for T2, the industry norm approach indicated that in T2 the company only marginally improved on business performance relative to industry norms.

Table 5.23.

Gross Profit Margin Scores

	T1	T2
Total revenue	R49 042 562	R49 795 605
Less cost of services	R54 699 098	R47 209 696
Total	-5 656 536	-2 585 909
Divide total by total revenue	-0,115339325	0,051930467
Multiply by 100	*100	*100
Gross profit margin	-12%	5%

Table 5.24 displays stable performance in terms of the defensive interval ratio at T1 and T2. The defensive interval ratio shows that at both T1 and T2, the organisation was able to meet current commitments according to the budget for 5.7 months into the future; compared to industry norms, this shows a minimal risk for the organisation in the future in terms of cash flow.

Table 5.24.

Defensive Interval Criteria Calculation

	T1	T2
Cash flow from operating activities	R25 694 324	R27 869 386
Less trade and other payables	R2 496 818	R3 150 191
Total	R23 197 506	R24 719 195
Operational costs required per month based on budget	R4 061 991	R4 282 245
Months cash available	5,71	5,77

5.3.1.2 Assessing the validity of the PWIS in predicting perceptions of business performance

In order to assess the validity of the PWIS in predicting perceptions of business performance, the following statistical procedures were applied:

1. The first step was to create the wIPS composite factor (individual perception of the business performance in terms of the three business indicators as reported in section 5.1.4.2) by means of principal component analysis. T1 was used as the measurement model. Creating the wIPS factor was statistically important in order to be able to empirically calculate the link between an individual perception of business performance score in terms of the three business indicators (profit/loss, operating cost, and cash flow).
2. The second step involved calculating correlations between the PWIS factors and the wIPS factor (see section 5.1.4 and Table 5.8 [T1] and Table 5.9 [T2]). Table 5.14 reported the correlations between the PWIS factors and the weighted IPS score for each of the three business indicators. The wIPS score correlations were the same across the three weighted individual perception of business performance indicators. Therefore, the wIPS notation was used in further statistical analysis to assess the association between the PWIS sub-factors and the perception of business performance on the three business indicators. Table 5.8 (T1) and Table 5.9 (T2) reported the correlation range between the PWIS factors and the wIPS factor. For T1 the correlations ranged between ($r \geq .30$ to $r \leq .49$; $p < .0001$; moderate practical effect). Similarly, for T2 the correlations ranged between ($r \geq .32$ to $r \leq .52$; $p < .0001$; moderate to large practical effect). All correlations were significant and positive.

It should be noted in the interpretation of the findings that the business performance of the organisation was very low in T1 and showed only a marginal improvement in T2 relative to industry norms. A high wIPS score indicated strong perceptions of business performance. The positive associations between the PWIS factors and the wIPS therefore suggest strong perceptions of people effectiveness enablers and a high sense of psychological attachment related to strong perceptions of performance in both T1 and T2. This step provided initial evidence of the predictive validity of the PWIS factors in relation to explaining the variance in individual perceptions of business performance.

3. The third step involved calculating a mediation model using the bootstrapping approach in SPSS as guided by Hayes (2013). This step tested the research hypothesis that (1) the people effectiveness enablers and psychological attachment variables significantly predict perception of business performance indicators (profit/loss, costs, and cash flow related to operating activities) (H_{a4}), and (2) strong perceptions of people effectiveness enablers relate to strong individual perceptions

of business performance through a high sense of psychological attachment (Ha5). The mediation results (T1) are reported in the section below.

5.3.1.3 *Mediation effect of psychological attachment in the people effectiveness enablers – perception of business performance relation*

According to the guidelines of Zhou et al. (2012) for significant mediating effects, four conditions should be met: (1) the independent variable (i.e. people effectiveness enablers) is significantly related to the mediator (i.e. psychological attachment); (2) the independent variable is significantly related to the dependent variable (wIPS: individual perception of business performance indicators factor); (3) the mediator is significantly related to the dependent variable; and (4) the independent variable becomes significantly smaller (partial mediation) when the mediator is held constant in the equation. In addition, the more reliable bootstrapping bias-corrected 95% confidence interval should not include zero (Shrout & Bolger, 2002) in order to support the significant indirect effect of the relevant mediator variable.

Mediation effect T1

Table 5.25 shows that for T1, the total mediation model was highly significant ($F = 71.10$; $p = .000$) and accounted for 26% ($R^2 = .26$; large practical effect) of the variance in the wIPS factor. All of the four conditions suggested by Zhou et al. (2012) for significant mediating effects were met. Perceptions of the people effectiveness enablers had significant direct paths to psychological attachment ($\beta = .61$; $p = .000$; CI range = .53 to .68) and to the wIPS factor ($\beta = .41$; $p = .000$; CI range = .32 to .49). Psychological attachment had a significant pathway to the wIPS factor ($\beta = .19$; $p = .000$; CI range = .25 to .45). These results provided supportive evidence of the predictive ability of the PWIS.

The strength of the relation of the people effectiveness enablers to individual perceptions of business performance was substantially reduced after accounting for sense of psychological attachment ($\beta = .22$; $p = .000$; CI range = .15 to .30), which indicated a mediating effect. The more robust bootstrapping confidence interval range was used to examine the significance of the indirect (mediating) effect of psychological attachment in the enablers – wIPS relation. As reported in Table 5.24, the CI range did not include zero which indicated a significant indirect effect (partial mediation). The kappa-squared (k^2) mediation effect (.19) and the R^2 mediation effect (.15) were both moderate and significant in practical effect.

Mediation effect T2

Table 5.25 shows that for T2, the total mediation model was also highly significant ($F = 93.33$; $p = .000$) and accounted for 28% ($R^2 = .28$; large practical effect) of the variance in the wIPS factor. All of the four conditions suggested by Zhou et al. (2012) for significant mediating effects were met. Perceptions of the people effectiveness enablers had significant direct paths to psychological attachment ($\beta = .55$; $p = .000$; CI range = .49 to .62) and to the wIPS factor ($\beta = .41$; $p = .000$; CI range = .32 to .50). Psychological attachment had a significant pathway to the wIPS factor ($\beta = .52$; $p = .000$; CI range = .41 to .63). These results provided supportive evidence of the predictive ability of the PWIS.

The strength of the relation of the people effectiveness enablers to individual perception of business performance was again substantially reduced after accounting for sense of psychological attachment ($\beta = .27$; $p = .000$; CI range = .22 to .34), which indicated a mediating effect. The more robust bootstrapping confidence interval range was again used to examine the significance of the indirect (mediating) effect of psychological attachment in the enablers – wIPS relation. As reported in Table 5.24, the CI range did not include zero, which indicated a significant indirect effect (partial mediation). The kappa-squared (k^2) mediation effect (.24) and the R^2 mediation effect (.14) were both moderate and significant in practical effect.

The results provided evidence in support of (1) research hypothesis Ha4: the people effectiveness enablers and psychological attachment variables significantly predict perception of business performance indicators (profit/loss, costs, and cash flow related to operating activities), and (2) research hypothesis Ha5: strong perceptions of people effectiveness enablers relate to strong individual perceptions of business performance through a high sense of psychological attachment. Overall, the mediation results for T2 revealed similar results as observed for T1. The results confirmed the test-retest reliability and validity of the PWIS in predicting perceptions of business performance within and over time.

5.3.2 Assessing the longitudinal link between psychological work immersion and business performance over time

This section relates to research hypothesis Ha6: The link between psychological work immersion and business performance increases over time with a significant increase in business performance. As a first step, t-tests were performed to assess whether the mean scores of sample 1 (T1) differed significantly from sample 2 (T2). Table 5.25 summarises the means and standard deviations and significant differences between T1 sample and T2

sample on the mean scores. Table 5.25 shows that the T1 and T2 sample participants differed significantly regarding their mean scores on the following PWIS factors:

- Management behaviour: The T2 sample participants scored significantly higher than the T1 sample participants (T1 mean = 2.90 vs T2 sample mean = 3.05; $p \leq .01$; $d = .21$; small practical effect).

Table 5.25.

