INVESTIGATING THE IMPACT OF HIGH-PERFORMANCE WORK PRACTICES ON PROJECT SUCCESS

A thesis submitted in partial fulfilment of the requirements for the degree of

Doctor of Philosophy in Applied Psychology

By

Adekunle Tosin Olateju

University of Canterbury

2018

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Dedication

This dissertation is dedicated to Jehovah the intelligent designer that designed my life path and created opportunities that were fun, fulfilling and satisfying. No life trajectory can be better than how he planned my path to travel while I study. Also, to my wife, Funmi Olateju, who has been very supportive of my life and career goals. You both have done well.

Acknowledgements

With a heart full of thanksgiving, I would like to acknowledge the support received from the University of Canterbury for awarding me the UC doctoral scholarship including the Department of Psychology and Management for supporting my attendance at international conferences. My thanks to the 32 organisations that gave me access and approved the participation of their project team members in this research project. I owe debts of gratitude to all the 344 project team members in New Zealand and sub-Saharan African countries who devoted their valuable time to participate in the studies presented in this dissertation.

Special thanks to my primary supervisor, Dr Joana Kuntz for providing the explicit feedbacks that improved the quality of this thesis in a significant way. Thanks for giving me the autonomy and freedom to make operational decisions about this research project. Also, I am grateful for the timeliness of your feedbacks. My thanks go to Associate Professor Ven Nilakant. Your strategic guidance impacted the novelty of this research project. Furthermore, your act of generosity would impact my career as an early career academics. Appreciation to the Departmental Chair of Psychology, Professor Katharina Naswall and Dr Jennifer Wong for providing guidance on the data analytic technique adopted in this dissertation. The administrative staff are appreciated for their support.

Special recognition to my family, who provided support and prayers during the doctoral journey. Obaloluwa and Ebunoluwa, your presence in my life drives the timely completion of this research project. To my parents, thanks for the prayer. Finally, thanks to my life support,

your love, prayer and sacrifices have made a difference. I am grateful for peace I experienced throughout my doctoral journey.

Acknowledgements continued:

Various sections of the dissertation also appear in the following:

Olateju, A T., Kuntz, J., & Nilakant, V. (2018, April). *The impact of high-performance work practices (HPWPs) on project success*. Paper presented at the Society of Industrial and Organizational Psychology Conference, Chicago, USA.

Olateju, A T., Kuntz, J., & Nilakant, V. (2018). Linking High-Performance Work Practices and Project Success: Employee Engagement matters. Academy of Management Proceedings (1) 14890, retrieved from: https://submit.aom.org/2018/OnlinePapers.aspx?subid=14890

Abstract

This thesis integrated theories and framework in organisational behaviour and project management disciplines and investigated how organisations can use individualised focused but strategically linked High-Performance Work Practices (HPWPs) and external stakeholder clarity to enhance project success. The research conducted two integrated studies that explored the role of employee engagement, project autonomy and project clarity in the hypothesised direct relationship.

Study 1 (chapter III) drew on the ability, motivation, and opportunity (AMO) framework, and on social exchange theory (SET) to investigate the impact of HPWPs (training, rewards, recognition, continuous feedback and teamwork) on project success, considering efficiency and effectiveness criteria. Further, it explored the role of employee engagement in the relationship. The study relied on a three-wave questionnaire to survey 169 project team members in 33 completed project teams from 12 public and private organisations in New Zealand. Findings from multilevel structural equation modelling (MSEM) with Bayesian estimation analysis indicate that employees' favourable view of teamwork directly explains project efficiency, and is associated with project effectiveness through employee engagement. Further, project-oriented training and continuous feedback stimulate engagement feelings and behaviours, which in turn influence project effectiveness.

Study 2 (chapter IV) extended study 1 and integrated Human Capital Resource theory, Social Context theory and Shared Mental Model framework to explore the impact of HPWPs

(training, recognition, continuous feedback and teamwork) and external stakeholder clarity on project success, considering efficiency and effectiveness criteria. Further, the study explored the role of project autonomy and project clarity in the relationship. Similar to study 1, the second study depends on a three-wave questionnaire to survey 175 project team members in 63 project teams from 20 public and private organisations in New Zealand(teams=23) and nine sub-Saharan African countries.

Findings from the moderation-mediation regression in multilevel structural equation modelling (MSEM) with Bayesian estimation analysis specify those team members that hold a favourable view about the effectiveness of employee recognition tend to complete projects that met the project efficiency and effectiveness criteria. The favourable view of clarity of external stakeholders business needs was directly and indirectly associated with project efficiency via project clarity. Also, the ongoing feedback provided by the project managers explain project efficiency. The positive perception of teamwork effectiveness was associated with project effectiveness criteria.

HPWPs and external stakeholder clarity were antecedent of project clarity. Project clarity mediated the relationship of training and teamwork with project efficiency. On the contrary, the indirect relationship between teamwork and project effectiveness via project clarity was significant but in a negative direction. Project autonomy moderated the mediated relationship of HPWPs and external stakeholder clarity with project efficiency via project clarity. On the other hand, project autonomy moderates the mediated relationship of teamwork and project

effectiveness relationship via project clarity in a negative direction. Overall, the study suggests implementing project-specific HPWPs, and initiatives that enhance external stakeholder clarity offer a strategic advantage that helps achieve both tactical and strategic project outcomes.

Chapter 1

1.0 General Introduction

Rapid and often transformational changes in organisations' operating environments have prompted the increased need for new strategies to achieve corporate objectives efficiently and effectively (Ika, 2009). Reliance on project teams represents one such strategy, particularly in knowledge-intensive organisations, as this approach facilitates new product and service development, increased or new sources of revenue, and improved organisational processes (Geraldi, Maylor & Williams, 2011).

Projects are temporary organisations of human and material resources (Belout & Gauvreau, 2004). They involve diversely skilled individuals working together towards a complex goal for a determined period. Throughout a project, specialists temporarily collaborate in non-routine tasks and are constrained by time, financial resources and quality standards to achieve predefined goals (Scott-Young & Samson, 2008; Tyssen, Wald & Heidenreich, 2014). When the team's goals are achieved, the project team may be dissolved, or be assigned a new project, in which all or a segment of the team members are involved (Bakker, Boros¸ Kenis & Oerlemans, 2013; Nuhn & Wald, 2016).

Organisations invest heavily in project-based work because it helps achieve operational efficiency, innovation, flexibility, change and increased organisational success (Chiocchio, Grenier, O'Neill, Savaria, & Willms, 2012; Serrador & Pinto, 2015; Tyssen et al., 2014). Though project work is fairly common-place, many projects fail to achieve their objectives (Ika, 2009),

and the outcomes associated with failed project implementation span financial, reputation, and competitive advantage loss (Ika, 2009; Shenhar, Dvir, Levy & Maltz, 2001). Research suggests that only 20-40% of projects are deemed successful based on time, cost, and impact or quality criteria (Bolin, 2012; Kovach & Mariani, 2012). The high project failure rate and associated costs has encouraged researchers and practitioners to investigate factors that influence project success (Atkinson, 1999).

Anecdotal evidence indicates that project failure may be attributed to people management (e.g. attitudes, behaviours, and competencies) and organisational culture (Allen, Alleyne, Farmer, McRae & Turner, 2014; Atkinson, 1999; Belassi & Tukel, 1996). However, the identification of specific people management practices that help ensure project success has received little attention. The extant research suggests that High-Performance Work Practices (HPWPs) represent people management practices that may contribute to project success, and should therefore be tailored to project teams' aims and characteristics to enhance the successful implementation of projects (Yang, Chen, Wu, Huang & Cheng, 2014).

HPWPs comprise a set of integrated Human Resource Management (HRM) practices designed to enhance employee competencies, motivation and engagement (Appelbaum, Bailey, Berg, & Kalleberg, 2000), and they include recruitment and selection, performance management, training and development, rewards and recognition, flexible work arrangements, and team building. These practices are believed to elicit high performance in organisations as they support alignment between HRM practices and the overarching organisational strategy (Huselid, 1995; Wright, Coff & Moliterno, 2014).

The positive impact of HPWPs on workplace attitudes, behaviour and performance is well-established (Gallagher, Mazur & Ashkanasy, 2015). Research supports the positive contribution of HPWPs to job satisfaction and affective commitment (Macky & Boxall, 2007; Ogbonnaya & Valizade, 2016), innovative work behaviour (Fu, Flood, Bosak, Morris & O'Regan, 2015), employee engagement (Alfes, Shantz, Truss & Soane, 2013), organisational citizenship behaviour (OCB) (Sun, Aryee & Law, 2007), human capital development, and organisational performance (Latorre, Guest, Ramos & Gracia, 2016; Mihail, Mac Links, & Sarvanidis, 2013; Tregaskis, Daniels, Glover, Butler, & Meyer, 2012). Further, past studies show positive associations between HPWPs and affective commitment to change, trust in management, and change implementation success (Conway & Monks, 2008; Molineux, 2013; Neirotti & Paolucci, 2013).

Despite the well-established linkages between HPWPs and valued outcomes, these associations have been primarily investigated at the individual or organisational levels and in the manufacturing sector (Combs, Liu, Hall, & Ketchen, 2006), and scarce research has examined HPWPs in the context of project teams in knowledge-intensive organisations. Specifically, HPWPs have received little attention in the project management literature, despite some evidence of their influence on job performance in project-based organisations (Wickramasinghe & Liyanage, 2013). Moreover, little is known about the mechanisms linking specific HPWPs to organisational outcomes (Alfes et al., 2013; Posthuma, Campion, Masimova, & Campion, 2013).

Drawing on insights from the literature on HPWPs and Project Management, the present research aims to investigate the relationship between HPWPs and project success, and to explore individual and contextual factors that may explain this relationship, including leadership,

stakeholder management, and team member engagement. The aims, variables, and relationships tested in the two studies that comprise this research project are discussed below.

1.1 Aims and Variables Study 1

Study 1 investigates the mediating role of employee engagement in the relationship between HPWPs and project success. The study is conducted using project teams from knowledge-intensive organisations in New Zealand. Knowledge workers operate in professional services environments, which tend to be complex and characterised by frequent changes. High complexity and change have the potential to undermine workers' sense of competence, along with their motivation to sustain effort toward goal achievement (Wickramasinghe & Liyanage, 2013).

Prior research suggests that HPWPs signal the provision of important resources by the organisation (e.g., new skills, support, technology) that help the team get physically, emotionally, cognitively and behaviourally prepared to achieve team goals (Salanova, Agut, & Peiro, 2005). Study 1 proposes that HPWPs contribute to knowledge workers' experience of engagement (felt engagement), promote the enactment of proactive behaviours (behavioural engagement), and that both forms of engagement ensure the competency and motivation levels required to perform in a project environment (Combs et al., 2006).

In line with previous research, Study 1 argues that employee engagement might be one of the factors explaining the relationship between HPWPs and project success. In practice, HPWPs elicit positive engagement experiences (e.g., through increased meaning of work, perception of support and sense of belonging), which enable proactive, high-involvement (engaged) behaviours. In turn, engaged behaviours will contribute to project success.

1.2 Aims and Variables Study 2

Study 2 builds on the outcomes of Study 1 and explores the role of contextual factors (i.e., project autonomy and project clarity) and external stakeholders' clarity on the relationship between HPWPs and project success. With regards to the contextual factors, project autonomy reflects the project manager's degree of discretion to deal with unexpected situations and to manage the interests of multiple stakeholders. Further, project clarity represents the extent to which the project team members perceive project roles and responsibilities to be clear. Along with HPWPs, these factors are expected to contribute to successful outcomes in a project team environment. On the one hand, a project manager's degree of decision-making discretion in volatile environments allows for increased flexibility, context-responsiveness, and timely decision-making (Gemunden, Salomo & Krieger, 2005).

In practice, decision-making discretion allows project managers to adjust resourcing and guidelines in view of project goal achievement. On the other hand, project clarity has been suggested as a contextual factor of interest in project work due to its role in improving team communication, reducing conflict among stakeholders, and managing resistance to change (Maclean, Berends, Hunter, Roberts, & Mugavin, 2012). Clear and shared understanding of project-related roles and responsibilities is expected to maximise individual and coordinated team contributions, and to reduce inefficiencies and errors during project completion.

External stakeholder clarity can be defined as the extent to which project team members perceive the project reporting format, roles and requirements outlined by the project sponsor and

project end-users to be clear. Similar to project clarity, this is expected to elicit efficient and effective project outcomes.

In sum, Study 2 proposes to address an existing gap in knowledge by examining the contribution of project-specific contextual factors and effective management of external stakeholders' needs and requirements to project success. Study 2 is conducted using both New Zealand and Sub-Saharan Africa organisations to understand the cross-national impact of HPWPs on knowledge workers' capabilities to drive project success. Most of the literature on HPWPs and performance has thus far centred in manufacturing environments and Western economies. Incorporating knowledge-based organisations in a non-Western context would expand our understanding of whether and how specific HPWPs influence project success (Combs et al., 2006).

Studies 1 and 2 aim to elucidate how organisations can use strategically linked HPWPs to enhance project success in global organisations, considering the role of individual and contextual variables. This research makes four significant contributions. The first contribution is the empirical testing of the relationship between HPWPs and project success in project teams, by exploring the relative contribution of each high-performance practice (i.e., training and development, continuous feedback, rewards and recognition, and teamwork) to project success.

Second, these studies contribute to the project management literature by extending project success criteria beyond the traditional measurement of the 'Iron Triangle' (i.e., project completed on time, under budget, and according to specifications). In both studies, project success is assessed by self-report appraisals along project efficiency criteria (i.e., timeliness, no cost overrun, and achievement of scope and requirement goals) and project effectiveness criteria (i.e., end-user

satisfaction with project process and results, increase in shareholder value, and profitability and performance improvements). This contribution answers recent calls for research that integrates a broader range of success criteria, including stakeholders' views on project success (Serrador & Turner, 2015; Toor & Ogunlana, 2010).

Third, the studies presented here are among the first to investigate the role of motivational mechanisms (i.e., employee engagement) and contextual factors (i.e., project autonomy, project clarity) in project success. Concerning the motivational mechanisms, while employee engagement has been suggested as a potential explanatory variable for the relationship between HPWPs and organisational outcomes (Alfes et al., 2013), this association has yet to be empirically tested in project teams. The present research aims to add to the extant body of knowledge by elucidating the role of employee engagement in project-based environments.

With regards to contextual factors, project autonomy has been noted as an important variable contributing to project success in knowledge-intensive organisations (Gemunden et al., 2005; Lehtonen & Martinsuo, 2008; Takada, 2016). Projects involve a high level of uncertainty and ambiguity, which requires ongoing knowledge sharing. Knowledge sharing capability might be reduced and result in project failure if the project manager does not have sufficient autonomy to deal flexibly with the complexities inherent in the project environment (Hoegl & Parboteeah, 2002). This study extends the research by examining the interplay of project autonomy and HPWPs in relation to project success.

Project clarity is another contextual factor investigated as a potential contributor to project success. Successful projects require team that can clearly communicate roles, responsibilities,

resources, objectives, and relationships among project stakeholders (Hagen & Park, 2003). Project-oriented HPWPs help create opportunities to share and discuss project information, resulting in clarity about project requirements and project success (Wickramasinghe & Liyanage, 2013). Similarly, project managers' ability in managing external stakeholders' concerns, demands, and initiate timely and effective communication, are expected to help achieve clarity and successful project completion (Aaltonen, 2011; Yang, Shen, Ho, Drew & Xue, 2011).