Standardised Direct and Indirect Effect of People Effectiveness Enablers on Individual Perceptions of Business Performance through Psychological Attachment T1 & T2

	Point estimate	SE	Bootstrapping BC 95% CI	
			Lower	Upper
Mediator T1				
Psychological attachment	.22***	.04	.15	.30
R^2 mediation effect size	.15	.03	.11	.22
k^2 effect size	.19	.03	.13	.26
Direct effects				
Enablers – psychological attachment	.61***	.04	.53	.68
Enablers – wIPS	.41***	.04	.32	.49
Psychological attachment - wIPS	.19***	.05	.25	.45
Model info T1				
F_p	71.10***			
R^2	.26			
Mediator T2				
Psychological attachment	.27***	.03	.22	.34
R^2 mediation effect size	.14	.03	.09	.20
k^2 effect size	.24	.03	.19	.29
Direct effects				
Enablers – psychological attachment	.55***	.03	.49	.62
Enablers – wIPS	.41*	.04	.32	.50
Psychological attachment - wIPS	.52***	.57	.41	.63
Model info T2				
F_p	93.33***			
R^2	.28			

Note: T1 N = 414; T2 N = 482. BC = bias-corrected. CI = confidence interval. *** $p \leq .001$. ** $p \leq .01$. * $p \leq .05$. Mean estimated indirect effects are reflected in the table.

- Strategic connection: The T2 sample participants scored significantly higher than the T1 sample participants (T1 mean = 2.99 vs T2 sample mean = 3.23; $p \leq .01$; $d = .38$; small practical effect).
- People effectiveness enablers: The T2 sample participants scored significantly higher than the T1 sample participants (T1 mean = 2.90 vs T2 sample mean = 3.05; $p \leq .01$; $d = .21$; small practical effect).
- Psychological attachment: The T2 sample participants scored significantly higher than the T1 sample participants (T1 mean = 2.97 vs T2 sample mean = 3.12; $p \leq .01$; $d = .21$, small practical effect).
- Overall PWIS: The T2 sample participants scored significantly higher than the T1 sample participants (T1 mean = 3.04 vs T2 sample mean = 3.17; $p \leq .01$; $d = .28$; small practical effect).

No significant differences were observed between the mean scores of the T1 and T2 participants on the intra-team effectiveness and wIPS factors. The overall trend, as indicated by Table 5.26 below, shows that in general participants scored significantly higher at T2 than at T1. From a mean perspective, the general trend also indicates a higher mean score for T2 as opposed to T1 as indicated by Figure 5.2 below.

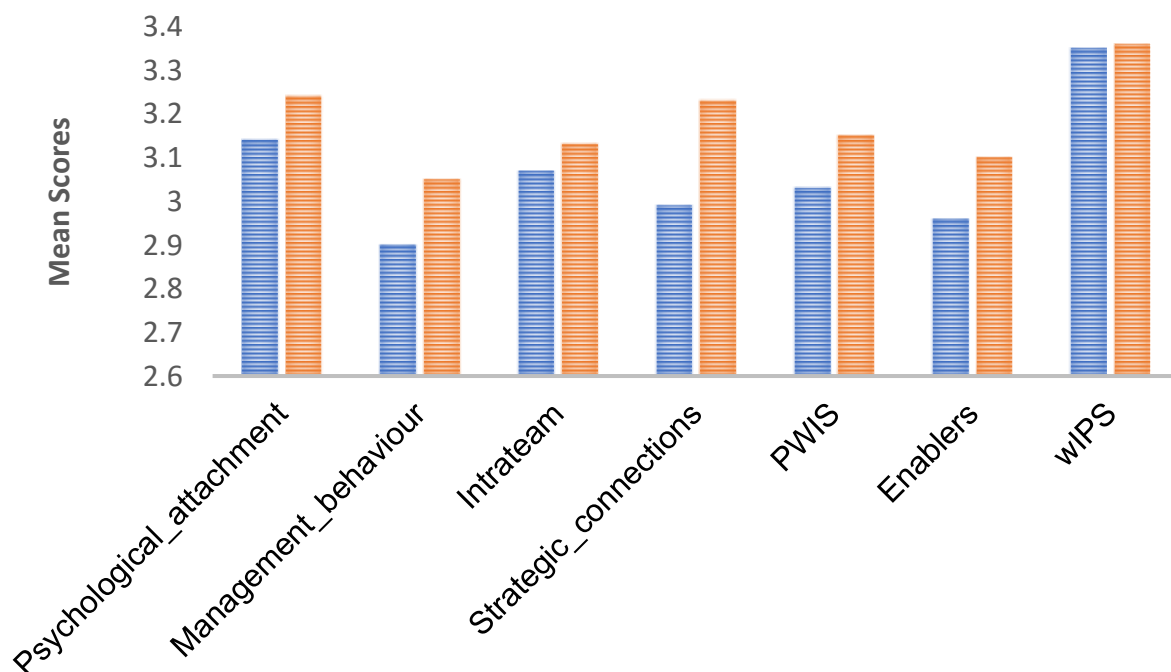


Figure 5.2. Comparison of mean scores

As a third step, the means of the samples were then compared with the business indicator scores achieved in T1 and T2. Table 5.26 shows that an increase in mean scores between T1 and T2 revealed a relationship between increased performance and higher mean scores, as reported between T1 and T2. The most significant differences were reported in terms of mean differences for the strategic connection construct and profit/loss, strategic connection and cash flow from operating activities, psychological attachment and profit/loss, psychological attachment and cash flow from operating activities, the PWIS and profit/loss and overall PWIS and cash flow from operating activities. All the factors showed an improvement in the mean scores whilst also indicating an improvement in business performance indicators.

Table 5.26.

Results of the T-test for Significant Mean Differences: PWIS T1 & T2

Variable	Sample	Mean (SD)	<i>F</i> (equality of variances assumed)	<i>t</i>	Cohen's <i>d</i>
Management behaviour	T1	2.90 (.78)	15.88***	-3.14**	.21
	T2	3.05 (.67)			
Intrateam effectiveness	T1	3.07 (.67)	1.70**	-1.49	n/a
	T2	3.13 (.63)			
Strategic connection	T1	2.99 (.69)	16.97***	-5.47**	.38
	T2	3.23 (.58)			
People effectiveness enablers	T1	2.97 (.58)	7.65**	-3.98**	.27
	T2	3.12 (.53)			
Psychological attachment	T1	3.13 (.51)	14.18***	-2.75***	.21
	T2	3.23(.44)			
Overall PWIS	T1	3.04 (.49)	9.98**	-3.98***	.28
	T2	3.17 (.44)			
wIPS	T1	3.35 (.54)	.44	.43	n/a
	T2	3.36(.54)			

Note: T1 N = 378; T2 N = 442. ***p ≤ .001. **p ≤ .01. * p ≤ .05

Overall, the results provided evidence in support of research hypothesis Ha6: The link between psychological work immersion and business performance increases over time with evidence of an increase in business performance.

Table 5.27.

Comparison of Sample Means (T1 and T2) with Business Indicators Scores

	T1				T2			
	Mean	Profit/loss	Operating costs	Cash flow from operating activities	Mean	Profit/loss	Operating costs	Cash flow from operating activities
Psychological attachment	3,14	-R5 656 536	R45 910 736	-R6 363 647	3,24	R2 585 909	R43 968 963	R2 485 803
Management behaviour	2,9	-R5 656 536	R45 910 736	-R6 363 647	3,05	R2 585 909	R43 968 963	R2 485 803
Intrateam	3,07	-R5 656 536	R45 910 736	-R6 363 647	3,13	R2 585 909	R43 968 963	R2 485 803
Strategic connections	2,99	-R5 656 536	R45 910 736	-R6 363 647	3,23	R2 585 909	R43 968 963	R2 485 803
PWIS	3,03	-R5 656 536	R45 910 736	-R6 363 647	3,15	R2 585 909	R43 968 963	R2 485 803
Enablers	2,96	-R5 656 536	R45 910 736	-R6 363 647	3,1	R2 585 909	R43 968 963	R2 485 803
IPS	3,35	-R5 656 536	R45 910 736	-R6 363 647	3,36	R2 585 909	R43 968 963	R2 485 803

5.4 DISCUSSION

The general aim of the research was to explore the PWIS as a predictor of perceptions of business performance indicators (profit/loss, costs, and cash flow related to operating activities) over time (as measured at T1 and T2 over 14 months). The following section will discuss the integrated research findings based on the specific research aims and the hypotheses relevant to the research study.

5.4.1 Biographical profile of sample

This research considered race, gender, tenure and age as influencing criteria for the study. These criteria were deemed relevant owing to the nature and the context of the study. Non-probability sampling was used to measure the same population at both T1 and T2 with a time interval of 14 months in between. From a biographical perspective, T1 showed significant correlations between age and race, gender and age, race and tenure, and age. For T2, significant correlations were reported between race and age, gender and race, and tenure and age. The study further showed that in T1, age and gender positively predicted psychological attachment, while gender negatively predicted psychological attachment, thus suggesting potential differences between the male and female participants. In T2, only age significantly predicted psychological attachment.

These findings suggest that biographical considerations play an important role when evaluating psychological attachment levels and people effectiveness enablers in modern

South African organisations. The findings are similar to previous studies conducted in the South African environment by Coetzee and Veldsman (2013), Swart (2009) and Martins and Coetzee (2011), which highlighted the need for biographical factors to be considered when defining organisational development interventions aimed at improving levels of psychological work immersion. The study found that at T1, age and gender predicted psychological attachment, which suggests that organisations should consider age and gender-specific strategies when attempting to influence the levels of psychological attachment within the workforce. This suggestion is in line with the current literature on age-related organisational studies, which indicates that different age groups have different expectations of the psycho-social contract between employee and employer (Burke & Noumair, 2015). Current gender-related studies also highlight the fact that different gender groups have different needs in the work environment and modern knowledge economy organisations have started to shift their focus towards understanding and acknowledging gender differences in the workplace (Cornwall & Rivas, 2015). The current study corroborates this finding and suggests that organisations should consciously consider these factors when aiming to improve levels of psychological work immersion within the workforce. The study further emphasises that psychological attachment positively predicts individual perceptions of business performance. As this study has demonstrated, business performance (profit/loss, operating costs, cash flow from operating activities) showed an improvement over time aligned with an improvement in individual perceptions of business performance aligned to higher levels of psychological work immersion. This finding suggests that for organisations to improve business performance over time (profit/loss, operating costs, cash flow from operating activities), a critical area of focus should be both age and gender-based strategies in order to improve the areas of psychological attachment that would lead to an improvement in individual business performance perception and, ultimately, business performance.

5.4.2 Evidence of validity of the PWIS

The findings in relation to research aim 1 will be discussed below:

Research aim 1	To assess the psychometric properties of the Psychological Work Immersion Scale (PWIS) in terms of its validity as a measurement model (construct, discriminant and convergent validity) (time 1 versus time 2: within-subject analysis and between time 1 and 2 within-subjects comparisons).
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The PWIS factor structure is a valid measure of the psychological work immersion construct across time (T1 and T2). The results provided evidence of the convergent, intra-discriminant and external discriminant validity (construct validity) of the PWIS within (T1 and T2) and over time (T1 vs T2). Construct validity is important in terms of showing that the PWIS measures the underlying constructs associated with people effectiveness enablers and psychological attachment. The study found that the PWIS displayed construct validity at both T1 and T2 in terms of a modified four-factor solution. The four-factor solution reported that all the fit statistics were well in line with the threshold values for good model fit and, as such, provided evidence of within-subject convergent validity across time (T1 and T2). The modified four-factor solution showcased evidence of convergent and discriminate validity, with the factor loadings for T1 and T2 showing that constructs that should not display significant relationships did not do so, whilst factors that are related to each other indicated interrelatedness. This suggests that the study found evidence in support of Ha1 in terms of the PWIS factor structure as a valid measure of the psychological work immersion construct across time (T1 and T2).

This finding suggests that the PWIS can be applied to measure the underlying constructs within and between time effectively. This finding also implies that the PWIS can be used as a pre- and post-measure to evaluate the effectiveness of organisational development interventions associated with improving the underlying PWIS constructs and to show the impact of interventions on actual business performance. Within the context of the knowledge economy organisation, this finding is deemed important due to the need for organisational development interventions to demonstrate their relevance and the impact they have on improving the associated constructs and, by implication, business performance. As mentioned in the literature, the constant drive for organisations to cut costs, become more efficient and drive effectiveness has called for the organisational development practitioner to be able to demonstrate how proposed interventions will improve organisational effectiveness.

Owing to the nature of the relationship between psychological attachment, individual perceptions of business performance and improvements in business performance (profit/loss, operating costs, cash flow from operating activities), this study has shown the relevance and the importance of the PWIS as a measure of psychological work immersion within the context of understanding how to improve business performance in knowledge economy organisations. This suggestion is in line with current literature on the underlying factors associated with the PWIS and its relevance and importance in knowledge economy organisations (Barrick et al., 2015). This finding further corroborates the results obtained

from Veldsman (2013) and Coetzee and Veldsman (2013), which highlight both the importance and the usefulness of the PWIS as a measure of people effectiveness in such organisations.

5.4.3 Evidence of reliability of the PWIS

The findings in relation to research aim 2 will be discussed below:

Research aim 2	To assess the test-retest reliability of the PWIS across time (time period of 14 months).
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The results provided supportive evidence for research hypothesis Ha2: The PWIS has acceptable internal consistency reliability within and across time (T1 and T2). The study reported that the internal consistency reliability of the management behaviour, strategic connection and psychological attachment constructs was significantly lower in T2 and not equal to the internal consistency reliability achieved in T1. The significantly lower internal consistency reliability coefficients for these three PWIS factors in T2 could be attributed to measurement error and other confounding factors that influence repeated measures. In longitudinal studies, factors such as familiarity with items, panel attrition and non-responsiveness of participants over time could be reasons for lower internal consistency reliability, and could thus have been pertinent to the lower internal consistency reliability achieved in T2 (McCrae et al., 2011). The lack of reliability of the intrateam effectiveness factor between T1 and T2 also highlights the need for further exploration of team functioning in the knowledge economy where temporary and virtual teams are becoming the norm. This finding could potentially highlight that team effectiveness needs to be understood differently and can have significant implications for the way organisations structure, organise and optimise teamwork.

The study has shown that the items in the PWIS are an appropriate measure of its underlying constructs for both T1 and T2. This finding is in line with previous research studies related to the internal consistency reliability of the PWIS for use as a measurement instrument in the South African environment (Coetzee & Veldsman, 2013; Veldsman, 2013). However, the study emphasised that factors associated with measurement error could influence the reliability of the PWIS over time and should be taken into consideration when using the PWIS as a measurement instrument.

The test-retest reliability of the PWIS across T1 and T2 was assessed by comparing the within-subject bi-variate correlations for T1 and T2. The results showed that the range of the

bi-variate correlations for T1 and T2 was very similar in magnitude and direction (positive), as well as being positive and significant for both T1 and T2. The practical effect size was moderate for both T1 and T2. The PWIS factors also significantly and positively predicted the wIPS factor in T1 and T2 (moderate effect). The Fisher z transformation test showed that the *r* values between T1 and T2 (across time) did not differ significantly, which provided evidence of test-retest reliability for the PWIS in support of Ha3: The PWIS demonstrates test-retest reliability across time.

This finding suggests that the PWIS can be used effectively as a measure of psychological work immersion over time in knowledge economy organisations. It also highlights the usefulness of the PWIS as an effective pre- and post-measure instrument for monitoring levels of psychological work immersion in organisations, as well as evaluating the usefulness and value of organisational development interventions aimed at increasing levels of psychological work immersion in the knowledge economy organisational landscape. This finding is in line with suggestions made by Veldsman (2013) and Coetzee and Veldsman (2013) which highlight the potential usefulness of the PWIS as an instrument for measuring and monitoring people effectiveness within organisations over time. This finding is deemed important because of the need for ongoing measurement in knowledge economy organisations in order to identify trends over time in terms of building people effectiveness capacity. The valid and reliable nature of the PWIS as presented by this study, positions the PWIS as a useful and relevant instrument for measuring the levels of psychological work immersion within and across time in order to monitor and track trends related to psychological work immersion levels in the organisation. This finding provides the foundation for the use of the PWIS as a predictive instrument and offers the opportunity for people practitioners to enter the predictive measurement domain.