The fourth contribution of this study centres on the extension and integration of the organisational behaviour and project management literatures, as it articulates the relationships between individual, contextual, and HRM factors that contribute to project team success in knowledge-intensive organisations. The research thus far has focused on the impact of HPWPs on individual attitudes and behaviours, within manufacturing environments, and in Western economies. The present research examines the variables of interest in the context of project teams in knowledge-intensive organisations, also incorporating teams from Sub-Saharan African organisations.

1.3 Thesis Outline and Objectives

This dissertation is structured along five chapters, starting with a general introduction (Chapter I), followed by a chapter reviewing the HPWPs literature (Chapter II). The remaining three chapters, are structured corresponding to Study 1 (Chapter III) and Study 2 (Chapter IV). The concluding chapter **(**Chapter V) offers an overall discussion of Study 1 and Study 2 findings, and highlights areas for future research and implications for project team management. The main aim of this dissertation is to extend the research and investigate how organisations can use strategically linked

HPWPs to enhance successful implementation of projects. Specifically, it investigates the relationships between HPWPs and project success, and the role of engagement, leadership, and stakeholder factors in these relationships.

Chapter 2

2.0 High-Performance Work Practices Conceptualisations and Outcomes

2.1. High-Performance Work Practices

High-performing organisations use Strategic Human Resources Management (SHRM) to create new sources of competitive advantage that support organisational effectiveness in the continually changing and competitive business landscape (Crook, Todd, Combs, Woehr, & Ketchen, 2011; Magni & Maruping, 2013). SHRM uses high-performance work systems as the integrative framework to align Human Resource (HR) practices with the corporate strategy, and improve employee and organisation performance (Zhang, Wan, & Jia, 2008b). High-performance work systems are HR systems that improve employee ability, commitment, and performance. HR systems stem from HR principles, policies, practices and competencies. The integration and synergetic effects of all the elements of an HR systems enhance employee and organisational performance (Posthuma, Campion, Masimova & Campion, 2013).

Contemporary research has acknowledged the role of High-Performance Work Practices (HPWPs) in achieving and sustaining the competitive advantage of organisations (Albrecht, Bakker, Gruman, Macey & Saks, 2015). However, there is a sharp divide in the literature about the scope and operationalisation of HPWPs, which led to different definitions of the term. SHRM research uses various designations of HPWPs, including *high involvement work practices* (Posthuma et al., 2013), *high commitment work practices* (Boxall, 2012), and *innovative work practices* (Nadeem, Raza, Kayani, Aziz & Nayab, 2018). Similarly, the extensive studies on the

concept provided mixed views regarding which HR practices can be categorised as "high-performing", including the internal and external contextual factors that influence performance outcomes (Boxall & Macky, 2009). Different schools of thought provided disparate viewpoints, some arguing that HPWPs enhance employee and business outcomes, others contending that the practices may lead to work intensification, increased stress, and adverse employee well-being outcomes (Avgoustaki, 2016).

This chapter reviews and summarises the HPWPs literature to understand the different meanings and components of HPWPs. Further, the chapter outlines the debates concerning the impact of HPWPs on employee and organisational outcomes, shedding light on employees' experiences around work involvement and intensification, and specifying how HPWPs impact team and organisational outcomes (Boxall & Macky, 2009). Finally, the chapter elucidates how the organisational context might determines the effectiveness of HPWPs.

2.1.1. Diverse Meanings of High-Performance Work Practices

The various conceptualisations of HPWPs originated from the work of scholars in the 1980s. Lawler (1986) led a school of thought that viewed HPWPs as high-involvement work practices, whereas Walton (1985) conceived HPWPs as high-commitment employment practices (Boxall & Macky, 2009). The different views of HPWPs are shaped by the theoretical frameworks that each school of thought uses to conceptualise HPWPs, which in turn explain the discrepant views regarding the relationship between HPWPs and performance.

2.1.1.1 High-Involvement Work Practices

The central idea of high-involvement work practices is that organisations should implement a bundle of practices that build employee competencies for self-management, personal development, and problem solving, so that employees can have control over work design, processes, and procedures (Boxall, 2012; Boxall & Macky, 2009; Boxall & Winterton, 2015). According to the model of high-involvement work practices, individual and organisational performance are enhanced through a bundle of practices that empower and involve the employees in the decision-making process, promote knowledge sharing, and ensure employees are recognised and rewarded for superior performance (Rana, 2015). Insights provided by this school of thought suggest practices such as the provision of decision-making discretion and autonomy, information sharing and voice, reward and recognition, and training and development, improve employee and organisational performance (Boxall, Hutchison & Wassenaar, 2015).

The job-demand control theory and the theory of sociotechnical systems (STS) support the high-involvement work practices view of HPWPs. According to the job demands-control theory, the work environment is characterised by job demands and job control or job discretion. Job demands such as changing work scope, high work pressures, and abusive supervision require unrelenting physical and psychological effort, and in most cases lead to stress. This is because the job demands cause physical, emotional, cognitive strains that negatively affect employee well-being and performance (Guest, 2017; Sulea, Virga, Maricutoiu, Schaufeli, Zaborila, Dumitru, & Sava, 2012). Job control is believed to mitigate the negative effect of job demands on individual outcomes. It involves employees' degree of control over the physical,

psychological and characteristics of a job that assist in achieving task goals and ensure employee satisfaction (Jensen, Patel & Messersmith, 2013). Hence, practices that ensure job control such as autonomy, employee involvement and voice are considered "High-performing" because they support acquisition of skills and development of strategies that help employee adapt and improve the working environment (Boxall & Winterton, 2015).

Similarly, STS posits that employee autonomy and capability to control the work environment and manage job demands foster an individual sense of accountability for job outcomes and employee wellbeing (Boxall & Winterton, 2015). Performance outcomes are enhanced when employees have greater control over job decisions, task delegation, and autonomy to manage job demands through their effect of task ownership and wellbeing (Boxall et al., 2015; Topcic, Baum & Kabst, 2016). The extant evidence consistently suggests a significant association of high-involvement work practices with job involvement, employee wellbeing, affective commitment, organisational citizenship behaviours, job satisfaction, and increased work-life balance (Huang, Ahlstrom, Lee, Chen & Hsieh, 2016; Macky & Boxall, 2008; Yang, 2012).

2.1.1.2 High-Commitment Work Practices

Walton (1985) and other scholars advocate that organisations should put in place HR systems that foster employee commitment to organisational initiatives, rather than just systems that ensure a sense of control to mitigate the negative effect of job demands (Boxall, 2012). High-commitment practices reflect the integration of mutually supportive HR practices that

support the implementation of the organisational strategy, and enhance employee commitment and performance (Bishop, 2014; Boxall, 2012; Della Torre & Solari, 2013; Fu, 2013; Neirotti & Paolucci, 2013; Shipton, Budhwar, & Crawshaw, 2012; Zhang et al., 2008b). Scholars that advocate the high-commitment HR philosophy posit that bundles of high-commitment employment practices build stronger ties and alignment between employee interests and organisational goals. Employees reciprocate managerial practices with positive attitudes, emotions and behaviours that support organisational initiatives and performance (Iverson & Zatzick, 2007; Rasool & Shah, 2015).

Empirical research on high-commitment HR practices has been based on several theories, including the Resource-Based View theory (RBV), Ability, Opportunity and Motivation theory (AMO), Social Exchange theory (SET), and Human Capital Resource theory (Iverson & Zatzick, 2007; Rasool & Shah, 2015; Wright & Ulrich, 2017). RBV theory suggests organisations achieve competitive advantage and subsequently higher performance if the resources that support the business operations are costly for competitors to acquire and imitate (Wright & Ulrich, 2017). For instance, training and development enhance the employee Human and Social Capital through knowledge acquisition and sharing in meeting specific customer requirements (Fu, 2013). Subsequently, the Human and Social Capital created as a result of implementing high-commitment work practices will be challenging to acquire and imitate if other bundles of commitment-enhancing practices are implemented to support knowledge transfer and sharing (Crook et al., 2011; Rabl, Jayasinghe, Gerhart, & Kuhlmann, 2014). Consequently, highly competent employees might engage in adaptive and extra-role behaviours that uniquely

contribute to the performance of the organisation and its competitive advantage (Iverson & Zatzick, 2007).

From an AMO perspective, HPWPs investments such as training, rewards and recognition, teamwork and performance management, enhance employees' ability (A), motivation (M) and the opportunity to perform (O) work tasks, and stimulate the utilisation of acquired competencies to support the achievement of organisational goals (Boxall & Macky, 2009). Organisations use targeted recruitment, selection, and training to enhance the knowledge and competencies of employees (Appelbaum et al., 2000). These practices are valuable in facilitating employees' ability to understand the organisation's business process and customer requirements. Further, High-Commitment Work Practices such as rewards and recognition motivate employees by highlighting the actual behaviours that help achieve task performance (Appelbaum et al., 2000). This may occur because of the communication, reflection, and adaptation elements of some of the HPWPs, which direct employee attention towards organisational objectives critical for the achievement of competitive advantage (Ployhart & Moliterno, 2011). Hence, employees exert required energies and develop positive attitudes and behaviours in response to high-commitment practices fostered in the organisation (Boxall & Macky, 2009).

Social exchange theory (SET) describes the reciprocal nature of employee and employer relationships. The premise of this theory is based reciprocity norm, which can be promoted by the implementation of high-commitment work practices (Wright & Ulrich, 2017). In this instance, high-commitment HR practices involves using a bundle of HR practices to encourage

employees to support organisational objectives and strategic direction (Iverson & Zatzick, 2007). High-commitment work practices are used to foster organisational justice perceptions by highlighting the organisation's commitment to fair employee treatment and distribution of resources, open information sharing, and honouring the psychological contract (Latorre, Guest, Ramos & Garcia, 2016).

High-commitment management scholars drew on a recently developed theory of Human Capital Resources to articulate how HR practices might be related to performance, especially at the team and organisational levels. According to the Human Capital Resources theory, team members demonstrate commitment to organisational goals by pooling together their knowledge, skills, and abilities during team task to form unit-level capacities that sustain ability and motivation needed for task performance (Ployhart, Nyberg, Reilly & Maltarich, 2014; Ployhart & Moliterno, 2011). Task performance is achieved because high-commitment practices such as teamwork sustain the sequence of workflow from one employee to another during team task performance, including team members leveraging on each other's strength during team task (Ployhart & Moliterno, 2011). Consequently, team members develop the mutual understanding of team goals and organisational performance expectations, and distribution of capabilities within the team needed for achieving organisational effectiveness (Ployhart et al., 2014).

In summary, the HPWPs literature is divided between two major HR systems' philosophies. On the one hand, the high-involvement work practices perspective contends that organisations achieve high performance by providing control and higher decision latitude to employees, which counteract the detrimental effects of job demands and managerial control

(Boxall, 2012). On the other hand, the high-commitment HR philosophy suggests that high performance can be achieved by identifying employee interests and goals, and by implementing workplace practices that align them with organisational goals to maximise engagement and performance.

2.1.2. Diverse Categorisations of High-Performance Work Practices

As suggested above, there is a lack of agreement in the literature with regards to what constitutes a high performance work practice. In order to illustrate the proliferation of theoretical perspectives, Posthuma, and colleagues (2013) conducted a 20 year review of the literature on HPWPs taxonomy in peer-reviewed articles published between 1992 and 2011. They identified 61 HPWPs grouped into nine categories. Table 1 outlines the HPWPs and overarching categories resulting from this review.

Table 1.Categories of High Performance Work Practices based on 20 years Literature Review by Posthuma and Colleagues (2013)

S/N	Categories	Practices
1	Compensation and Benefits	Pay for Performance; Formal Appraisal for Pay; External Pay Equity/Competitiveness; Incentive Compensation; Comprehensive Benefits; Profit or Gain Sharing; Group-Based Pay; Pay for Skills/Knowledge; Employee Stock Ownership; Bonuses or Cash for Performance; Equitable Pay Processes; Public Recognition/Nonfinancial Rewards
2	Job and Work Design	Decentralized Participative Decisions; Project or Other Temporary Work Teams; Job Analysis; Job Rotation/Cross Functional Utilization; Self-Managed Work Teams (Quality Circles); Greater Discretion and Autonomy; Job Enlargement and Enrichment; Broad Task Responsibilities; Flexible Work Schedule
3	Training and Development	Training Extensiveness; Use of Training to Improve Performance; Training for Job or Firm Specific Skills; Training for Career Development; Evaluation of Training; Cross-Functional or Multiskill Training; New Employee Training and Orientation
4	Recruiting and Selection	Hiring Selectivity or Low Selection Ratio; Specific and Explicit Hiring Criteria; Multiple Tools Used to Screen Applicants; Employment Tests or Structured Interviews; Planning Selection Processes and Staffing; Matching Candidates to Firm Strategy; Innovative Recruiting Practice
5	Employee Relations	Job Security/Emphasis on Permanent Jobs;Low Status Differentials; Complaint or Grievance Procedure; Measurement of Employee Relations Outcomes; Employee Opinion and Attitude Surveys; Labour Union Collaboration; Social and Family Events and Policies; Diversity and Equal Employment Opportunity

Table 1(Continued)

S/N	Categories	Practices
6	Communication	Formal Information Sharing Program;Employees Receive Market, Firm Performance, or Strategic Information; Employee; Input and Suggestion Processes; Frequent/Regular Meetings with Employees
7	Performance Management and Appraisal	Appraisals Based on Objective Results/Behaviours; Appraisals for Development/Potential; Frequent Performance Appraisal Meetings; Employees Involved in Setting Appraisal Objectives; Written Performance Plan With Defined Objectives; Multisource Feedback and Peer Appraisal; Appraisal Based on Strategic or Team Goals
8	Promotions	Promotions from Within; Promotions Objectively Based on Merit; Career Planning; Promotion Opportunities (e.g., frequency); Career Paths and Job Ladders; Succession Planning
9	Turnover, Retention, and Exit Management	

A more recent review of the literature conducted by Rasool and Shah (2015) identified ten categories of HPWPs. These categories overlapped with the ones identified by Posthuma et al. (2013), but added 'formal grievance procedures'. Further, Murphy, Torres, Ingram and Hutchinson (2017) conducted a literature review on the use of HPWPs in business, general service, and hospitality industries. The scholars found industry variation in the HPWPs adopted. For instance, employee involvement in decision-making was not considered an essential HPWP in the service industry, yet it was deemed a crucial HPWP in the business industry. Further, results from a systematic review of the literature on the effect of HPWPs in the performance of 111 sub-Saharan African hospitals (Gile, Samardzic, & De Kluendert, 2018), identified five

additional HPWPs linked to an individual, team, organisational and patient outcomes. These practices include task delegation/task shifting, scheduling and rostering, management/leadership support, mentorship, and employee engagement, all of which were associated with quality of care, patient safety, service efficiency and positive patient experience.