5.4.4 Evidence of predictive validity of the PWIS

The following section will discuss the research findings in relation to the research aim stipulated below:

Research aim 3	To assess the predictive (criterion) validity of the PWIS for perceptions of key business performance indicators (profit/loss, operating costs, and cash flow related to operating activities) across time (time 1 versus time 2: within-subject analysis and between time 1 and 2 within-subjects comparisons)
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The results provided evidence in support of (1) research hypothesis Ha4: the people effectiveness enablers and psychological attachment variables significantly predict perceptions of business performance indicators (profit/loss, costs, and cash flow related to operating activities), and (2) research hypothesis Ha5: strong perceptions of people effectiveness enablers relate to strong individual perceptions of business performance through a high sense of psychological attachment. Overall, the mediation results for T2 revealed similar results as observed for T1. These mediation results confirmed the test-retest reliability and validity of the PWIS in predicting perceptions of business performance within and over time.

The results suggest that for the sample of participants in T1 and T2, strong perceptions of people effectiveness enablers were likely to relate to a high sense of psychological attachment which, in turn, was associated with strong perceptions of business performance. An increase in sense of psychological attachment was likely to reduce the effect of the people effectiveness enablers on individual perceptions of business performance.

This finding shows that psychological attachment is an important factor in influencing the individual perceptions of business performance that are related to actual improvements in business performance over time. This finding shows higher levels of psychological attachment and higher levels of commitment. The latter will specifically mediate the relationship between people effectiveness enablers and the individual perceptions of business performance. This highlights the fact that more committed employees seem to have a more positive perspective on the way the organisation is performing, whilst bearing in mind that they showed a higher level of commitment to helping the organisation achieve desired goals and performance. This finding highlights previous research studies in this regard which found that higher levels of commitment in the workforce are required for organisations to perform better (Barrick et al., 2015).

The study further found that higher levels of psychological attachment lead to employees being more invested and aware of broader organisational goals, which in turn could potentially contribute to feelings of meaningfulness, empowerment and ownership within the organisation. This finding also aligns with previous research on the subject in terms of driving people effectiveness and increasing levels of commitment in the workforce (Burke & Noumair, 2015). This finding is important in the context of organisational effectiveness, as there seems to be evidence that higher levels of psychological attachment will lead to a greater realisation of business performance and could potentially result in employees extending discretionary effort and personal sacrifice in order to improve organisational performance. This finding is in line with current views on the impact of employee

engagement on business performance, and further highlights the fact that individual perceptions of performance play an important part in raising levels of psychological attachment in the workforce (Barrick et al., 2015).

In terms of research aim 4, in the following section the key insights gained from the research will be discussed:

Research aim 4	To assess longitudinal links between psychological work immersion and business performance indicators (14-month time interval)
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Overall, the results provided evidence in support of research hypothesis Ha6: The link between psychological work immersion and business performance increases over time with evidence of an increase in business performance. The study further showed that people effectiveness enablers improved levels of psychological attachment, which further corroborates previous research that highlights that organisational development interventions aimed at improving people effectiveness enablers can influence business performance (Veldsman, 2013). Although the organisation in the context of this study only displayed small levels of improvement in terms of industry-related norms, internally the organisation showed big improvements in terms of relevant internal business performance measures. This implies that organisational development interventions targeted at specific people effectiveness enablers and implemented by the organisational development consultancy between T1 and T2 were adding value, even though business performance in relation to industry norms had not improved to a level in line with the rest of the market. This finding is important for managing the expectations of key stakeholders in terms of the longer-term value of organisational development interventions as an investment in the future, as opposed to a quick fix that produces immediate results. This is in line with suggestions made by Appelbaum, Karasek, Lapointe, and Quelch (2015), who suggest that current organisational leaders are losing faith in organisational development interventions because the desired results are not visible immediately. The present study suggests that organisational development interventions do add value and influence business performance over time, but that cognisance should be taken of the fact that the value of organisational development interventions should be assessed in the longer term as opposed to expecting quick returns on investment.

The study further suggests that managing individual perceptions of performance is an important factor in organisations if performance is to be improved over time. This finding has important implications for organisational practices related to communication, the

transparency of information shared with employees, as well as perceptions created in relation to practices associated with improving organisational effectiveness. This refers specifically to practices that will negatively influence psychological attachment, such as restructuring, cost-saving initiatives, freezing of appointments and cutting of training and development budgets. Such initiatives have been shown to negatively influence employee morale (De Jong, Wiezer, De Weerd, Nielsen, Mattila-Holappa, & Mockallo, 2016) and the present study corroborates this finding by stating that lower levels of psychological attachment will influence the perceptions of business performance and ultimately actual business performance. This consideration is important as modern organisations tend to be constantly implementing interventions aimed at improving organisational effectiveness and business performance. However, as this study shows, organisations should also actively consider the perception of performance that is created within the organisation as a result of these interventions.

From a practical point of view, this study further highlights the need for robust organisational change and development practices, which should accompany interventions associated with improving psychological attachment, people effectiveness enablers and overall organisational effectiveness. Organisational change and development, even if just focused on managing perceptions of individual performance and explaining why and how interventions will support the sustainability of the organisation, should be an essential component when planning any intervention associated with improving organisational effectiveness.

In summary, the PWIS has been shown to be a valid and reliable measure of psychological work immersion over time and has displayed a significant relationship with individual perceptions of business performance. Individual employee perceptions were found to have an impact on actual business performance over time. The study highlighted the fact that the PWIS is a valuable measure of people effectiveness enablers and psychological attachment, both of which revealed significant relationships with individual perceptions of performance and subsequently actual business performance. The study highlights the fact that psychological attachment is important in the context of managing business performance over time and that individual employee perception is an important factor to consider when aiming to improve business performance. The study further corroborates current thinking on the importance of organisational development practices in improving people effectiveness enablers, improving psychological attachment and influencing individual employee perceptions of performance. The study also highlighted the importance of change management to ensure that employee perceptions during organisational improvement

practices are managed and it emphasised the longitudinal link between psychological attachment and actual business performance.

5.4.5 Limitations

Owing to the nature of the study, a number of limitations exist and these have to be considered when interpreting the findings of the study. The section below will highlight some of the limitations associated with the study, whilst Chapter 6 will discuss these limitations in more detail. The limitations of the study can be divided into two categories:

5.4.5.1 Limitations related to the nature and design of the study

The present research was limited to exploring the relationship between people effectiveness enablers, psychological attachment, psychological work immersion and business performance indicators. No attempt was made to classify or manipulate the data on the basis of family or spiritual background, and no participants were excluded on the basis of their socio-demographic characteristics (age, gender, race and organisational tenure). The research was intended to be original in nature and, as such, focused on its core purpose and aim – exploring the relationship between psychological work immersion and business performance indicators.

From a longitudinal research point of view a number of limitations exist that are considered relevant to this study. Stidham et al. (2014) state that longitudinal research may be costly to implement, participants may drop out over time and the familiarity with the instrument used may have an impact on the comparability of the results over the defined measurement period. A further limitation of the study was the fact that it was limited to a period of 14 months and only included two measurement periods. Further analysis is required in order to include additional measurement instances to ascertain the relevance of the current findings over time. Another limitation of longitudinal research pertains to the fact that changes in the macro and micro context could potentially influence the data.

By its nature, the present study focused specifically on one organisation within the South African environment. The generalisability of the findings therefore needs to be evaluated within other contexts and environments in order to evaluate the relevance of the research findings. The study was further limited to N=414 (T1) and N=482 (T2), which could potentially have influenced the research findings. Future studies should be conducted with larger sample sizes in order to establish the relevance of the findings of this study. The sample further consisted mostly of female and African participants, which could have influenced the findings as well as the generalisability of the findings to other biographical groups. The biographical criteria relevant to this study were limited to age, race, tenure and

gender and, as such, other important biographical criteria need to be included in future studies in order to validate the current findings.

5.4.5.2 Limitations associated with the measuring instrument

The PWIS is a self-report measurement instrument and therefore the limitations associated with self-report instruments need to be taken into consideration. These include considerations related to the fact that individuals tend to overestimate themselves and are prone to exaggeration, the social desirability bias that occurs when respondents try to answer in line with what they believe society dictates and the fact that self-reporting approaches tend to be subjective by nature because scale descriptors could potentially have different interpretations depending on individual responders (Kormos & Gifford, 2014). Another limitation related to the study was in terms of measurement error, which could have been the result of both macro and micro-influencing factors. Measurement error could potentially have influenced the convergent validity of the PWIS for both T1 and T2, as well as the intra-discriminant validity of the PWIS as a measurement instrument. Both these limitations were considered during the interpretation of the research findings.

A further limitation of the study is associated with the fact that the individual perception scores showed no correlation between T1 and T2. This could be due to the nature of the construct as well as the climate within the organisation at the time of measurement.

5.4.6 Implications

The implications of the study will be discussed in terms of the theoretical, research and practical implications relevant to the research study.

From a theoretical perspective, the study highlights the importance and relevance of the PWIS as an indicator of people effectiveness within the context of organisational effectiveness practices. Theoretically, the study corroborates previous research in terms of the importance and relevance of the sub-factors associated with the PWIS as a measure of people effectiveness and its importance in the broader domain of organisational effectiveness. The study reveals that factors related to psychological attachment are an important consideration when establishing people effectiveness in the organisation over time and contributes to the current literature on the relevance of organisational development practices aimed at improving psychological attachment. The study further builds on the current literature related to people effectiveness and its relationship to actual business performance, whilst highlighting the importance of managing employee perceptions of business performance as an influencing variable in improving actual business performance.

The study also points out that additional research is required within the domain of psychological work immersion, as the relationship over time with actual business performance is significant for the sustainability of knowledge economy organisations. The validity of the PWIS across industries and the generalisability of the findings associated with this study need to be explored in other industries in order to establish the PWIS as a valid measure of people effectiveness across industries, as well as to establish the use of the PWIS as a measure of people effectiveness and a measure of the value, relevance and impact of organisational development interventions across time.

From a practical point of view, the study shows the need for organisations to measure and monitor people effectiveness using instruments such as the PWIS over time. The study further implies that organisations should aim to improve the levels of psychological attachment in order to improve business performance. Practically, this implies a re-evaluation of not only the value of human resources and organisational development practices, but also the potential focus and prioritisation of these functions in terms of actual delivery. The study further implies that the value of organisational development interventions should be evaluated in the longer term and that expectations in this regard need to be managed with key organisational stakeholders.

The study highlighted the importance of focusing on people effectiveness enablers as critical to the success of people effectiveness outcomes so as to drive higher levels of psychological attachment and influence employee perceptions of business performance. The study showed that these perceptions will influence actual business performance over time. This implies that organisations, when dealing with initiatives aimed at improving organisational effectiveness, need to consider robust change management approaches that could potentially influence individual employees' perceptions of organisational performance.

The implications of the study will be discussed in more detail in Chapter 6 within the context of the research aims applicable to the study.

5.5 CHAPTER SUMMARY

The purpose of this chapter was to discuss the statistical analyses and results emanating from this study. The chapter reported the statistical procedures applied in testing the research hypotheses in relation to the research objectives of the study and presented the empirical research results using tables and figures. Descriptive and inferential statistics were also discussed in line with the designated research objectives. In the final section of the chapter, the empirical findings, limitations and implications of the study were discussed.

This chapter discussed the research results in relation to the general research aim by exploring the PWIS as a predictor of business performance indicators (profit/loss, costs, and cash flow related to operating activities) over time (as measured at T1 and T2 over 14 months). The chapter further integrated the research results and achieved the following empirical research aims:

- **Research aim 1:** To assess the psychometric properties of the Psychological Work Immersion Scale (PWIS) in terms of its validity as a measurement model (construct, discriminant and convergent validity) (time 1 versus time 2: within-subject analysis and between time 1 and 2 within-subjects comparisons).
- **Research aim 2:** To assess the test-retest reliability of the PWIS across time (time period of 14 months).
- **Research aim 3:** To assess the predictive (criterion) validity of the PWIS for perceptions of key business performance indicators (profit/loss, operating costs, and cash flow related to operating activities) across time (time 1 versus time 2: within-subject analysis and between time 1 and 2 within-subjects comparisons)
- **Research aim 4:** To assess longitudinal links between psychological work immersion and business performance indicators (14-month time interval)

Chapter 6 will discuss the conclusions, limitations and recommendations relevant to the study and evaluate the contribution the study makes in terms of the theoretical, empirical and practical contributions to the field of Industrial and Organisational Psychology.

CHAPTER 6: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

This chapter will focus on a discussion of the following research aims that were formulated for this study:

- **Research aim 5:** Draw conclusions and formulate recommendations for future research.
- **Research aim 6:** Critically evaluate the implications of organisational development interventions focused on people practices aimed at improving organisational effectiveness.

The chapter will start by discussing the conclusions related to the general research aim, the specific literature, the empirical aims and the research hypotheses relevant to the study. The chapter will further discuss the limitations of the current research study in terms of the literature review and the empirical study and make recommendations for future research within the domain of Industrial and Organisational Psychology.

6.1 CONCLUSIONS

The following section will highlight the conclusions related to the study based on the research aims stipulated in Chapter 1.

6.1.1 Conclusions related to the literature review

From a literature perspective the study aimed to explore the following research aims which will be discussed below:

- **Research aim 1:** Conceptualise organisational effectiveness and its relationship to people effectiveness and business performance
- **Research aim 2:** Conceptualise psychological work immersion as an indicator of people effectiveness
- **Research aim 3:** Describe the theoretical association between psychological work immersion and business performance
- **Research aim 4:** Describe the implications of organisational development interventions focused on people practices related to organisational effectiveness and business performance

6.1.1.1 *Research aim 1*

- Conceptualise organisational effectiveness and its relationship to people effectiveness and business performance

The study revealed that organisational effectiveness is a critical success factor in ensuring the sustainability of the organisation and that it has become a key differentiator of competitive advantage (Ukpadi et al., 2014). The study found that although no one definitive definition of organisational effectiveness exists, the knowledge economy calls for a multifaceted perspective that goes beyond the traditional domains of financial performance to incorporate human capital metrics (Kataria et al., 2013; Rahman, 2014). The study showed that organisational effectiveness has a clear relationship with business performance, as well as being a key criterion for enabling an organisational environment that is conducive to achieving organisational purpose. The study highlighted that various models of organisational effectiveness and business performance exist and that rather than defining one model, each model contributes uniquely towards understanding the concept of organisational effectiveness. Criteria for effectiveness will also be context specific and as such they should be constantly evaluated over time and adjusted according to organisational needs on the basis of time, context and objectives. The study showed that although the rise in the importance of human capital is a key contributor to an organisation's ability to be effective and to perform, there is currently limited focus on the elements that influence the behavioural systems within the organisation.

To summarise, the following conclusions can be drawn for research aim 1:

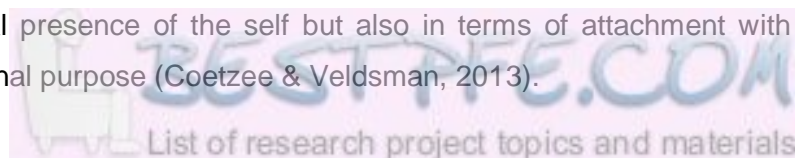
- Organisational effectiveness is becoming a relevant and important indicator of organisational sustainability in the knowledge economy.
- Various models and theories of organisational effectiveness exist, yet there seems to be no definitive definition on what constitutes organisational effectiveness; as such a multifaceted approach to defining organisational effectiveness is required to ensure its relevance in the knowledge economy.
- Consensus in the literature, however, indicates that organisational effectiveness focuses on the optimal utilisation of organisational resources in order to achieve defined organisational goals or outputs effectively within a specific context.
- Environmental influencing factors have become an important criterion in organisational effectiveness owing to the increasing propensity to describe organisations as open systems that change over time.