In sum, despite the copious amount of literature on HPWPs, there is still low agreement with regards to what constitutes a HPWP, and whether contextual factors should be considered as determining criteria. The range of perspectives and frameworks limits the ability to effectively articulate the impact of HPWPs on employee and organisational performance. According to Boxall (2012), contextual variation may negatively affect the ability to deduce accurate insights into HPWPs and performance relationship. Hence, the following section provides further detail around the contextual factors that may explain variation in the relationship between HPWPs organisational outcomes and reviews the convergence-divergence perspectives on whether HPWPs are becoming more similar or contextual issues influence the diverging of HPWPs.

2.1.3. Contextual Factors and High-Performance Work Practices

The past 30 years have witnessed an ongoing debate on whether views of HPWPs are converging or diverging, based on organisational, cultural and other contextual criteria (Al Ariss & Sidani, 2016; Foley, Ngo & Loi, 2012; Tzabbar, Tzafrir & Baruch, 2017). The convergence perspective posits that there are "best practice" and "best fit" HPWPs associated with organisational performance, irrespective of internal and external organisational factors (Clinton & Guest, 2013). According to this perspective, some HPWPs have consistently strong associations with performance independent of culture (Tzabbar et al., 2017). Further, this perspective asserts that

positive perceptions of specific HR practices are converging because of globalisation (Rasool & Shah, 2015). Globalisation facilitates the flow of technology, capital, and education from Western developed Countries to non-Western developing Countries. The flow of these resources has created homogeneity in perceived HPWPs in both Western and non-Western Countries because of convergence towards Western values of capitalism (Al Ariss & Sidani, 2016; Boxall, 2012; Rasool & Shah, 2015).

Empirical findings support the universalistic, convergence perspective of HRM (Foley et al., 2012; Gile et al., 2018; Tzabbar et al., 2017). For instance, American Multinational Corporations use standard HPWPs in in subsidiaries across the globe to maintain a cohesive strategic orientation, and appoint senior managers to ensure the standardisation of these practices. Consequently, the implementation and adoption of HRM systems that mirror the Headquarters' HRM systems are associated with subsidiary performance (Foley et al., 2012). The findings from a meta-analysis conducted by Tzabbar and colleagues (2017) based on 89 studies and 18, 335 samples also provide empirical support for the convergence perspective. Based on the syntheses of the literature, training, internal career opportunities, performance appraisal, profit sharing employment security, voice, and job descriptions consistently emerged as practices associated with organisational performance across cultures, organisations and industries, therefore providing support for the convergence perspective. Similarly, HPWPs that were associated with high performance in Western healthcare organisations were consistent with the HPWPs associated with high performance in sub-Saharan African Hospitals (Giles et al., 2018).

Conversely, the divergence perspective is based on contingency theory of HRM, which proposes that context determines the effectiveness of specific HPWPs (Clinton & Guest, 2013). The advocates of this perspective argue that both the external and internal social context of the organisation influence the effectiveness and positive perception of HPWPs (Rasool & Shah, 2015). Further, the context dictates which practices are regarded as HPWPs (Al Ariss & Sidani, 2016; Boxall, 2012). Five factors explain why there may be contextual variation in the conceptualisation of HPWPs and their effectiveness. These factors include national culture and regulatory laws, organisational culture, organisational strategy, industry characteristics, and organisational size (Al Ariss & Sidani, 2016; Boxall & Macky, 2009; Boxall, 2012; Boxall & Winterton, 2018; Tzabbar et al., 2017; Zhe & Jia 2010). First, national culture and regulatory laws refers to local customs and rules that guide the way of working in different cultures. HRM strategic intents of firms are considered legitimate if they align with local customs and traditions (Shipton, Budhwar & Crawshaw, 2012). Research suggests that variation in employment laws and local custom, including tradition, would affect what constitutes HPWPs and the effectiveness of HPWPs in different contexts (Nadeem et al., 2018). For instance, the employee grievance procedure is viewed as a HPWP in the United States. However, the practice is a legal requirement in European Union countries (Boxall, 2012).

Cultural orientation also influences the adoption and effectiveness of HPWPs in different contexts. For instance, organisations in cultures that place a premium on collective distribution of resources and collective action may implement team-based pay. In contrast, organisations in societies that favour individual distribution of resources may implement a HPWP such as pay for

performance (Posthuma et al., 2013). Further, organisations in cultures that are high in long-term orientation and future-oriented behaviours such as planning and investing in the future may favour the adoption of HR Planning and Analytics as a HPWP. On the other hand, organisations in short-term orientation cultures may favour the use of contractors and temporary employees (Nadeem et al., 2018). In a nutshell, employment laws and society cultural orientation influence the definition and adoption of HPWPs in different parts of the world.

Second, the culture of the organisation can determine the HPWPs adopted, and explain variation around which HPWPs are viewed as leading to superior performance (Ferris, Arthur, Berkson, Kaplan, Cook & Frink, 1998). Organisational culture refers to shared values, assumptions, beliefs and attitudes, which impact the behaviours enacted in the organisational context (Sok, Blomme, & Tromp, 2014). Organisations use HRM systems to communicate valuable information about its culture and values, including HRM policies that signify acceptable behaviours that guide social interactions (Ferris et al., 1998). Hence, different strategic objectives, actions plans, and reward orientations that organisations intend to communicate with the employees, would lead to contextual variation in the HPWPs adopted and their effectiveness (Sok et al., 2014). For instance, employees in China tend to reject individualistic and aggressive cultural orientations. Hence, and HPWPs such as pay-for-performance and individual-based pay that support individualistic principles are met with negative attitudes and behaviours (Nadeem et al., 2017; Zhe & Jia 2010).

The third factor supporting the divergence argument around HPWPs concerns the strategic orientation of the organisations. Research suggests that concrete strategic decisions

influence the HPWPs adopted by organisations (Posthuma et al., 2013; Rasool & Shah, 2015). Boxall and Purcell (2011) identified different HR models, including craft-professional models, outsourcing models, high-involvement models, informal models, industrial models, and salaried models. They suggest that the specific strategic orientation will direct efforts to the enactment of behaviours consistent with a given HR model, to achieve fit between HPWPs and organisational strategy (Boxall, 2018; Rasool & Shah, 2015). For instance, the HPWPs implemented by a high-tech firm with innovation as a crucial strategy may differ from a low-tech firm with labour cost minimisation as a key strategy (Boxall & Winterton, 2018; Posthuma et al., 2013). Further, strategy influences within-firm variability in HPWPs adoption. A study conducted in 100 Italian organisations suggests variation in the HPWPs adopted to manage the performance of different units within the same organisations (Della Torre & Solarib, 2013).

The fourth factor supporting the divergence hypothesis in HPWPs concerns industry characteristics (Boxall, 2012; Boxall & Winterton, 2018; Combs et al., 2006; Murphy et al., 2018; Tzabbar et al., 2017). Research suggests industry characteristics, namely the degree of technology use, the sophistication of the production machinery, level of uncertainty in the production process, the complexity of customers, and the routine nature of work, drive the choice of HPWPs adopted and the strength of the HPWPs-performance relationship (Boxall & Winterton, 2018). For instance, professional services organisations tend to rely on practices that promote employee participation and autonomy, because customer requirements call for specialised knowledge acquired from specialised education and experience. Professional services

employees need flexibility and higher discretion to meet complex task structure inherent in the professional services industry (Ployhart & Moliterno, 2011).

Conversely, in the manufacturing industry the nature of services provided is uncomplicated because of business process standardisation and documentation, therefore practices that ensure greater managerial control and compliance are favoured in the manufacturing environment (Boxall & Winterton, 2018; Combs et al., 2006). Empirical findings suggest that the relationship between HPWPs and performance is stronger in the high-tech manufacturing industry compared to the service industry. High-tech manufacturers use expensive and sophisticated machinery during production, and to achieve employee performance and operational efficiency, manufacturers rely on HPWPs to ensure employee comply with standard operating procedure and equipment manual which facilitates usability or ease of use of the machines (Combs et al., 2006; Tzabbar et al., 2017).

Organisation size is the fifth and final factor in support of the divergence argument in the context of HPWPs. Research suggests that both large and small organisations adopt HPWPs to enhance performance and competitive advantage. However, the specific practices adopted differ by organisation size (Boxall& Winterton, 2018; Della Torre & Solarib, 2013; Tzabbar et al., 2017). For instance, larger organisations tend to favour the use of trade union involvement and voice to promote employee participation and involvement. Smaller organisations tend to favour individual approach as it relates to employee involvement (Della Torre & Solari, 2013; Tzabbar et al., 2017). Further, smaller organisations offer task autonomy, profit sharing and training but cannot provide opportunities for promotion when compared to larger organisations (Boxall &

Winterton, 2018; Tzabbar et al., 2017). In addition, the association between HPWPs and performance is stronger in larger organisations when compared with smaller organisations (Della Torre & Solarib, 2013). This may be due to the fact that larger organisations have an enhanced capacity to offer the wide variety of HPWPs that promote organisational performance, compared to smaller organisations where there are fewer opportunities to implement, and capacity to invest in, HPWPs (Tzabbar et al., 2017).

In summary, the current literature review highlights the factors that influence the convergence-divergence debate around HPWPs, and their relationship with performance. Findings suggest that while the positive impact of training, internal career mobility, performance appraisal, profit sharing, employment security, voice, and job descriptions is consistent across contexts, other HPWPs adopted, and their effectiveness, may vary across organisations and cultures (Kaufman, 2016). There is a need to extend the convergence-divergence debate into team oriented HPWPs to further understand their relationship with performance in the context of temporary organisations and project teams. Throughout the next chapters, the argument and evidence will support that globalisation, technological development and international dominance of Western-oriented project management methodologies and frameworks would create convergence in the HPWPs essential to project team performance (Budhwar, Varma & Patel, 2016).

2.1.4. The Mechanisms of HPWPs and Organisational Performance Relationship

Scholars hold dissimilar views regarding the specific pathways linking HPWPs and performance. One view asserts that HPWPs lead to performance via positive channel such as job satisfaction

and the other view assumes performance improvement is achieved at the expense of employee well-being (Avgoustaki, 2016; Guest, 2017). This section reviews the debate on whether HPWPs create a positive employee experience, or if they contribute to organisational performance while having a negative influence on employee well-being through work intensification.

Proponents of High-Involvement Work Practices and High Commitment Work Practices both share the understanding that HPWPs lead to organisational performance. However, they hold differing views of the mechanisms that explain this relationship. High Involvement Work Practices scholars assert that HPWPs may lead to negative employee outcomes, and the high-commitment work practices view supports that these practices positively influence employee outcomes before impacting performance outcomes (Avgoustaki, 2016; Boxall, 2012; Budhwar, Varma & Patel, 2016; Guest, 2017; Ramsay, Scholarios & Harley, 2000).

High-Involvement work practices proponents believe that in the quest to enhance performance, managerial innovations in the form of HPWPs implementation lead to work intensification. That is, employees work longer and with greater intensity as a way of maximising their output and organisational performance. Further, HPWPs' implementation and additional responsibilities associated with increased autonomy may cause higher stress levels, burnout and job strain (Avgoustaki, 2016; Ramsay et al. 2000). The adoption of HPWPs may have further unintended consequences, namely increased competition and inequality, which are detrimental to employee well-being (Guest, 2017). For instance, in the aftermath of the introduction and success of flexible working arrangements, the boundary between work-life balance has become blurred. Employees work longer hours and more intense when they have

control over job schedule and time (Avgoustaki, 2016). Hence, contemporary managerial practices have contributed to negative employment relationships and adversely affected employee well-being (Guest, 2017).

Research suggests HPWPs intensify work effort and negative employee behaviours, including workplace bullying (Avgoustaki, 2016; Le Fevre, Boxall, Macky, 2015; Samnani & Singh, 2014). In a sense, employees working on non-routine tasks and involved in training and development activities work more extended hours leading to stress, even though organisational performance improves due to employees working overtime (Avgoustaki, 2016). Practices aimed at providing employees with voice, such as union membership contribute to work intensification. Union meeting attendance contributes to employees working longer hours due to time pressure and competing priorities (Macky & Boxall, 2009; Le Fevre et al., 2015). Although, performance enhancing compensation practices boost organisational performance, there are unintended consequences that negatively affect employee well-being (Samnani & Singh, 2014). Implementation of HRM practices such as performance pay, increases individual competition to enhance potential pay and this led to higher level of stress for employees. Organisational performance relies on employees feeling pressured to compete for rewards to increase their standing and resources within the organisation (Samnani & Singh, 2014).

High Commitment proponents believe that HPWPs improve employees' positive experience at work and this results in improved organisational performance (Ramsey et al., 2000). This viewpoint is predicated on pluralist and mutuality perspectives of the employment relationship. Models that include AMO and SET are usually used to advance the high

commitment perspective on HPWPs (Avgoustaki, 2016; Boxall & Macky, 2009; Guest, 2017). Based on AMO, HPWPs represent contextual factors and job resources that influence the development of employee competence and motivation, and drive the achievement of outcomes beneficial to both teams and organisations (Combs et al., 2006). Hence, HPWPs influence the creation of positive attitudes and behaviours that impact organisational performance (Molineux 2013). SET supports the notion that HPWPs convey that the organisation values and respects its employees, and the practices themselves indicate the organisational interest in entering long-term relationships with the employee. Thus, positive perceptions of HPWPs by the employees in the organisation influence the psychological connection an incumbent forges with the job, and increases the likelihood of enactment of workplace behaviours that benefit the organisation (Alfes et al., 2013).

Research suggests that when there are balanced mutual exchanges between employees and employers, HPWPs are linked to positive employee outcomes, including commitment to change (Conway & Monk, 2008), well-being (Guest, 2017; Macky & Boxall, 2008); fulfilled psychological contract and job security (Latorre et al., 2016); engagement (Albrecht, Bakker, Gruman, Macey & Saks, 2015); career success (Leslie et al., 2012), and innovative work behaviour (Maden, 2015), all of which positively impact organisational performance.

In summary, the present chapter provided an overview of the literature on HPWPs to elucidate the categorisations, mechanisms, and their standing regarding the convergence-divergence hypotheses. The review suggests that some practices may be converging, yet there are contextual factors that impact the adoption and effectiveness of HPWPs. The review concludes by noting that

the association between HPWPs and organisational performance may occur via positive or negative employee outcome pathways. The next chapters investigated HPWPs relevant to the project-oriented context, the positive channels of HPWPs to project success via employee engagement and project clarity including the convergence of project team oriented HPWPs in both Western and non-Western context

Chapter 3

Study 1

Linking high-performance work practices (HPWPs) and project success: The role of Employee Engagement

For a player and any human being, there is nothing better than hearing 'well done'. Those are the two best words ever invented in sports. You do not need to use superlatives

Sir Alex Ferguson
Former Manchester United Football Club Manager

3.0 Introduction

An organisation's longevity and success in today's competitive environment depend on its ability to attract, retain, and engage employees who are willing to be involved in team and organisational initiatives, and enthusiastic about helping the organisation to achieve its goals (Endres & Mancheno-Smoak, 2008; Stoneman, 2013). Further, innovative organisations increasingly rely on project teams to develop and execute strategic initiatives, aiming to achieve corporate goals and sustain competitive advantage (Wen & Qiang, 2016). Thus, project team success has become a growing research area over the last three decades (Ika, 2009).