- Organisational effectiveness has a clear relationship with business performance, yet traditional approaches are limited in terms of what constitutes organisational effectiveness beyond the scope of financial performance indicators.
- The knowledge economy has forced organisations to look at human capital as a source of competitive advantage and, as such, the domain of people effectiveness has become an important consideration for modern organisations.
- The contribution of human capital to organisational effectiveness has become increasingly important, focusing on factors related to enabling people effectiveness. Nevertheless, the current literature indicates that although there has been an increase in the literature on these factors, there is no consensus to what constitutes people effectiveness or, more importantly, how these factors are related to business performance.
- Current measures of people effectiveness also seem to be focused predominantly on measures of past performance and have not entered the predictive domain to enable a strategic perspective on people effectiveness.
- The strategic role of human resource and organisational development practitioners will continue to be diluted in knowledge economy organisations if people effectiveness measurement does not enter the predictive domain.

6.1.1.2 *Research aim 2*

- Conceptualise psychological work immersion as an indicator of people effectiveness

The study conceptualised psychological work immersion within the context of organisational effectiveness as a relevant people effectiveness measure. Psychological work immersion was distinguished from other concepts such as job involvement, work engagement and flow by the focus on psychological presence within the particular context that forms part of the construct. The people effectiveness enablers and psychological attachment underlying psychological work immersion were shown to be valuable indicators of people effectiveness within a knowledge economy organisation. The study found psychological work immersion to be a state of connection to the organisation, the individual contribution to the organisational purpose within a particular context and a deep involvement in the individual job role and task. Psychological work immersion encapsulates the requirements of a knowledge economy workplace that is characterised by a diversified workforce, virtual teams and geographical distribution, in that it positions the state of work immersion not just in terms of the psychological presence of the self but also in terms of attachment with and to the broader organisational purpose (Coetzee & Veldsman, 2013).



To summarise, the following conclusions can be drawn for research aim 2:

- The constructs related to psychological work immersion were shown to be relevant in terms of evaluating people effectiveness in the knowledge economy workplace.
- The psychological work immersion constructs, with a specific focus on psychological attachment, were shown to be important in evaluating the levels of people effectiveness in knowledge economy organisations.
- People effectiveness enablers were shown to be important in terms of enabling psychological attachment and, by association, improving people effectiveness relevant to the knowledge economy workplace.

6.1.1.3 *Research aim 3*

- Describe the theoretical association between psychological work immersion and business performance

The study highlighted that traditional criteria for organisational effectiveness and business performance, such as financial indicators, have provided a one-sided view of organisational performance and thus the scope of the criteria that define the effective outputs of the organisation in terms of performance needs to be enhanced to include factors such as changeability, speed to market, innovation and human capital effectiveness. Human capital, as a key contributor to organisational effectiveness, has become extremely relevant in the knowledge economy, as the ability for knowledge to be translated into explicit knowledge has become a source of competitive advantage for organisations. Consequently, psychological attachment, work immersion and engagement have become key indicators of people effectiveness in the knowledge economy and, as such, the research literature has indicated an increased focus on constructs such as commitment, willingness, employee satisfaction and trust. From a business perspective, these constructs have been shown to have a strong relationship with business performance. The concept of psychological work immersion was shown to be a relevant indicator of people effectiveness and the theoretical relationship between psychological work immersion and business performance was shown to be important in terms of influencing organisational effectiveness. The study has highlighted that psychological work immersion is a relevant indicator of people effectiveness and its relationship with both organisational effectiveness and business performance can be substantiated through the literature.

To summarise, the following conclusions can be drawn for research aim 3:

- Psychological work immersion as a measure of people effectiveness was shown to be associated with organisational effectiveness in knowledge economy organisations.
- Organisational effectiveness was shown to influence business performance over time and to be an important factor in ensuring the sustainability of the organisation over time.
- Psychological work immersion and its sub-constructs were shown to influence levels of business performance over time.

6.1.1.4 *Research aim 4*

- Describe the implications of organisational development interventions focused on people practices related to organisational effectiveness and business performance

The study revealed that a need exists for a re-evaluation of the contribution made by organisational development practices to both the people effectiveness enablers and psychological attachment constructs. The study highlighted the importance and relevance of organisational development practices in knowledge economy organisations in terms of their ability to influence and improve both levels of psychological work immersion and employee perceptions of business performance. This, in turn, influences actual business performance. The literature revealed that organisational development interventions can significantly influence psychological work immersion levels within the organisation; however it also highlighted the need to explore the relevance of organisational development practices more widely than just the traditional domain of profit-focused organisations. To date, the literature indicates that the domain of organisational development has been largely focused on profit-driven organisations where improvements in organisational effectiveness translate to improvements in financial performance. The value of organisational development in the non-profit domain was mentioned as an increased focus area for future studies and should be considered as such in view of the rise in humanitarian psychological practices. The study further highlighted the shifting scope of organisational development practices, which should extend beyond merely the organisational level to consider their applicability and relevance at the organisational, team and individual levels in order to remain relevant in the knowledge economy landscape.

To summarise, the following conclusions can be drawn for research aim 4:

- Organisational development practices are relevant in modern knowledge economy organisations and are able to influence levels of psychological work immersion and thus, by implication, business performance.
- The value add of organisational development practices should be explored beyond the traditional domain of profit-focused organisations.
- Organisational development practices should take cognisance of the value add of interventions at organisational, team and individual level in order to remain relevant in the modern knowledge economy organisation and in changing workforce.

Table 6.1 summarises the conclusions based on the literature aims of the present study:

Table 6.1.

Summary of Literature Research Aims and Conclusions

Literature research aims	Summary conclusions from the study
Research aim 1: Conceptualise organisational effectiveness and its relationship to people effectiveness and business performance	Organisational effectiveness is a relevant construct in the knowledge economy but requires a multifaceted approach that incorporates people effectiveness metrics in the organisational performance scorecard
Research aim 2: Conceptualise psychological work immersion as an indicator of people effectiveness	Psychological work immersion is a suitable indicator of people effectiveness as it encapsulates important criteria related to the optimal functioning of human capital in knowledge economy organisations.
Research aim 3: Describe the theoretical association between psychological work immersion and business performance	Psychological work immersion and the relevant sub-constructs have shown a positive relationship with business performance and organisational output.
Research aim 4: Describe the implications of organisational development interventions focused on people practices related to organisational effectiveness and business performance	Knowledge economy organisations call for a more robust organisational development approach that focuses on improving the factors related to psychological work immersion in order to showcase their value and impact in the organisation.

The following section will discuss the conclusions related to the empirical study.

6.1.2 Conclusions related to the empirical study

The study explored the following empirical research aims which will subsequently be discussed:

- **Research aim 1:** To assess the psychometric properties of the Psychological Work Immersion Scale (PWIS) in terms of its validity as a measurement model (construct, discriminant and convergent validity) (time 1 versus time 2: within-subject analysis and between time 1 and 2 within-subjects comparisons).
- **Research aim 2:** To assess the test-retest reliability of the PWIS across time (time period of 14 months).
- **Research aim 3:** To assess the predictive (criterion) validity of the PWIS for perceptions of key business performance indicators (profit/loss, operating costs, and cash flow related to operating activities) across time (time 1 versus time 2: within-subject analysis and between time 1 and 2 within-subjects comparisons).
- **Research aim 4:** To assess the longitudinal links between psychological work immersion and business performance indicators (14-month time interval).

6.1.2.1 *Research aim 1*

- To assess the psychometric properties of the Psychological Work Immersion Scale (PWIS) in terms of its validity as a measurement model (construct, discriminant and convergent validity) (time 1 versus time 2: within-subject analysis and between time 1 and 2 within-subjects comparisons).

The research showcased evidence in support of research hypothesis Ha1 in terms of the PWIS factor structure as a valid measure of the psychological work immersion construct across time (T1 and T2). The empirical results demonstrated a good overall fit for the revised four-factor solution and reported evidence of construct, discriminant and convergent validity at both T1 and T2. The four-factor solution showed good fit in terms of management behaviour, intrateam effectiveness, strategic connection and psychological attachment (commitment, absorption, employee motivation) and established the PWIS as a valid measure of people effectiveness within and across time.