Research suggests that many projects fail to achieve efficiency standards (e.g., timeliness, no cost overrun) and effectiveness success criteria (e.g., increase in shareholder value) (Toor & Ogunlana, 2010; Serrador & Turner, 2015). In the Information Technology industry, where success is often determined by efficiency criteria alone, the reported project success rates are as low as 30% (Handzic, Durmic, Kraljic & Kraljic, 2016). There are two distinct, yet interrelated

issues that explain the low project success rates reported in the academic literature and practitioner accounts.

First, how project success is measured tends to create false negatives by generating unrealistically high expectations of what project outcomes can be reasonably achieved, and how quickly. Moreover, the narrow range of efficiency criteria typically measured is inconsistent with the changing demands, complexity, ambiguity, and long-term results that characterise project work. Second, as little is known about the influence of people management factors (e.g., HRM practices) on project success, particularly their impact on team process variables, these factors are seldom addressed and accounted for when setting project performance targets.

In the academic literature, low project success rates have been attributed to changing project team members' attitudes during the project life cycle, competency deficiencies, low project team motivation, and the scarcity of organisational resources (Atkinson, 1999; Scott-Young & Samson, 2008; Wen & Qiang, 2016). The present research proposes to further our understanding of project success and its contributing factors by using a broader conceptualisation of project success, inclusive of project efficiency and effectiveness criteria, and by exploring the role of HRM practices and their motivational impact in the context of project teams.

The volatile environment in which project teams operate, and the frequent changes to project scope and requirements, require that organisations pay close attention to the impact of project environment on employee attitudes and behaviours (Wickramasinghe & Liyanage, 2013). Specifically, there is a need to identify the organisational practices and systems that contribute to maintaining project-oriented positive attitudes and behaviours that facilitate the achievement of

project outcomes through uncertainty and change (Ogbonnaya & Valizade, 2016; Alfes et al., 2013).

With regards to HRM practices, research has highlighted the contribution of High-Performance Work Practices (HPWPs), such as training and development, rewards and recognition, teamwork and continuous feedback, to important individual and organisational outcomes (Combs et al., 2006). These outcomes span job satisfaction and affective commitment (Macky & Boxall, 2007; Ogbonnaya & Valizade, 2016), innovative work behaviour (Fu et al., 2015), employee engagement (Alfes et al., 2013), organisational citizenship behaviour (Sun et al., 2007) and organisational performance (Latorre et al., 2016).

It is reasonable to assume that HPWPs may also make substantive contributions to project success. Drawing on the Ability, Motivation and Opportunity (AMO) framework (Appelbaum et al., 2000), and on social exchange theory (SET) (Blau, 1964), this study examines the unique contributions of a range of HPWPs to project success, and the mediating role of engagement in this relationship. According to the AMO framework, project success is achieved when project team members posssess the necessary competencies to perform, feel motivated, and have the opportunity to participate in making operational and strategic decisions (Marin-Garcia & Tomas, 2016). HPWPs such as training, rewards and recognition, teamwork and continuous feedback, are expected to contribute to team members' ability (A), motivation (M) and opportunity to perform (O), and to stimulate the utilisation of acquired competencies to support the achievement of project and organisational goals (Tregaskis et al., 2013; Sterling & Boxall, 2013).

Further, based on the SET's premise that individuals reciprocate organisational resources and support with attitudes and behaviours that benefit the organisation (Newton 2009), it is expected that the extent to which the organisation develops HPWPs will be returned with task-oriented and discretionary behaviours that ensure project success (Alfes et al., 2013; Maden, 2015; Stumpf et al., 2013).Scholars have recently suggested that employee engagement plays a role in the relationship between HPWPs and organisational outcomes such as innovation, customer satisfaction and profitability (Albrecht et al., 2015). Team members' positive perceptions of and interpretations attached to HPWPs may result in engagement with the project work and the organisation (Saks, 2006). Ideally, employees will view HPWPs as useful organisational resources that contribute to a sense of psychological meaningfulness, safety, and availability (May, Gilson, & Harter, 2004).

It is expected that team members will be more involved and committed to achieving efficient and effective deliverables when they perceive that the value of their contribution to project-related outcomes is acknowledged (i.e., meaningfulness), feel at ease to showcase their knowledge, skills, and abilities (KSAs) in the team (i.e., safety), and believe they possess the project-oriented competencies and knowledge that lead to project success (i.e., availability) (Kahn, 1990). When these forms of support are in place, team members are likely to feel engaged and reciprocate with engaged behaviours that contribute to project success, namely proactive behaviours (García-Buades et al., 2016; Guchait, 2016). Hence, state and behavioural engagement will be investigated as mediating factors linking HPWPs and project success.

This study offers three main contributions to theory and practice. First, it extends the HPWPs literature by examining the relative contribution HPWPs (i.e., training and development, continuous feedback, rewards and recognition, and teamwork) to project success in knowledge-intensive organisations. Second, this study extends the examination of project success criteria beyond the traditional efficiency criteria (timeliness, no cost overrun, and achievement of scope and requirement goals) to also include project effectiveness (end-user satisfaction, increase in shareholder value, profitability and performance improvements) criteria. Further, it integrates perceptions of project success from stakeholders who are non-members of the project team (i.e., project sponsor, end user). Third, the study is one of the first to test whether motivational mechanisms explain the association between HPWPs and project success, by examining the mediating role of state engagement and behavioural engagement on the relationship between HPWPs and project success.

3.1 Project Success

Project success is a broad and multifaceted construct that is operational, behavioural, and strategic in nature (Ika, 2009, McLeod, Dolin, & MacDonnell, 2012). Project success is achieved when temporary collaborative work between multidisciplinary teams leads to the increased operational efficiency and effectiveness of organisations (Serrador & Turner, 2015). Operational efficiency is accomplished when projects are completed within time, budget and pre-defined quality standards. Organisational effectiveness is attained when projects lead to business outcomes that enable an organisation to outperform its competitors.

Jurgev & Muller (2006) suggest that projects' strategic benefits can be achieved when there is alignment among efficiency and effectiveness deliverables. Theoretically, a project is deemed successful if it allows the organisation to meet customer needs, to achieve market success, and if it contributes to organisational learning (Scott-Young & Samson, 2008; Shenhar et al., 2001). Scholars have advocated measuring the success of projects based on criteria spanning short-term tactical efficiency deliverables (e.g., timeliness, no cost overrun) and long-term effectiveness indicators (e.g., increase in shareholder value) (Serrador & Turner, 2015; Shao et al., 2012). However, project success is typically ascertained in research and practice by criteria that comprise the "iron triangle", namely the achievement of quality standards, within a set budget and time constraints (McLeod et al., 2012).

This limited scope of criteria leaves some process and strategic success indicators unexamined, and decreases the organisation's ability to determine the factors that contribute to, or undermine, project success and team dynamics. Moreover, given the complexity, change, and ambiguity that characterises project work, projects that meet time, budget, and quality efficiency criteria established at the outset are scarce (Atkinson, 1999). Importantly, even projects that are delivered on time, within budget and according to quality standards (i.e., that meet efficiency criteria) may fail to achieve effectiveness criteria. For example, Samsung's Galaxy Note 7 turned out to be a substandard new product development project from an effectiveness standpoint, as it caused massive financial loss and decreased shareholder value.

On the other hand, projects that fail to meet efficiency criteria might be successful with respect to other criteria. The Sydney Opera House is an example of such project, in that the

outcome met stakeholders' expectations and generated satisfactory revenue that ensured profitability for the sponsoring organisation (Ika, 2009). Hence, it is important to expand project success criteria to consider both efficiency and effectiveness dimensions. This study adopts both efficiency (i.e., timeliness, no cost overrun and achievement of scope and requirement goals) and effectiveness criteria (i.e., increase in shareholder value, end-user satisfaction with the project, project team satisfaction, profitability, and performance improvements) to measure project success, and examines the relationship between HPWPs and these criteria.

3.2 HPWPs and Project Success

According to the Ability-Motivation-Opportunity (AMO) framework (Appelbaum et al., 2000), HPWPs improve the chances of successful implementation of team and organisational initiatives as they enhance team members' competency levels, motivation, and create opportunities to transfer training and participate in decision-making (Conway & Monks, 2008; Della Torre & Solari, 2013). The ability-enhancing potential of these practices is reflected in increased knowledge, skills, and attitudes of an employee at both individual and team levels (Marin-Garcia & Tomas, 2016). For example, organisations use recruitment and selection, and training practices to enhance the organisation's talent pool, and workforce knowledge and competencies (Appelbaum et al., 2000).

HPWPs enhance employees' ability to understand business process and customer requirements, discern career paths, and identify organisational culture, values, goals, and expectations of conduct (Posthuma et al., 2013). The shared positive perception of these value-enhancing practices likely influences the extent to which an employee will contribute to organisational outcomes such as project success (Appelbaum et al., 2000). The motivation-

enhancing potential of HPWPs is evident in how they reinforce employee behaviour towards the achievement of organisational objectives and performance. For instance, successful organisations use financial and non-financial rewards and incentives to align employee and organisational goals, and to acknowledge employee contributions to corporate performance (Marin-Garcia & Tomas, 2016).

Finally, the opportunity-enhancing potential of HPWPs is manifested in employees' sense of belongingness through their involvement in decision-making, knowledge sharing, opportunities for training transfer, and upward communications (Gegenfurtner, 2011; Marin-Garcia & Tomas, 2016). Meaningful jobs and decision latitude will motivate and provide employees with the opportunity to participate in activities that impact the realisation of the project and organisational objectives (Appelbaum et al., 2000). Thus, individual and organisational performance follow from the development of positive employee attitudes and behaviours, in response to the job resources provided by the organisation (Boxall & Macky, 2009).

Overall, the characteristics of a project environment, namely high stakes and changing scope and requirements, demand the implementation of practices that enhance team members' competency and motivation throughout the project. As the project scope and requirements change, the competencies may need to be updated, and motivation sustained during the changes. Therefore, practices that enhance the team members' ability, ensure motivation, and provide an opportunity to participate in decision-making will enhance the competency and motivation levels of team members, and subsequently result in project success. This is possible because HPWPs influence the development of positive perceptions at work and help create sustainable performance outcomes

(Kehoe & Wright, 2013). In addition to their direct contributions to the project with tangible resources, these practices communicate to the employees that there is a supportive organisational environment, and that management ascribes importance to their wellbeing (Tregaskis et al., 2013).

This study investigates the unique relationship between each HPWP and project success, along efficiency and effectiveness criteria. Rather than adopting an "HPWPs bundle" approach (Posthuma, 2013) which involves creating a single composite score for all HPWPs and subsequently using the score to ascertain whether a relationship exists with project success criteria, the individual approach will be adopted. Assessing the relative contribution of each practice is advantageous because it helps discern unique relationships between HPWPs and efficiency and effectiveness criteria, and the influence of engagement in these relationships.

3.2.1 Training and development.

Training and development is an HPWP aimed at developing the competencies of employees, an investment in human capital that supports organisational success (Mihail, Mac Links, & Sarvanidis, 2013). Training and development is the most widely studied HPWP, given the well-established relationship between competency development and performance (Guest, 2011; Rabl, Jayasinghe, Gerhart, & Kuhlmann, 2014). Prior empirical studies suggest that training and development enhance positive attitudes and behaviours linked to a range of valued outcomes, including acceptance and use of technology, involvement, commitment, perceived social support, organisational citizenship behaviours, and change implementation success (Jiang & Liu, 2015; Marler, Liang & Dulebohn, 2006; Popaitoon & Siengthai, 2014).

Research also indicates that, in virtue of increased knowledge and competency development, this practice facilitates employee involvement in organisational decisions and fosters commitment, which in turn promotes employee identification with the organisational culture and the development of social networks (Neirotti & Paolucci, 2013; Karatepe, 2015).

In the project management literature, training and development has been linked to project performance, due to its role in ensuring that employees acquire important knowledge, skills, and abilities (KSAs) that allow them to adapt and respond to changing project requirements and goals (Maheshwari & Vohra 2015; Tabassi & Abu Bakar, 2009; Truitt, 2011; Wickramasinghe & Liyanage, 2013).

The present study argues that the integration of formalised and project-specific KSA development into the project plan may contribute to efficiency and effectiveness project success criteria, by ensuring that team members possess and update critical knowledge and competencies specific to project work, including problem-solving and knowledge sharing. The volatile project environment means skills have a shorter life cycle (Wickramasinghe & Liyanage, 2013), requiring continuous and targeted training and development. Hence, the following is hypothesised:

Hypothesis 1a: Team members' positive perceptions of project-specific training and development will be positively and significantly related to project efficiency.

Hypothesis 1b: Team members' positive perceptions of project-specific training and development will be positively and significantly related to project effectiveness.

3.2.2 Continuous feedback.

Continuous performance feedback in a project management context refers to the information provided by the project manager about the current level of performance and the achievement of project goals (Unger-Aviram, Zwikael & Restubog, 2013; Konradt et al., 2015). The availability of continuous feedback that focuses on timely communication of individual and team deviation from planned objectives, and on the impact and contributions of team performance to organisational outcomes, has been positively associated with organisational commitment, job satisfaction, employee engagement, and performance in project teams (Unger-Aviram et al., 2013; Wickramasinghe & Liyanage, 2013) and organisations (Albrecht et al., 2015; Gruman & Saks, 2011; Sharma, Sharma, & Agarwal, 2016).

In a project context, project-specific feedback represents an important resource that helps team members adapt to project environments characterised by complex task demands, novel and non-routine tasks, and high work pressure (Unger-Aviram et al., 2013). In some instances, team members do not have prior experience with specific project requirements, and therefore need ongoing feedback on goal achievement and deviation from goals along criteria of interest. Further, continuous feedback may update knowledge made obsolete by changing project goals and requirements. This information will help project team members align their behaviours with planned project goals, and achieve successful project implementation (Konradt, et al., 2015). Hence:

Hypothesis 1c: Team members' positive perceptions of project-specific continuous feedback will be positively and significantly related to project efficiency.

Hypothesis 1d: Team members' positive perceptions of project-specific continuous feedback will be positively and significantly related to project effectiveness.

3.2.3 Rewards.

Reward systems aim to promote desired employee behaviours that support the achievement of organisational goals (Hsieh & Chen, 2011). Rewards can be classified as financial (e.g., profit-sharing, performance/contingency pay system, and team-based pay) and material rewards (e.g., shared ownership scheme, health insurance) (De Gieter, Cooman, Hofmans, Pepermans, & Jegers, 2012). Rewards have been associated with increased affective commitment, employee satisfaction, positive team outcomes, intrinsic motivation, work engagement, performance, innovation, and lower turnover intentions (Markova & Ford, 2011; Jacobs, Renard & Snelgar, 2014; Unger-Aviram et al. 2013; Yang, 2012).

Reward policies that align with the psychological needs of employees communicate to them that the organisation attends to their needs and wellbeing (Anitha, 2014; Leslie, Manchester, Park & Mehng, 2012). Further, rewards linked to specific behaviours and goal achievement signal to employees intended courses of action and what the organisation deems substantive contributions. Valued rewards increase motivation, commitment, and unleash employee energy towards the achievement of project and organisational initiatives (Mariappanadar & Kramar, 2014). In knowledge-intensive environments, knowledge resides in the individual employee rather than with the organisation. Rewards that meet the needs of team members motivate these individuals to apply or share their knowledge in ways that support successful project implementation (Markova & Ford, 2011).

Hypothesis 1e: The extent to which team members are satisfied with the rewards received from the organisation will be positively and significantly related to project efficiency.

Hypothesis 1f: The extent to which team members are satisfied with the rewards received from the organisation will be positively and significantly related to project effectiveness.

3.2.4 Recognition.

Recognition is a non-financial incentive that entails communication of gratitude and appreciation to team members for exemplary contributions or job performance (Yang, 2012). Recognition has been associated with increased employee productivity, affective commitment, team effectiveness, and lower absenteeism and turnover (Mihail et al., 2013; Unger-Aviram et al., 2013; Yang, 2012). Recognition in a project team may entail formal or informal social approval from coworkers or the project manager, in the form of public praise, and awards for effort and dedication towards the achievement of project goals (Unger-Aviram et al., 2013).

Recognition is the most effective non-monetary incentive for knowledge workers (Markova & Ford, 2011), and arguably a key driving force that propels knowledge workers to engage in positive organisational behaviours necessary to sustain project momentum (Ertürk, 2014). This practice can enhance project success in knowledge-intensive organisations because it signals desirable behaviours, including that knowledge creation and sharing (Almeida, Lesca & Canton, 2016). Thus, it is expected that recognition will result in increased understanding of valued and appropriate behaviours in a project context, including knowledge sharing, and in turn contribute to project success.

Hypothesis 1g: The extent to which team members are satisfied with the recognition received from the project manager and other team members will be positively and significantly related to project efficiency.

Hypothesis 1h: The extent to which team members are satisfied with the recognition received from the project manager and other team members will be positively and significantly related to project effectiveness.

3.2.5 Teamwork.

Teamwork has been defined as *" an adaptive, dynamic, and episodic process that encompasses the thoughts, feelings, and behaviours among team members while they interact toward a common goal"* (Salas, Shuffler, Thayer, Bedwell, & Lazzara, 2015, p. 600). Teamwork has key elements which are essential for team effectiveness and performance: communication, coordination, and synchronicity (Chiocchio et al., 2012). Team communication involves the exchange of ideas, listening, understanding, receiving and giving feedback. Team coordination is reflected in role management and on the team's capacity to anticipate and adapt to team members' needs. Team synchronicity entails timely and aligned completion of team tasks. The systematic alignment of these three elements of teamwork help achieve positive project outcomes (Chiocchio et al., 2012).

Empirical evidence indicates significant relationships between teamwork and enhanced decision-making, innovative performance, organisational effectiveness, organisational commitment, and strategic change (Agrawal & Ketil Arnulf, 2012; Allan et al., 2014; Cho & Hambrick, 2006; Fay, Shipton, West, & Patterson, 2015; Laszlo, Laszlo, & Johnsen, 2009; Salas et al., 2015; Sander, van Doorn, van der Pal, & Zijlstra, 2015). Teamwork enables organisations

to adapt and respond to changing and increasingly complex business environments (Fay et al., 2015; Laszlo et al., 2009; Rubio Andrés, Gutiérrez Broncano, & Montoya Monsalve, 2015).

Insights from the literature can be used to explain the process and contribution of teamwork to project success. Teams in knowledge-intensive industries need to exchange ideas and to create solutions through teamwork to meet requirements. Teamwork creates an opportunity for knowledge transfer between individuals within the organisation (Magni & Maruping, 2013). This transferred knowledge helps the organisation adapt to changing needs of the external environment (Fu, 2013; Mihail et al., 2013). Effective teamwork facilitates the development of social capital leveraging on relationships, shared knowledge, and improved communication among project team members (Fu, 2013).The peer-based learning during project-based teamwork is expected to enhance shared project goal clarity and team coordination, with implications for project success.

Hypothesis 1i: Team members' positive perceptions of teamwork will be positively and significantly related to project efficiency.

Hypothesis 1j: Team members' positive perceptions of teamwork will be positively and significantly related to project effectiveness.

3.3 The mediating role of employee engagement

Employee engagement is a multi-dimensional construct that comprises state engagement such as energy, enthusiasm, positive emotions, and behavioural components mainly prosocial and proactive behaviours (Macey & Schneider, 2008). Engagement has been positively linked to satisfaction with the organisation, career success, intention to stay in the organisation, organisational performance, innovation, organisational capacity to change, product quality and

operational efficiency (Stumpf et al., 2013; Belschak & Den Hartog, 2010). Importantly, scholars have noted that engagement is a motivational mechanism that explains relationships between organisational practices and outcomes (Alfes et al., 2013; Maden, 2015). However, the contributions of engagement to project success have received limited attention in research. In what follows, the proposed relationships between engagement, HPWPs and project success are discussed.

State engagement is a motivational state that represents affective satisfaction, involvement, commitment, and empowerment at work (Macey & Schneider 2008). Research suggests that, along with leadership and intrapersonal factors, job resources including training, rewards, recognition, feedback, and task complexity are antecedents of state engagement (Christian et al., 2011; Macey & Schneider, 2008). On the other hand, task performance, contextual performance, and attitudinal variables have been identified as state engagement outcomes (Albrecht et al., 2015; Christian et al. 2011; Macey & Schneider, 2008b; Saks, 2006). Because the focus of state engagement is the motivational connection with the job rather than the organisation, it represents a psychological factor that explains behaviours toward task performance (Christian et al. 2011).

Characteristics of a job or task (e.g., job design and autonomy) may stimulate the positive emotions and attitudes needed to enact behaviours that ensure task performance (Shuck, 2011). The present study suggests that project-specific HPWPs will enable project team members experience positive emotions that help forge a connection with the project task, ensuring the successful implementation of project initiatives and achievement of project goals (Chiocchio et al., 2015; Scott-Young & Samson, 2008; Sun et al., 2007; Wickramasinghe & Liyanage, 2013).

Behavioural engagement is an outcome of state engagement, manifested in discretionary efforts aimed at improving organisational performance and effectiveness (Macey & Schneider, 2008; Burke, 2008).The operationalisation of engagement as both a state and as a proactive set of behaviours is consistent with Kahn's concept of psychological presence (Kahn, 1992; Macey & Schneider, 2008). Psychological presence refers to an organisational member's emotional experience and connection to project task and other team members in the execution of project role (Kahn, 1992). In turn, the behavioural manifestation of psychological presence involves proactivity and going beyond the job description to ensure the success of the organisation (Ghitulescu, 2013).

While the relationship between HPWPs and project success has been proposed and tested (Yang et al., 2015), whether and how this relationship is influenced by motivational factors remains unexamined. Though recent studies have suggested that employee engagement is one of the "Black box of HRM", linking HPWPs and team and organisational outcomes (Alfes et al., 2013; Albrecht, Bakker, Gruman, Macey & Saks, 2015; Marin-Garcia & Tomas, 2016), this assumption requires further empirical support.

Social exchange theory (SET) offers valuable insights that explain the mediating role of employee engagement in the relationship between HPWPs and project success. According to Blau (1964), SET states that individuals establish relationships based on an analysis of costs and benefits, and respond with commensurate behaviour (Newton 2009). In a project team environment, the organisation provides HPWPs and is reciprocated with positive employee attitudes and behaviours (Alfes et al., 2013). For instance, the implementation of HPWPs signify

organisational support and resource availability (Alfes et al., 2013; Farh, Lanaj & Ilies, 2017), which are expected to generate feelings of fulfilment and satisfaction with project work (Stumpf et al., 2013).

These positive feelings drive team members to reciprocate the support and resources received from the organisation with discretionary behaviours (Maden, 2015). Hence, HPWPs maintain the motivational state that prompts the enactment of engaged behaviours and help achieve team and organisational outcomes (Wright et al., 2011). In practice, team members that hold positive views about the project work and the context in which it is developed will likely engage in proactive behaviours that contribute to project success, if they perceive the resources provided by the organisation (i.e., HPWPs) appropriately support them in the achievement of their goals (Ogbonnaya & Valizade, 2016; Alfes et al., 2013).

SET can also explain how an employee disengages from the organisation. The theory suggests that employees work in exchange for direct, concrete provisions such as pay and developmental opportunities, as well as indirect, socio-emotional rewards such as status and recognition (Banks Bachelor, Seers, O' Boyle, Pollack, Gower, 2014; O' Boyle, Forsyth, Banks & McDaniels, 2012). These exchanges create a relationship between employees and the organisation, which is strengthened when the exchange is perceived to be fair, in that both parties provide commensurate contributions (Cropanzano & Mitchell, 2005). When the exchange does not adhere to the mutually defined norm of reciprocity, employees perceive unfairness, and experience negative emotions that prompt them to withdraw discretionary behaviours as means to restore fairness (Colquitt et al., 2013). Hence, absence of developmental opportunities and

commensurate rewards during project delivery may impact the team members' engagement levels and subsequently influence project success.

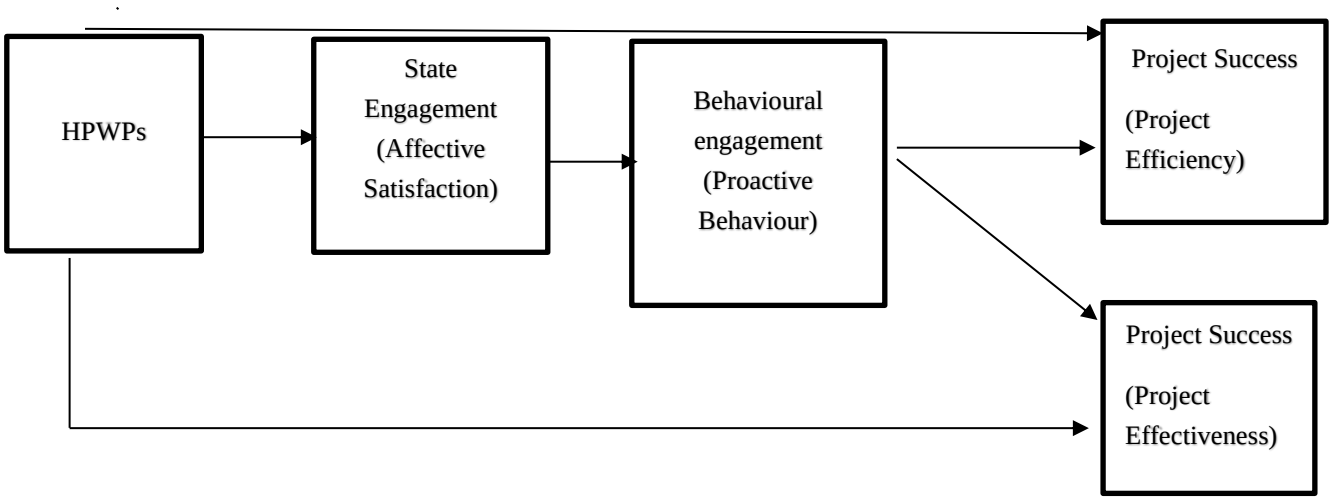
Each HPWP examined in this study comprise job resources that have been established in the literature as antecedents of employee engagement (Christian et al., 2011). For example, training and development is linked to engagement through an increase the employee's feeling of self-efficacy, the perception that one has the ability and competences needed to perform on the job (Fu, 2013). Relevant rewards and recognition facilitate the acquisition of valuable financial (performance pay, team pay, share ownership and profit sharing) and non-financial resources (praise, an employee of the month award, social support from supervisor and co-worker) to motivate the employee to unleash personal energies for project success.

Further, continuous feedback has been related to engagement and project success through perceived social support self-efficacy, and empowerment (Albrecht et al., 2015). Finally, teamwork is a cue to trust, and social cohesion and positive emotions in the workplace. These attributes influence team member motivation to share ideas and resources that enhance project success (Suan & Nasurdin, 2014). In summary, HPWPs are expected to prompt positive emotions about project work, and motivate project team members to enact proactive engagement behaviours that help ensure the project is completed efficiently and effectively.

Hypothesis 2(a-e): State engagement and behavioural engagement will mediate the relationship between a) training and development, b) rewards, c) recognition, d) continuous feedback, and e) teamwork and project efficiency

Hypothesis 3(a-e): State engagement and behavioural engagement will mediate the relationship between a) training and development, b) rewards, c) recognition, d) continuous feedback, and e) teamwork and project effectiveness

Figure 1: Proposed linkages between Project-oriented HPWPs and Project Success



3.4 Method

3.4.1 Study Design

The study adopted a three wave time-lagged design commonly used in management and organisational behaviour research for testing mediation effects (Law, Wong, Yan & Huang, 2016). This entails collecting the data on the predictor variables, the mediating variables and the outcome variables at three separate time points. This approach helps mitigate common method variance, which can occur when predictor, mediating and outcome variables are collected at the same time from a single source, potentially inflating the estimates of hypothesised relationships among the variables (Law et al., 2016; Podsakoff et al., 2012).

At Time 1 (T1), project team members invited to take part in the survey completed the questionnaire containing statements about their views on HPWPs (training and development, reward, recognition, continuous feedback, and teamwork), project role, estimated project duration, actual project duration and demographic information (See Appendix B). At T2, one month after T1, team members provided their scores on state and behavioural engagement in relation to the project. At T3, team members provided their views on project success along efficiency and effectiveness criteria.

External stakeholders (project sponsors and project end-users) associated with three of the teams in two of the organisations provided their perceptions of project success along efficiency and effectiveness criteria. Their views were sought in order explore if common source bias affected team member ratings of project success. All responses were provided in relation to

specific projects recently completed by the project team members. The name of the project being rated was stated in the survey instructions.

3.4.2 Participants

The study sampled 33 project teams (169 participants) drawn from 12 public and private organisations in New Zealand. These knowledge-intensive organisations include one organisation in the Banking industry (n=5; 15.15%) two Public sector organisations (n=4; 12.12%), one organisation from the Educational sector (n=2; 6.06%), two organisations representing the Information and Communication Technology industry (n=9; 27.27%), two organisations in the Construction industry (n=2; 6.06%), one Media and Broadcasting organisation (n=5; 15.15%), one Research and Development organisation (n=1; 3.03%) and two Transportation industry organisations (n=5; 15.15%).

At Time 1 (T1), 80% of the 210 project team members invited to take part in the survey completed the questionnaire containing statements on HPWPs, project duration and respondent's demographics data (n=169). At T2, one month after T1, 74% of team members provided their ratings on the state and behavioural engagement scale (n=156). At T3, 72 % of team members and project managers provided their views on project success (n=152). The majority of team members were male (69%). Participants had an average age of 44.2 years (SD =10.55) and 81% had obtained a university/polytechnic degree or above. The average tenure of participants in the organisation was 10 years (SD =9.53). Moreover, 87% of the respondents were permanent full-time employees. Across the 33 completed projects included in this study, the average proposed project duration was

11.5 months (SD =9.87), and the actual project duration was 19 months (SD =14.56). Finally, team size ranged from 2 to 16 members.

3.4.3 Procedure

All data were collected via an online survey. Human Resources Managers of large New Zealand organisations were contacted to inquire about their willingness to involve their organisation in the research. This contact clarified study aims and participation criteria, including the voluntary nature of the research, and guaranteed the confidentiality of individual team members' responses. Organisations signalled interest, nominated completed projects, and shared contact details of the project managers that managed the project implementation. Then, the contact requested the project managers to provide a list of project team members with email addresses.