The following conclusion can be drawn from the study in relation to research aim 1:

- The revised PWIS four-factor solution displayed validity (construct, discriminant and convergent) as a measurement model across and within time.

6.1.2.2 *Research aim 2*

- To assess the test-retest reliability of the PWIS across time (time period of 14 months)

The results provided supportive evidence for research hypotheses Ha2: The PWIS has acceptable internal consistency reliability within and across time (T1 and T2) and Ha3: The

PWIS demonstrates test-retest reliability across time. Three reliability tests were performed, namely, Cronbach's alpha coefficient (α), composite reliability, and a pairwise comparison of the Cronbach's alpha reliability coefficients of the T1 sample and T2 sample using Feldt's test for differences in independent reliability coefficients.

The following conclusions can be drawn from the study in relation to research aim 2:

- The revised PWIS four-factor solution displayed test-retest reliability across time and can be used as a measure of people effectiveness in knowledge economy organisations.
- The revised PWIS four-factor solution can be used to measure the effectiveness of organisational development interventions over time.
- The impact of organisational development interventions on psychological attachment, management behaviour, intrateam effectiveness and strategic connection can be evaluated by using the revised PWIS four-factor solution as a pre- and post-measurement instrument in determining people effectiveness.
- The revised PWIS four-factor solution is a valuable instrument for measuring and monitoring levels of people effectiveness in knowledge economy organisations over time.

6.1.2.3 Research aim 3

- To assess the predictive (criterion) validity of the PWIS for perceptions of key business performance indicators (profit/loss, operating costs, and cash flow related to operating activities) across time (time 1 versus time 2: within-subject analysis and between time 1 and 2 within-subjects comparisons)

The results provided evidence in support of (1) research hypothesis Ha4: the people effectiveness enablers and psychological attachment variables significantly predict perceptions of business performance indicators (profit/loss, costs, and cash flow related to operating activities), and (2) research hypothesis Ha5: strong perceptions of people effectiveness enablers relate to strong individual perceptions of business performance through a high sense of psychological attachment.

The following conclusions can be drawn from the study in relation to research aim 3:

- Psychological attachment is an important construct in knowledge economy organisations and such organisations should focus on fostering an environment that is conducive to the promotion of psychological attachment.

- Organisations should focus on building mature practices related to people effectiveness enablers in order to drive higher levels of individual performance perception and subsequently actual business performance.
- The PWIS could potentially be used as a strategic decision-making instrument for organisational development strategies, focus areas and resource spend in relation to interventions.
- The PWIS could potentially be used as a scenario planning measurement tool in the organisation owing to the capabilities of the instrument in predicting individual perceptions of business performance and its relation to actual business performance.

6.1.2.4 *Research aim 4*

- To assess longitudinal links between psychological work immersion and business performance indicators (14-month time interval)

The results confirmed the test-retest reliability and validity of the PWIS in predicting perceptions of business performance within and over time. Overall, the results provided evidence in support of research hypothesis Ha6: The link between psychological work immersion and business performance increases over time with evidence of an increase in business performance.

The following conclusion can be drawn from the study in relation to research aim 4:

- Improving psychological work immersion levels will improve perceptions of business performance and actual business performance over time.
- Psychological work immersion should be measured, monitored and improved in order to improve business performance over time.
- Psychological work immersion could be used as an effective measure to monitor people effectiveness over time.

Table 6.2 below summarises the empirical research aim, the hypotheses and the main research conclusions of the study.

6.1.3 Conclusions related to the general research aim

The general aim of the research was to explore the PWIS as a predictor of business performance indicators (profit/loss, costs, and cash flow related to operating activities) over time (as measured at T1 and T2 over 14 months). The study explored this research aim using a two-pronged approach, as depicted by Figure 1.5 in Chapter 1, during a literature

phase and an empirical phase. The results of the research study were discussed from a literature perspective in Chapters 2 and 3, while the empirical research findings were discussed in Chapter 5 of the research study. As such, the general research aim as defined in Chapter 1 has been achieved.

Table 6.2.

Empirical Research Aims and Conclusions Summary

Research aim	Research hypothesis	Summary conclusion	Hypothesis accepted or rejected
Research aim 1: To empirically assess the psychometric properties of the Psychological Work Immersion Scale (PWIS) in terms of its validity as a measurement model (construct, discriminant and convergent validity) (time 1 versus time 2: within-subject analysis).	Ha1: The PWIS factor structure is a valid measure of the psychological work immersion construct across time (T1 and T2).	The revised four-factor PWIS is a valid measure of psychological work immersion.	Accepted
Research aim 2: To empirically assess the test-retest reliability of the PWIS across time (time period of 14 months).	Ha2: The PWIS has acceptable internal consistency reliability across time (T1 and T2).	The PWIS displayed acceptable internal consistency reliability.	Accepted
	Ha3: The PWIS demonstrates test-retest reliability across time.	The PWIS displayed acceptable test-retest reliability over time.	Accepted
Research aim 3: To empirically assess the predictive (criterion) validity of the PWIS in terms of perceptions of key business performance indicators (profit/loss, costs, and cash flow related to operating activities) across time (time 1 versus time 2: within-subject analysis).	Ha4: The people effectiveness enablers and psychological attachment variables significantly predict perceptions of business performance indicators (profit/loss, costs, and cash flow related to operating activities).	The people effectiveness and psychological attachment variables displayed a predictive relationship with perceptions of business performance.	Accepted
	Ha5: Strong perceptions of people effectiveness enablers relates to strong individual perceptions of business performance through a high sense of psychological attachment	Strong perceptions of people effectiveness enablers displayed a strong relationship with individual perceptions of business performance through psychological attachment.	Accepted
Research aim 4: To assess longitudinal links between psychological work immersion and business performance indicators (14-month time interval)	Ha6: The link between psychological work immersion and business performance increases over time with a significant increase in business performance.	Increases in psychological work immersion showed an increase in business performance over time.	Accepted

6.1.4 Conclusions related to the central hypothesis

The central hypothesis, as stated in Chapter 1, stated that the PWIS (Veldsman, 2013) is a valid and reliable measure for predicting perceptions of business performance within time and across time. The hypothesis also assumed that psychological work immersion (people performance/effectiveness enablers and psychological attachment), as independent variables, have a significant relationship with perception of business performance as measured by profit/loss, costs, and cash flow relating to operating indicators.

Both the literature review and the empirical study produced evidence in support of the central hypothesis.

6.1.5 Conclusions relating to the field of Industrial and Organisational Psychology

Based on the literature review and the empirical research findings, the following conclusions in relation to the field of Industrial and Organisational Psychology will be discussed below.

6.1.5.1 General conclusions related to the study

- The current field of organisational development, as a sub-field of industrial psychology, has focused largely on the for-profit domain despite the need for organisational development expertise in the not-for profit sector.
- The changing landscape of work, as applicable to an ever-changing workforce, will in the future require industrial and organisational psychologists to think more broadly about people effectiveness, focusing not only on the organisational level but also on the team and individual levels.
- People effectiveness metrics are becoming a critical success factor in informing healthy decision-making practices in organisations; thus, if the field of Industrial and Organisational Psychology is to remain relevant into the future, it has to play a role in shaping the measurement landscape and domain.

6.1.5.2 Conclusions based upon the empirical study

- The study found the PWIS to be a valid and reliable measure of psychological work immersion over time and highlighted its importance as a people effectiveness measurement tool in terms of knowledge economy practices.
- The study found that the PWIS influences perceptions of business performance which, in turn, influence actual business performance. This emphasises the need for organisational development practitioners to ensure that employee perceptions in the organisation are aligned to the psychological work immersion factors in order to sustain business performance over time.

- The study demonstrated the potential future value of using an instrument such as the PWIS as a pre-and post-measurement tool to demonstrate the impact of organisational development interventions.
- The study highlighted the importance of managing stakeholder expectations in terms of when the value of organisational development interventions will be realised, as such value will only become apparent in the longer term.

6.2 LIMITATIONS

The following limitations associated with the study were identified and are discussed below.

6.2.1 Limitations of the literature review

- Owing to the lack of agreement in the literature on to the definition of organisational effectiveness, the conceptualisation of psychological work immersion as an indicator of people effectiveness within the domain of psychological work immersion was problematic. This limitation implies that psychological work immersion as a measurement instrument requires future scrutiny and contributions from other scholars in order to ascertain the value of psychological work immersion and its use as a people effectiveness indicator over time.
- Contemporary literature on organisational effectiveness (post 2000) is rather limited, with a paucity of studies on organisational effectiveness in the not-for-profit domain. This limitation implies that the factors associated with the construct of psychological work immersion, as well as the guidelines used in terms of business performance, need to be evaluated over time across various sectors to determine their relevance.
- Only two models of effectiveness (Veldsman's Efficiency Model and Olivier's Organisational Effectiveness Model) were found to have been developed in the South African environment; this could potentially limit the study in terms of its relevance to the current environment
- The relationship between the sub-factors of psychological work immersion and business performance is implied by numerous studies, yet literature that focuses on the predictive relationship between factors associated with psychological work immersion and business performance is scant.

6.2.2 Limitations of the empirical study

- The empirical study was limited to one organisation in the not-for-profit sector and, accordingly, further study is required to ensure the generalisability of the research findings.
- The sample was skewed in terms of female and African participants, which could have influenced the research findings.
- The PWIS was developed in English and language could therefore have influenced the understanding of the questions posed to the targeted audience.
- The PWIS is a self-report instrument and, as such, potential limitations to the study exist in terms of factors such as the fact that individuals tend to overestimate themselves and are prone to exaggeration, social desirability bias in terms of respondents answering in line with what they believe society dictates and the fact that self-reporting approaches tend to be subjective by nature.
- In view of the fact that the study was limited to two measurement periods over 14 months, the longitudinal relevance of the findings should be considered.
- The study was longitudinal in nature and, as such, the disadvantages of longitudinal research were a limiting factor. Disadvantages include the participant dropout rate, the costly nature of the research and participants' familiarity with the PWIS.
- The low scores obtained in relation to the individual perceptions of performance at both T1 and T2 were considered a limitation of the study. This limitation requires further exploration in terms of the suitability of items in future studies related to measuring individual perceptions of performance.
- For the purpose of the study, only age, race, gender and tenure were focused on as influencing biographical criteria. In future studies, other factors should be included such as qualifications, geographical locations etc. in order to ascertain the influence of other biographical criteria on psychological work immersion and performance.

However, despite the limitations associated with the study discussed here, the study makes valuable recommendations for the field of Industrial and Organisational Psychology and for future avenues of research.

6.3 RECOMMENDATIONS

From the findings and conclusions emanating from the study, the following recommendations for the field of Industrial and Organisational Psychology and for future research are made.



6.3.1 Recommendations for the field of Industrial and Organisational Psychology

- Industrial and organisational psychologists play an important role in enabling people effectiveness in knowledge economy organisations. The PWIS, as a measure of people effectiveness, can be used over time to monitor and track the people effectiveness levels in the organisation and play an important role in identifying relevant organisational development interventions that will improve psychological work immersion, the individual perception of performance and actual business performance.
- Using a pre- and post-measure methodology, industrial and organisational psychologists could use the findings of the study to demonstrate the impact of organisational development interventions aligned to the PWIS .
- The study reinforces the notion that biographical variables are important in knowledge economy organisations and that they should form part of any robust organisational development strategy.
- The findings of the study highlight the importance of psychological work immersion as a people effectiveness construct in knowledge economy organisations. This finding may support industrial and organisational psychologists in articulating a business case for organisational development interventions as a method for improving business performance.
- Industrial and organisational psychologists can use the findings of the study to enter the not-for-profit domain and demonstrate the value-add of the field in a relatively unexplored arena.
- The study findings contribute to the current literature on people effectiveness within the domain of organisational effectiveness and should enable further understanding within this domain for the field of Industrial and Organisational Psychology.
- The findings related to the constructs associated with psychological work immersion may guide industrial and organisational psychologists in educating managers about robust people management practices that drive individual perceptions of performance and improve business performance over time.
- Industrial and organisational psychologists can use the approach followed in this study to design, implement and interpret predictive people effectiveness metrics that are customised to context-specific organisations. This will enable these psychologists to enter the predictive realm of people effectiveness metrics and play a strategic role in organisational decision-making.

6.3.2 Recommendations for future research

The study findings have indicated a need for the further exploration of the PWIS as a predictor of individual business perceptions and actual business performance. Future research is required into other business performance metrics that have a broader reach than the indicators associated with this study. One future research consideration would be to explore the PWIS as a pre- and post-measurement instrument aligned to specific organisational development interventions in a specific setting to evaluate the effectiveness of the instrument as an indicator of the value of organisational development interventions. The study was limited to one organisation in a specific industry and, as such, future research is required in other industries not only to ensure the generalisability of the current research findings, but also to broaden the domain of people effectiveness measures and their relationship to specific business performance measures. The study sample was predominantly represented by African and female participants and therefore further research is required that includes broader biographical representation.

From a longitudinal perspective, the study also highlighted the need for using the PWIS over a longer measurement period to allow for additional statistical methods, such as latent growth curve analysis to be applied in assessing the PWIS as a predictive measure of individual business perception and the relationship with actual business performance. In terms of research design, future research should consider a mixed methods approach in order to further evaluate non-quantitative business performance measures that could have a relationship with the PWIS.

6.4 EVALUATION OF THE STUDY

The general aim of the research was to explore the PWIS as a predictor of business performance indicators (profit/loss, costs, and cash flow related to operating activities) over time (as measured at T1 and T2 over 14 months). The findings of the study indicated that the PWIS is indeed a predictor of business performance indicators over time and as such contributes to the field of Industrial and Organisational Psychology by contributing to the current knowledge on people effectiveness measures and their value for organisational development practices.

6.4.1 Value added at a theoretical level

The study contributed to the definition of people effectiveness within the domain of organisational effectiveness. The study also contributed measurement criteria associated with people effectiveness through the use of the PWIS as a measurement instrument, as

well as highlighting the validity of the PWIS as a measure of psychological work immersion within and over time. The study contributed further understanding of the psychological work immersion construct and its associated sub-factors, as well as contributing to an understanding of the significance of psychological work immersion in terms of its relationship with business performance. The study also added value with regard to the importance and relevance of organisational development practices in knowledge economy organisations.

6.4.2 Value added at an empirical level

The study contributed at an empirical level by demonstrating the relevance of the PWIS as a measure of people effectiveness within and over time. The study also added to the current understanding on the use of people effectiveness measures as predictors of business performance and highlighted the relevance of tracking and monitoring people effectiveness over time. The study highlighted the importance of people effectiveness enablers and psychological attachment within the context of the relationship with individual perceptions of performance and actual business performance.

6.4.3 Value added at a practical level

From a practical perspective, the research adds value to human resource practitioners and industrial psychologists aiming to demonstrate the importance, relevance and impact of organisational development interventions. The study adds value in terms of process and positions the PWIS both as a people effectiveness measurement tool that can be used to show the impact of organisational development interventions and as a strategic decision-making tool in knowledge economy organisations. The research also adds value in terms of understanding the impact of people effectiveness enablers and psychological attachment over time, as key focus areas for HR in contributing to the organisational effectiveness scorecard. The research contributes insight on the way people effectiveness in organisations needs to be approached, managed and improved over time in order to improve business performance and contribute to building a sustainable and effective organisation that achieves set goals.

6.5 CHAPTER SUMMARY

The focus of this chapter was to discuss the conclusions, limitations and recommendations associated with the research study. The chapter provided conclusions related to the literature research aims, empirical research aims and the research hypotheses. The chapter provided insight into the limitations associated with this study from both a theoretical and an empirical perspective and made recommendations for future avenues of research. The

chapter concluded by assessing the value of the study in terms of the theoretical, empirical and practical value added by the research.

This chapter thus achieved research aims 5 and 6 of the study:

- **Research aim 5:** Draw conclusions and formulate recommendations for future research.
- **Research aim 6:** Critically evaluate the implications of organisational development interventions focused on people practices aimed at improving organisational effectiveness.

This concludes the research project.

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