Email panels of team members were created based on the projects named by project managers. Participants were assured of confidentiality and they were informed in T1 that clicking the participation link to the actual survey would indicate informed consent. The team members completed the surveys with the understanding that the responses provided via personalised survey links at three-time points one month apart would be matched. Reminders were sent two weeks after each survey was launched to improve response rates (De Jong, Bijlsma-Frankema & Cardinal, 2014). The study provided incentives for participation. Participants that completed all three surveys, and chose to receive an incentive, were eligible to be in a draw to win one of three $400 supermarket vouchers.

3.4.3.1 Aggregation.

Projects are implemented in teams (Scott-Young & Samson, 2008). Individual team members are nested within a team. Hence, it is appropriate to analyse multi-level data that ensures independent observation at the individual and team levels (Muthén & Muthén, 2010). In line with empirical research on teams and project teams (Massenberg, Spurk, & Kauffeld, 2015), the study assessed if all studied variables met the multilevel analysis criteria. The criteria were assessed by calculating intraclass correlation coefficients (ICC). The ICC highlights the proportion of the total variance of data that is explained by team agreement (Shieh, 2015), and provides the measure of consistency or absolute agreement among multiple observations (McGraw & Wong, 1996).

The intraclass correlation coefficients (ICC 1 & 2) were calculated to assess the level of agreement in team members' perception of the studied variables. The two-way mixed model with absolute agreement models was chosen. This model assumes that raters are fixed given project team membership and not assigned randomly. Further, the model explores if raters (project team members) have a shared perception of the studied variables. The ICC scores produced acceptable cut-offs of .10 and above for ICC1, and .70 and above for ICC2 across all variables (Shieh, 2015). Prior studies suggest aggregation decisions can be made on ICC1 score alone if they are high, and ICC2 that range between .50 and .70 are marginally acceptable (Dixon & Cunningham, 2006). The ICC1 ranged from .47 to .85 in the study. Further, ICC2 ranged between .69 and .93. The study data met the two criteria. Therefore, there was justification for conducting a multilevel data analysis, considering individuals nested in teams.

3.4.4 Measures

The questionnaires (T1, T2, and T3) for this study can be found in Appendices B, C and D. Unless otherwise noted; participants responded along 1= strongly disagree to 5=strongly agree scales. Participants provided demographic and project details, including age, gender, tenure, educational qualification, job type, project roles and responsibilities, and project duration (estimated and actual) when completing HPWPs questionnaire in Time 1(T1).

3.4.4.1 High-performance work practices (HPWPs).

Team members' perceptions of HPWPs were measured at T1. Training and development items and rewards items were adapted from the Voice Climate Survey developed by Langford (2009), a 102-item multi-dimensional scale that comprises 31 subscales. The three-item learning and development subscale has a Cronbach alpha (α) of .80. One of the item's wording was changed from "job" to "project" to reflect project-specific training and development. A sample item is "When people start in new projects here they are given enough guidance and training". The reward subscale consisted of 4 items (α=.83). A sample item is "I am happy with the benefits I receive (super, leave, etc.)".

The study used the 3 item recognition scale developed by Yang (2012) (α=.89). A sample item in the scale is "In the project team, supervisors regularly congratulate me in recognition of my efforts". The subscale of continuous feedback (4 items) was adapted from the perception of Performance Management System Scale developed by Sharma, et al. (2016) (α=.83). A sample item is "The ongoing feedback during the project performance cycle gave an accurate evaluation of how I am performing against planned performance". The 14 items of the collaborative work

questionnaire (Chiocchio et al., 2012) were used to measure teamwork (α=.91). A sample item is "My teammates and I make adjustments to meet deadlines".

3.4.4.2 Employee engagement.

At T2, one month after T1, project team members provided ratings of state and behavioural employee engagement. The 14-item engagement scale developed by Stumpf et al., (2013) (α=.85) consists of 5 items for state engagement, and 9 items for behavioural engagement. In this study, all 5 items were used to measure state engagement, along with the 5 behavioural engagement items that reflect proactive behaviours. These proactive engagement items were adopted given their relevance to change-oriented and innovation contexts (Lin, Kao, Chen & Lu, 2016) and the aims of this study. Sample items were 'I often take extra initiative to get things done' for proactive behaviour and 'My work was personally fulfilling' for state engagement.

3.4.4.3 Project success.

At T3, one month after T2, project team members provided ratings of perception of project success. The study adopted 3 items scale of project efficiency (α=.76) developed by Serrador and Turner (2015), and 4 items from the multi-stakeholders project success criteria developed by Turner and Zolin (2012) to measure project effectiveness. In sum, the study used 7 items to measure perceived project success. Sample items were "The project was successful in meeting project budget goals" for project efficiency, and "The project generates a profit and financial benefits" for project effectiveness.

3.4.5 Data Analysis

All data were analysed using SPSS version 23 for Windows and the Mplus 6.12 (Muthen & Muthen, 2011). First, exploratory factor analyses (EFA) using direct oblimin rotation were conducted on Mplus 6.12 (Muthen & Muthen, 2011) to assess the dimensionality of the study variables. The study conducted separate EFAs for the 28 HPWPs items, the 10 items of the employee engagement scale, and the 7 items that make up the efficiency and effectiveness project success criteria using the entire sample (N=169). Model fit was tested using four goodness-of-fit indices used in structural equation modelling (Cangur & Ercan, 2015), namely the root-mean-square error of approximation (RMSEA; Steiger & Lind, 1980), the comparative fit index (CFI; Bentler, 1990), the Tucker-Lewis index (TLI; Tucker & Lewis, 1973), and the standardized root-mean-square residual (SRMR; Bentler, 1995).

"*The RMSEA is a measure of the average size of the fitted residuals per degree of freedom, with values close to 0 indicating good model fit"* (Valls, Gonzalez-Roma & Tomas, 2016, pg.760). Different approaches have suggested that RMSEA of .01, .05, and .08 indicate excellent, good, and fair model fit, respectively (Kenny, Kaniskan & McCoach, 2015). The CFI is an exploratory measurement of the noncentrality parameter of the baseline model to the model of interest (Lai & Yoon, 2015). Traditionally, values above .90 are assumed as an indication of acceptable model fit (Valls et al., 2016).

The TLI is an enhancement fit index that considers the degree of freedom when measuring the fit of independence model to the target model, and it is not affected by sample size. TLI is non-normed (Cangur & Ercan, 2015). However, a cut-off value .90 and above indicates acceptable

model fit (Valls et al., 2016). SRMR is an index independent of sample size and calculates the ratio of standardised residuals of observed and the expected variance-covariance matrix (Cangur & Ercan, 2015). A value lower than .08 indicates satisfactory model fit (Hu & Bentler, 1999).

3.4.5.1 Exploratory factor analysis.

The results from the EFAs showed that training and development, rewards, recognition, and continuous feedback items loaded on distinct factors, each representing the appropriate HPWP (see Appendix H). Two items from the continuous feedback scale were removed as their loading failed to achieve the cut-off threshold of .40 (Costello & Osborne, 2005). Teamwork items loaded on 3 distinct factors, and after careful examination of item content, 8 teamwork items measuring team member information exchange, coordination and synchronicity during project delivery were retained, loading on a single factor. The final 20 items that comprised the HPWPs scales yield a five-factor model that showed the best model fit ($\chi^2_=$ 159.23, df=100, χ^2/df = 1.59; RMSEA =.06, CFI =.96, TLI = .92, SRMR =.03) compared to other factor solutions.

The EFA for employee engagement yielded a 3-factor solution. State engagement items loaded on two distinct factors with two items each. The remaining item showed cross-loadings on both factors and was eliminated. Items in the first state engagement factor reflected enthusiasm and energy about project work, and the items loading on the second factor reflected a positive emotional state of personal satisfaction and fulfilment in work done during project delivery. The second factor was adopted to align with the study's conceptual model as a variable representing state engagement. Items from the behavioural engagement scale loaded on a single factor as expected. The final 2-factor solution consisting of 2 state engagement items and the 5 behavioural

engagement items provided a better model fit (χ^2= 12.29, df=8, χ^2/df = 1.53., RMSEA=.06, CFI=.99, TLI= .98, and SRMR =.02 than the one-factor model (χ^2= 177.59, df=14, χ^2/df = 12.71., RMSEA=.29, CFI=.65, TLI= .47, and SRMR =.12).

Finally, the EFA for the project success items showed the two-factor solution, matching the efficiency and effectiveness criteria specified, had a better model fit (χ^2= 13.94, df=8, χ^2/df = 1.74., RMSEA=.07, CFI=.99, TLI= .96, and SRMR =.02) than the one-factor solution (χ^2= 148.40, df=14, χ^2/df = 10.60., RMSEA=.26, CFI=.68, TLI= .52, and SRMR =.14). This two-factor conceptualisation of project success is consistent with recent calls the consideration of efficiency and effectiveness success criteria in project management research (Serrador & Turner, 2015; Turner & Zolin, 2012).

3.4.5.2 Multilevel mediation model analysis.

Project team interactions take place in a nested environment, where individuals are clustered in teams, teams grouped in departments, and departments in organisations (González-Romá & Hernández, 2017). The study was conceived as a within-level model, and the aggregation results support the need to account for between-level effects by team. Hence, it is appropriate to test the hypothesised model using a Multilevel Structural Equation Modelling (MSEM) with Bayesian estimation (Muthen & Muthen, 2011).

The Mplus modelling syntax developed for 1-1-1 multilevel indirect effects by Preacher, Zhang and Zyphur, (2011) was adapted to test the hypothesised linkages. MSEM is the fusion of Multilevel Modelling (MLM) techniques and Structural Equation Modelling (SEM), with the capacity of handling incomplete data or missing data in time-lagged research designs (González-

Romá & Hernández, 2017; Rolfe, 2010). MSEM performs better when data is nested or clustered, and helps separate the indirect effects within and between teams (Massenberg, et al., 2015).

MSEM has advantages and disadvantages. MSEM handles two-level designs by dividing the variance of an individual predictor variable into the between and within orthogonal latent components. Measurement and sampling error can be accounted for due to the model's ability to handle the modelling of latent variables with multiple indicators. MSEM allows variation across groups at individual level random slopes and intercepts. MSEM is robust and allows testing all hypothesised direct and indirect effects within a model. This data analytic techniques help separate the impact of extraneous variables from variables of interest or impact that may be due to project team membership, organisations and industry. On the downside, MSEM works best with big data (i.e. >100 teams and a minimum of 15 participants per team).

However, the implementation of the Bayesian estimation method on Mplus has made MSEM suitable for analysing smaller samples (González-Romá & Hernández, 2017; Massenberg, et al., 2015). The 169 project members sampled in this study are clustered within 33 project teams. Hence, Bayesian estimation method was chosen because of the study's small sample size, and the number of estimated parameters (González-Romá & Hernández, 2017).

The study modelled the path of each HPWP to state engagement, from state engagement to proactive behavioural engagement, and from here to project efficiency and effectiveness at both the individual and the team levels. To test this conceptual model, a serial multilevel indirect path model using 1-1-1 multilevel indirect effects was ran (Preacher et al., 2011). All the studied

variables were measured at the individual level (Level 1), and team members in Level-1 were clustered along their respective project team (Level 2).

At the within- and between-levels path, the first slope was created by regressing mediator 1 (m1) (state engagement) on the predictor variables (training, reward, recognition, feedback and teamwork). Regressing mediator 2 (m2) (behavioural engagement) on m1 created the second slope 2. Further, the third and fourth slopes were created by regressing the outcome variables (project efficiency and effectiveness) on m2. The study used model constraint function and syntax to compute indirect effect at the within- and between-levels. The within- and between-level chains of path coefficients created from the regression estimate of the regression path in the research model were used to compute indirect effects. The indirect effect of each predictor on the outcome variables was computed by multiplying each regression path coefficient generated simultaneously using Bayesian estimation model.

3.5 Results

3.5.1 Descriptive Statistics and Intercorrelations

Table 2 summarises the means, standard deviations, reliabilities, and correlation coefficients for the study variables. All scale reliabilities ranged between .70 and .92 indicating acceptable to excellent reliability (Churchill & Peter, 1984; Dixon & Cunningham, 2006; Nunnally, 1988). As evidenced in Table 2, project-oriented training and development and teamwork were positively and significantly related to state engagement. Although, training was not significantly related to behavioural engagement, teamwork was significantly and positively related to behavioural engagement and project efficiency. State engagement was positively and significantly related to proactive engagement and to project effectiveness. Behavioural engagement was significantly and positively related to project effectiveness, but not with project efficiency. Project efficiency and effectiveness were positively and significantly related to each other.

Table 2: Means, Standard Deviations, Correlations and Cronbach Alphas

Variable	M	SD	1	2	3	4	5	6	7	8	9
Project Efficiency	3.78	1.02	*.81*								
Project Effectiveness	4.12	.70	.36**	*.85*							
Training	3.40	.74	.17	.16	*.74*						
Reward	3.62	.72	.02	.06	.43**	*.84*					
Recognition	3.65	.73	.16	.00	.44**	.43**	*.82*				
Continuous feedback	3.21	.89	.11	.09	.40**	.33**	.45**	*.70*			
Teamwork	4.00	.59	.23*	.15	.39**	.23**	.31**	.34**	*.90*		
Proactive Behaviour	4.12	.54	.06	.21*	.04	-.08	-.09	-.00	.21*	*.85*	
State Engagement	4.02	.77	.10	.20*	.25**	.05	.06	.17	.30**	.23**	*.92*

N=169 Note: *p. <.05; ** p. <.01

The study compared the means of three project teams' perceptions of project efficiency and effectiveness with the external stakeholders' views on the same projects to ascertain whether common source bias affected the team member ratings. The results show no significant mean differences in project efficiency scores between the project team and external project stakeholders in all the three teams from two organisations. Similarly, there were no significant differences in rating of project effectiveness provided by the project team and the project external stakeholders in the subset sample.

For instance, in an Information Technology Company, the result suggest there was no significant differences in the scores of project efficiency provided by the project team (M=4.40, SD=.68) and project external stakeholders (M=4.50, SD=.43); t (11) =-.25, p=.810. Similarly, there were no significant differences in rating of project effectiveness provided by the project team (M=4.67, SD=.25) and project external stakeholders (M=3.93, SD=1.00); t (11) =2.14, p=.056. Thus, one can be relatively confident that the project ratings provided by team members correspond to stakeholders' appraisals of the project. Nevertheless, the fact that stakeholder data was only available from a subset of the projects urges caution in the interpretation of findings.

3.5.2 Direct effects of HPWPs on project efficiency and project effectiveness

As seen in Table 3, the extent to which team members are satisfied with teamwork quality during project delivery significantly explained project efficiency in the 12 New Zealand organisations and 33 project teams sampled. Considering the 90% Bayesian credibility interval (Muthen & Muthen, 2010; Kuncel, Hezlett & Ones, 2001), there was significant and positive direct effect of teamwork on project efficiency, supporting hypothesis 1i [(.25, CI= (.03, .47)]. The remaining HPWPs (i.e.,

training, rewards, recognition, and continuous feedback) were not significantly associated with project efficiency.

Hence, hypotheses 1 a, c, e and g were not supported. Also, none of the HPWPs showed significant direct effects on project effectiveness. Hence, positive perceptions regarding training, rewards, continuous feedback, recognition, and teamwork did not explain project effectiveness. In summary, hypotheses 1 b, d, f, h, and j regarding the direct effect of HPWPs on project effectiveness were not supported.

3.5.3 Indirect effects through state and behavioural engagement

As seen in Table 3, the paths from HPWPs to project efficiency through state engagement and behavioural engagement were not statistically significant. This is because the path of behavioural engagement and project efficiency were not statistically significant across the HPWPs models. In summary, HPWPs did not indirectly explain project efficiency through state engagement or behavioural engagement, failing to support hypotheses 2a-e. On the other hand, the results of the serial multilevel mediation model path analysis suggest that training, continuous feedback, and teamwork an indirect effect on project effectiveness through state engagement and behavioural engagement.

As can be seen in Table 3, the path of the perceived effectiveness of project-oriented training and development provided by the organisation influenced the team members' state engagement [(.28, CI= (.14, .42)]. Further, team members that felt engaged enacted engaged behaviours [(.24, CI= (.14, .35)]. In turn, behavioural engagement explained project effectiveness [(.28, CI= (.08, .48)]. The overall indirect effect model of training on project effectiveness [(.02,

CI= (.00, .04)] through state and behavioural engagement was statistically significant, supporting hypothesis 3a.

Continuous feedback received from project manager during a project cycle was significantly associated with team member state engagement [(.13, CI= (.01, .25)], and state engagement was significantly associated with the enactment of behavioural engagement [(.24, CI= (.14, .35)]. In turn, team members that engaged in proactive behaviours helped the organisation to deliver projects that were effective [(.30, CI= (.10, .50)]. Overall, the indirect effect model of project-oriented feedback [(.01, CI= (.00, .02)] on project effectiveness through state and behavioural engagement was statistically significant, supporting hypothesis 3d.

Teamwork was also significantly associated with state engagement [(.37, CI= (.20, .55)], and team members that experienced state engagement enacted proactive behaviours during project delivery [(.25, CI= (.14, .36)]. Proactive behaviours significantly predicted project effectiveness [(.27, CI= (.06, .47)]. Overall, the indirect effect model of teamwork on project effectiveness [(.02, CI= (.00, .06)] through state and behavioural engagement was statistically significant, supporting hypothesis 3e.

The paths between rewards [(.09, CI= (-.07, .24)] and recognition [(.09, CI= (-.06, .24)] with state engagement were not statistically significant. Hence, satisfaction with reward and recognition did not directly or indirectly explain project effectiveness, failing to support hypothesis 3b and 3c.

Table 3: Tests of direct and indirect relationships in the 1-1-1 Multilevel Mediation Model

Path	β	Posterior S.D	CI
Direct relationships Individual Level (Level 1)			
Training → State engagement	.28**	.09	(.14,.42)
Reward → State engagement	.09	.09	(-.07,.24)
Recognition → State engagement	.09	.09	(-.06,.24)
Feedback → State engagement	.13*	.07	(.01,.25)
Teamwork → State engagement	.37**	.11	(.20,.55)
State engagement → Proactive Behaviour	.25**	.06	(.14,.36)
Proactive Behaviour → Project Efficiency	-.10	.15	(-.35,.15)
Proactive Behaviour → Project Effectiveness	.27*	.12	(.06,.47)
Training → Project Efficiency	.13	.11	(-.31,.19)
Training → Project Effectiveness	.12	.06	(-.03,.26)
Reward → Project Efficiency	-.11	.11	(-.30,.08)
Reward → Project Effectiveness	.06	.09	(-.09,.21)
Recognition → Project Efficiency	.07	.11	(-.11,.24)
Recognition → Project Effectiveness	-.02	.09	(-.16,.12)
Feedback → Project Efficiency	.06	.09	(-.09,.21)
Feedback → Project Effectiveness	.06	.07	(-.07,.18)
Teamwork → Project Efficiency	.25*	.13	(.03,.46)
Teamwork → Project Effectiveness	.10	.11	(-.07,.27)
Indirect relationships Individual Level (Level 1)			
Training → State Engagement→Proactive→Efficiency	.00	.01	(-.02,.01)
Training → State Engagement→Proactive→Effectiveness	.01*	.01	(.00,.04)
Reward→ State Engagement→Proactive→Efficiency	.01	.01	(-.01,.00)
Reward → State Engagement→Proactive→Effectiveness	.01	.01	(-.00,.02)
Recognition→ State Engagement→Proactive→Efficiency	.00	.01	(-.01,.00)
Recognition → State Engagement→Proactive→Effectiveness	.01	.01	(-.00,.02)
Feedback → State Engagement→Proactive→Efficiency	.00	.01	(-.01,.01)
Feedback→ State Engagement→Proactive→Effectiveness	.01*	.01	(.00,.02)
Teamwork → State Engagement→Proactive→Efficiency	.00	.01	(-.04,.01)
Teamwork → State Engagement→Proactive→Effectiveness	.02*	.01	(.00,.06)

3.6 Discussion

HPWPs have been linked to valued organisational outcomes, including job satisfaction, affective commitment, innovative work behaviour and organisational performance (Alfes et al., 2013; Ogbonnaya & Valizade, 2016; Wright et al., 2014). Yet, studies that have examined the contribution of HPWPs to temporary organisations such as project teams are scarce. As reliance on projects and project teams to achieve competitive advantage in organisations is on the rise (Chiocchio & Hobbs, 2014), broadening our understanding around the contribution of HPWPs to project-oriented outcomes, and the mechanisms underpinning this relationship, were in order.

This study was also motivated by prior research that suggested employee engagement as one of the "Black boxes of HRM", linking HPWPs, team, and organisational outcomes (Alfes et al., 2013; Albrecht et al., 2015; Marin-Garcia & Tomas, 2016). The study used the conceptualisation of engagement advanced by Macey and Schneider (2008), comprising felt or motivational state engagement and behavioural engagement. The study model suggested that HPWPs would contribute to project efficiency and effectiveness through their effect on state engagement and behavioural engagement.

The results obtained indicate that, of the HPWPs examined, only teamwork directly explained project success outcomes, namely project efficiency (i.e., completion on time, avoid cost overrun, achieve scope and requirement goals). In line with prior research (Chiocchio et al., 2012), the extent to which project team members experienced good quality communication, coordination, and synchronicity with colleagues during project delivery, facilitated by the organisation, influenced their ability to complete projects on time, within budget and in accordance to scope. The lack of a direct relationship between most of the HPWPs and project

success criteria is not unexpected in the project-oriented context. Previous studies suggest HRM practices have limited direct relationships with project success because project managers rarely implement HPWPs (Belout & Gauvreau, 2004; Ebtehaj & Afshari, 2006; Pinto & Slevin, 1988; Zwikael & Unger-Aviram, 2010).

With regards to the indirect effects examined, the findings suggest that training, continuous feedback, and teamwork indirectly influence project effectiveness through state engagement and behavioural engagement. The provision of project-oriented training influenced team members' positive emotional experience of the project and sense of fulfilment. In turn, this affective state was reflected on behavioural engagement, whereby team members sought out opportunities to contribute to project goals and put in discretionary effort to ensure completion of high-quality projects (Yang et al., 2011). These engagement behaviours were associated with project effectiveness criteria. Thus, in line with previous research, HPWPs that increase self-efficacy beliefs, and render work meaningful and enjoyable, drive team members to invest personal energy and enact proactive behaviours that contribute to the team and organisational success (Kahn, 1992; May et al., 2004).

This causality chain was also found in relation to continuous feedback and teamwork. Regarding the latter, effective task communication, coordination, and synchronicity among project team members (i.e., teamwork) were associated with a positive emotional experience of satisfaction and fulfilment during project delivery, and this experience, in turn, was associated with the enactment of engaged behaviours that contributed to the achievement of project goals.

Two primary reasons may explain why HPWPs indirectly impact project effectiveness and not project efficiency. First, the nature of the pathways that connect HPWPs to project effectiveness. Second, the effect of time in the conceptualisation of project effectiveness as

regards longer-term impact which means the results of HPWPs are not immediately visible. Compared to shorter-term project efficiency which focuses on the immediate impact of HPWPs after project completion.

Concerning the first reason, research suggests that HPWPs impact performance via cognitive and motivational pathways (Boxall et al., 2015; Morrison, Cordery, Girardi & Payne, 2005). The idea behind the 'cognitive channel' such as skills utilisation, goal clarity, and collective efficacy, is based on the view that HPWPs empower employees to put into use the competencies they already possess (Boxall et al., 2015; Ma, Long, Zhang, Zhang & Lam, 2017). On the other hand, the 'motivation channel', which includes factors such as knowledge sharing, intrinsic motivation, team communication, and employee engagement, explains how HPWPs trigger employees' willingness to exert required energies needed on the job to complete quality outputs that lead to organisational effectiveness (Boxall et al., 2015; Flinchbaugh, Li, Luth, Chadwick, 2016; Ma et al., 2017).

Research suggests employee engagement is one of the motivational mechanisms that explain why and how HPWPs are reflected on organisational effectiveness and competitive advantage (Albrecht et al., 2015; Maden, 2015). The findings from the present study corroborate prior research results. In this sense, HPWPs, namely training, continuous feedback and teamwork, provided job resources that influenced the development of positive emotions during project delivery, and motivated team members to behave in a proactive and prosocial manner in the execution of project tasks (Macey & Schneider, 2008; Maheshwari & Vohra, 2015; Meyer, 2013). Team member behaviours resulted in the completion of high-quality project outputs that ensured project financial performance and profitability. In a nutshell, project effectiveness shares a similar conceptualisation with corporate financial performance and organisational effectiveness, both of

which have been associated with HPWPs through a motivational pathway such as employee engagement. Conversely, project efficiency was conceptualised as an operational construct reflecting immediate performance criteria, which research suggests connect with HPWPs via a cognitive pathway (Boxall et al., 2015).

To a greater extent, the second reason that could account for HPWPs indirectly impacting project effectiveness and not project efficiency relates to conceptualisation of project efficiency and project effectiveness concerning time and immediate or deferred visibility of the positive effect of HPWPs. Research suggests that the benefits of HPWPs implementation become visible both in the project team and the organisation after two years (Tregaskis et al., 2012; Zwikael & Unger-Aviram, 2010). Further, insights from research conducted by Zwikael and Unger-Aviram (2010) suggest that HPWPs have a weaker or non-significant association with project outcomes for projects with a proposed duration that is less than 12 months. The average propose duration of projects in this study was 11.5 month and average actual completion duration of projects was 19 month. Hence, projects included in this study failed to meet the project efficiency criteria. It is not surprising that practices that promote formal and informal learning such as training, continuous feedback and teamwork were associated with employee engagements and project effectiveness which impact takes a longer time to manifest and appropriate to measure months after project completion.

Overall, practices that promote formal and informal learning by guiding and supporting knowledge sharing positively influenced project effectiveness outcomes, through their impact on engagement. Though the effect sizes were modest, the findings are consistent with previous studies that have suggested HPWPs in organisations elicit positive emotions and organisational

behaviours that help achieve sustainable competitive advantage (Elorza, Harris, Aritzeta & Balluerka, 2016; Maden, 2015; Kehoe & Wright, 2013; Tregaskis et al., 2013).

3.6.1 Implications for Theory and Practice

The current study contributes with insights to project management through the increased understanding of human resources practices in project work, an area of research that remains underdeveloped (Chiocchio & Hobbs, 2014; Suhonen & Paasivaara, 2010). The study has integrated the AMO model with a social exchange perspective to explore and explain the contribution of HPWPs to project success via team member engagement. First, this study generated findings consistent with the core tenets of social exchange theory, showing that employees reciprocate organisational resources and employee-oriented practices with positive workplace behaviours (Albrecht, Breidahl & Marty, 2018). The results are also consistent with prior research suggesting the contribution of HPWPs to project success (Yang et al., 2015).

Insights from this study may be useful to project managers in shaping the project team management strategy. The study found that project success can be enhanced when individual-level interventions, such as training that enhances team member communication and coordination (teamwork skills), are integrated into the project plan. Further, developing and implementing training that enhances a project manager's ability to communicate performance expectations, along with the provision of specific and continuous feedback during project delivery, may be beneficial to the team and the organisation.

Second, the study also highlights the utility of HPWPs in achieving project success through their role on critical motivational mechanisms, corroborating prior research suggesting employee engagement as the mechanism connecting HPWPs and project outcomes (Albrecht et

al., 2015; Alfes et al., 2013; Fu, Flood, Bosak, Morris, & O'Regan, 2015; Maden, 2015). Training, continuous feedback, and teamwork facilitate team members emotional satisfaction and fulfilment with project work and in turn, the emotional connection with project work prompt team members to enact engaged behaviours that guaranteed the completion of high-quality projects (i.e. achievement of project effectiveness criteria). Though the study is not the first to establish linkages between HPWPs and project success, it is one of the first to explore and explain the intrapersonal mechanisms that link the two constructs.

Surprisingly, the findings indicate that rewards and recognition did not directly or indirectly explain neither project efficiency nor project effectiveness. The results run counter to prior research suggesting that recognition of knowledge workers' input and performance is a highly valued non-monetary incentive, and contributes to project team effectiveness (Unger-Aviram et al., 2013). The characteristics of project teams may partly explain these findings. In practice, project work is constraint by time. This may impact the ability of the project manager and colleagues to use recognition practice as often as expected in a project context.

Further, the prerogative to use financial incentives to motivate for performance lies with the organisation, rather than with the project manager. This may limit the discretionary use of rewards as motivation-enhancing practices in project teams (Zwikael &Unger-Aviram, 2010). In summary, limited use of rewards and recognition for project team motivation in the study sample may have affected the impact of these practices on project team engagement and outcomes (Bakker, Boros¸ Kenis & Oerlemans, 2013; Wright, Dunford & Snell, 2001; Tregaskis et al., 2013). Alternatively, the implementation of reward schemes may increase project costs in the short run, rendering the investment in this practice not worth consideration for a project with a proposed completion time of less than a year (Zwikael &Unger-Aviram, 2010).

Third, this study expands the project management literature and provides empirical support for strategic project management by going beyond the traditional measurement of the ‘'Iron Triangle" (i.e., efficiency criteria, namely project completed on time, under budget, and according to specifications), and assessing the relationship between HPWPs and the strategic benefits of projects to the organisation (i.e., effectiveness criteria). Projects are implemented to meet organisational goals, bring needed change and performance improvement, and enhance external competitiveness (Williams, 2016). However, most prior research failed to evaluate the contributions of projects to the long-term financial viability of the organisation. The current study supports the operationalisation of project success based on a broad range of efficiency criteria (time, cost, and scope/requirement) and effectiveness criteria (end-user satisfaction, increase in shareholder value, profitability and performance improvement), showing that HPWPs are uniquely associated with efficiency and effectiveness criteria.

From an implementation standpoint, organisations stand to gain when a systematic and formalised project-oriented learning and development system is institutionalised. For example, the organisation may set up a project monitoring, evaluations and learning team within the Human Resources Department, extracting key learning points from each project and using them as a guide to advise on the set up of subsequent projects. Further, the development of a project competency inventory that identifies the essential technical skills a project requires and contrasts them with what is available during project delivery would increase capacity for project success. When project skill gaps are identified, the information can be used to develop tailored training that develops team members’ KSAs to what the project requires.

3.6.2 Limitations and Future Research

This study focused on the relationships between five HPWPs, state and behavioural employee engagement, and project success (Markova & Ford, 2011; Unger-Aviram et al., 2013 & Yang, 2012). The findings show that employee engagement did not have a significant role to play in the relationship between HPWPs and project efficiency. Further, while the indirect effects of several HPWPs (training, continuous feedback and teamwork) on project effectiveness through employee engagement were statistically significant, the effect sizes were small. The small effect sizes may be partly due to the small sample size (O'Boyle, Banks, Carter, Walter & Yuan, 2018), indicating that future research should attempt to test these associations using larger samples.

In addition, future research should examine the contribution of individual factors, additional HPWPs, and team management factors not examined in this study that may influence project success. Specifically, how individual differences, or aspects pertaining to project management, affect perceptions of HPWPs and project success might be a fruitful future research avenue. Overall, the findings from this study invite the investigation of additional HPWPs and contextual factors that may contribute to project success, including project team member selection practices, technology use, flexible work arrangements, team dynamics, project requirements, and external stakeholders (Albrecht et al., 2015; Posthuma et al., 2013).

The current study relied primarily on project team members' perceptions of project success. Although this study also incorporated perceived project success ratings provided by external stakeholders in three of the teams, and there was an agreement between team member ratings and the external stakeholders', future research should gather data about project outcomes from multiple sources across the teams surveyed, and include objective data on project success.

Current study followed the precedent of reporting Cronbach alpha because the validated scales used in this study all reported Cronbach alpha coefficient estimates. However, based on the criticism of Cronbach alpha coefficient and its limitation as understating true reliabilities, current study agrees with prior research suggesting McDonald's omega coefficient is the most accurate estimator of reliability (Cho & Kim, 2015; Simsek & Noyan, 2013).

Finally, both national and organisational cultures might influence the relationship between HPWPs and project success. This study was conducted in New Zealand, an individualistic culture with low power distance, and this might have determined the availability and implementation approach to the HPWPs (Hofstede, 2011). The difference in cultural values and managerial styles in western and non-western economies may influence how the project team perceive the use of HPWPs to enhance project success (Budhwar, Tung, Varma, & Do, 2017). For instance, research suggests that team members in a low power distance context would seek evaluative feedback to individually focus performance goals, while the high-power distance team members prefer evaluative feedbacks that focus on collective performance goals. Different cultural orientations as they relate to performance feedback seeking behaviours may affect the interpretation project team members from different cultural orientation attach to feedback received (MacDonald, Sulsky, Spence & Brown, 2013). Further research is needed in countries with different cultural value profiles to broaden our understanding of the influence of national culture on HPWPs and project success.

Concerning the organisational culture, there is the likelihood that project team members are unable to extricate their attitudes toward project-oriented HPWPs from their experience of the practices and overall climate in their respective organisations. Research suggests organisational culture influences climate perceptions and impacts the behaviours employees enact at the unit

level (Ferris et al., 1998). Cultural values are manifested in HRM practices, and, in strong organisational cultures, the values implicitly conveyed through organisational HPWPs may influence perceptions of team-oriented HPWPs and their effectiveness (Ployhart et al., 2014). Because this study is a retrospective study, further research is needed that accounts for the influence of organisational culture and HPWPs on the development, implementation, and perceptions of team-level HPWPs, to increase our understanding of their effectiveness in temporary organisations.

3.6.3 Conclusion

Projects success is an essential outcome for the longevity of contemporary organisations, ensuring they survive competitive, continually changing, and turbulent environments. The examination of intrapersonal mechanisms linking HPWPs to Project Success conducted in this study elucidated the contribution of Strategic Human Resource Management to motivation in project team settings, and to project success. The results suggest that teamwork explained project efficiency and directly and, effectiveness indirectly through state and behavioural engagement. Further, employee engagement mediated the relationship between training and continuous feedback practices with project effectiveness. Therefore, current study builds empirical evidence for specific practices that elicit engaged behaviours from the project teams for sustained competitive advantage.

Chapter 4

Study 2

Beyond the Western Context: The role of High-Performance Work Practices, Project Autonomy and Project Clarity on Project Success

4.0 Introduction

Project work is an implementation tool organisations rely on to ensure their competitive advantage and longevity (Sharma & Chanda, 2017; Stelson, Hille, Eseonu & Doolen, 2017). Consequently, research on organisational and managerial practices that help project teams enhance project success rates has been on the rise (Albert, Balve & Spang, 2017; Tabassi, Roufechaei, Bakar & Yussof, 2017). Project success is attained when project work is completed efficiently and effectively. That is, project work is completed on time, budget, scope, and leads to the achievement of strategic objectives (Serrador & Turner, 2015). Both the academic research and corporate reports suggest a relatively low project success rate of around 30%, and ascribe these figures to project scope changes, poor communication, unrealistic deadlines, unclear objectives, and insufficient team skills (Barlow, 2017; Brame & Barlow, 2010; Damoah & Akwei, 2017).

There are two main reasons why further research into the factors that influence project success is in order: 1) inconsistent research findings signal that project success may be influenced by intrapersonal and contextual factors previously unaccounted for, and 2) project success has been examined majorly in the construction contexts, and to a lesser extent in knowledge-intensive and service oriented organisations. Regarding the first, previous studies conducted to understand the organisational and managerial practices that enhance project team capabilities have yielded inconsistent results (Belout & Gauvreau, 2004; Unger-Aviram, Zwikael & Restubog, 2013). This

inconsistency is patent in the findings outlined in Chapter 2 (Study 1). For instance, contrary to Unger-Aviram et al.'s (2013) findings showing significant associations between employee recognition, feedback, and project team effectiveness, no significant relationships were obtained in Study 1 with regards to recognition, and feedback was only indirectly associated with project effectiveness via motivational channels (i.e., state and behavioural engagement). The latter suggests that the inconsistent research findings in the extant literature may be attributed to influencing factors untapped in previous studies. In addition to motivational factors, the context in which projects are developed has been alluded to as an important aspect to consider in the relationship between HPWPs, project success, and organisational performance (Ferris, Arthur, Berkson, Kaplan, Cook & Frink, 1998; Geraldi, Maylor & Williams, 2011) and might constitute another element in the "Black box of HRM", linking HPWPs to these outcomes (Wright & Ulrich, 2017).

Though scarce, the research suggests that project work features such as clarity of rules and procedures, and stakeholder management, may contribute to project team effectiveness (Chan & Oppong, 2017; Cohen, 1997). External stakeholders' clarity, defined as clarity of needs and expectations of project sponsor and end-users, is a contextual factor expected to impact project success. This assumption is based on prior research suggesting that effective relationship management with external stakeholders contributes to project success, as it increases stakeholders' degree of identification and involvement with project activities, stimulating support for project objectives (Handfield, Primo & Oliveira, 2015; Julian, 2016). Further, project clarity may play a role in the HPWPs and project success relationship, because it helps create a shared understanding of the steps to achieve project performance (Beauchamp, Bray, Eys & Carron, 2002; Patanakul, Pinto & Pinto, 2016).

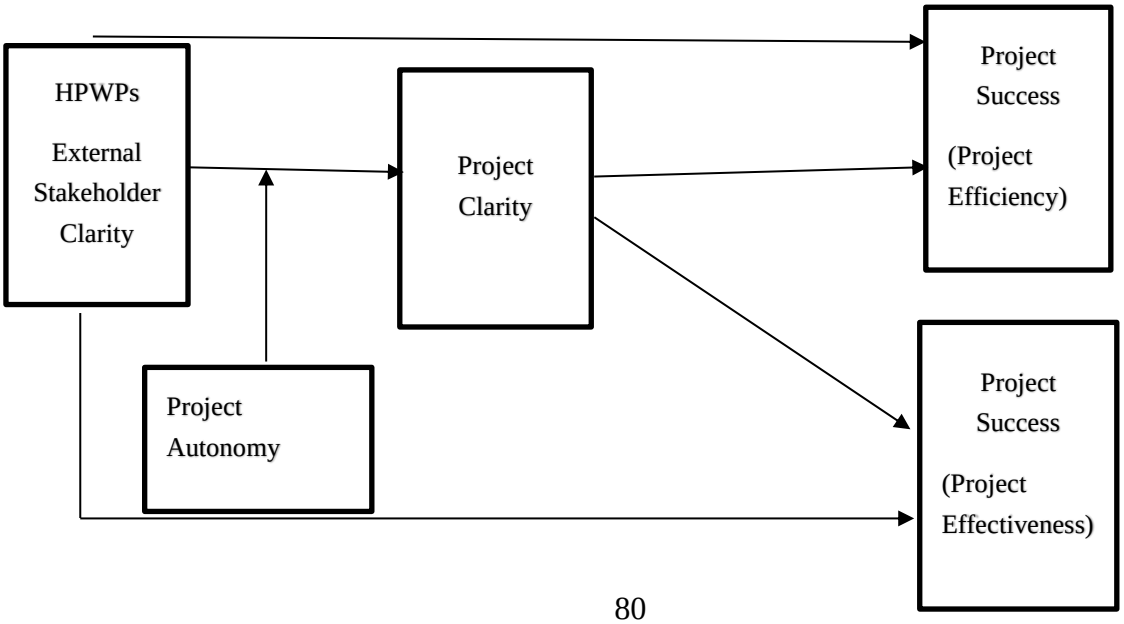
Project clarity is the extent to which team members perceive roles and responsibilities of the project delivery team to be clear (Beauchamp et al., 2002; Peralta, Lopes, Gilson, Lourenço & Pais, 2014). Finally, scholars have suggested an association between project autonomy and project success (Gemunden, Salomo, & Krieger, 2005; Hoegl & Parboteeah, 2006; Lee-Kelly & Leong, 2003; Martinsuo & Lehtonen, 2009). Autonomy conferred on the project manager to deal flexibly with unexpected situations, and to manage the interests of external stakeholders, is expected to positively impact on project success (Geoghegan & Dulewicz, 2008; Yang, Shen, Ho, Drew & Xue, 2011). Hence, the main aim of the present study is to examine the role of several contextual factors, namely external stakeholder clarity, project manager autonomy, and project clarity, on the relationship between HPWPs and project success.

The second reason to extend the current research into the factors that influence project success pertains to the scarcity of evidence outside construction organisations and Western contexts (Budhwar, Tung, Varma, & Do, 2017; Newman & Sheikh, 2014). Given the unique contextual and cultural challenges associated with the implementation and impact of HPWPs (Wright & Ulrich, 2017), there is a need to explore whether the influence of HPWPs on project success is consistent across organisational sectors and cultural contexts. Hence, the present study extends the current research by exploring the relationships between HPWPs and project success in project teams from service oriented knowledge-intensive organisations. The teams are sampled from organisations operating in New Zealand and in Sub-Saharan African countries.

Drawing on Human Capital Resources theory (Ployhart, Nyberg, Reilly & Maltarich, 2014), stakeholders theory (Freeman, 2010), shared mental model theory (Converse, Cannon-Bowers & Salas, 1991) and social context theory (Ferris et al., 1998), this study examines the unique contributions of a range of HPWPs and external stakeholders' clarity to project success,

the mediating role of project clarity, and the moderating role of project manager's autonomy in this relationship. This study integrates research from organisational behaviour and project management literatures to conduct multilevel strategic human resource management research, and provides three main contributions to theory and practice. First, the study deepens the rigour in strategic human resource management and project management research by testing a model linking HPWPs and project success through the effect of mediating and moderating factors, and using three-wave research that separates predictors, moderating and outcomes variables (Wright & Ulrich, 2017). Second, this study extends our understanding of the relationship between HPWPs and project success by including teams from different organisational settings, and distinct cultural contexts. Finally, findings from this study will offer insights to project managers, and elucidate whether and how project-specific HPWPs and contextual factors enhance project efficiency and effectiveness.

Figure 2: Proposed linkages between Project-oriented HPWPs, External Stakeholders' Clarity and Project Success



4.1 HPWPs, External Stakeholder Clarity and Project Success

Human Capital Resource theory posits that individual and team level competences developed and deployed during the implementation of team initiatives lead to team and organisational competitive advantage (Aryee, Walumbwa, Seidu & Otaye, 2016; Fagan & Ployhart, 2015; Ployhart, Nyberg, Reilly & Maltarich, 2014; Ployhart & Moliterno, 2011), HPWPs build project team members' knowledge, skills, abilities and other characteristics (KSAOs), and create conditions for their integration to support successful task completion (Delery, & Roumpi, 2017). Through HPWPs, project team members accrue project-specific abilities and motivation for performance in an environment characterised by ambiguity, volatility and uncertainty. Thus, competences developed following the implementation of HPWPs may be difficult to replicate because they are context-specific and useful for meeting specific customer or project end-user requirements (Fagan & Ployhart, 2015; Monks, Kelly, Conway, Flood, Truss, & Hannon, 2012).

Based on Human Capital Resource Theory, it is expected that HPWPs contribute to enhance project success in two ways. First, as the project environment is characterised by complex team dynamics, novelty, and structural, socio-political, and regulatory constrains (Rezende, Blackwell & Gonçalves, 2018; Ployhart & Moliterno, 2011), project team members must coordinate behaviours and continually update skills to ensure successful project delivery (Ployhart & Moliterno, 2011). HPWPs create contextual conditions that enable team members and the project team to develop capabilities to improve communication, synchronisation, and coordination for shared understanding of project objectives and project success criteria (Chiocchio, et al., 2012; Liu, Asio Cross, Glover & Aken, 2015; Ployhart et al., 2014).

For example, organisations rely on training to develop KSAOs, and on teamwork to deploy these KSAOs for knowledge sharing, which motivates the project team to complete high-quality projects that ensure project end-user satisfaction and organisational effectiveness (Aryee et al., 2016). HPWPs enhance team members' capabilities to understand organisational strategic direction, discern appropriate behaviours that support strategy implementation, and provide superior customer service (Greer, Lusch & Hitt, 2017). In addition, HPWPs facilitate knowledge sharing that contribute to project team shared mental models (Liu et al., 2015).

Project team shared mental model is a shared understanding of team members' in-depth knowledge about each other's working styles and procedures including how they conceive of the project (Ployhart & Moliterno, 2011). This shared understanding will help create clarity around external stakeholders' needs and requirements, which in turn contribute to project success (Flinchbaugh et al., 2016). In essence, HPWPs create a context whereby team members' KSAOs are aligned, developing collective human capital that contributes to project success (Fagan & Ployhart, 2015).

This study argues that project work units are unique and distinct from functional work units (e.g., a sales department) in two ways (Uhl-Bien & Graen, 1998). First, in project work there are no standard operating procedures for apportioning roles and responsibilities to team members, as this process is contingent on project requirements, and this may undermine role clarity (Hong, Nahm, & Doll, 2004). Second, project team members may experience stress due to high workload, as result of combining permanent functional roles with temporary project roles (Shaw, 2017). The effective implementation of HPWPs in a project team should provide team members with resources and guidelines to cope with these demands, and enhance strategic human capital contribution to enable team and organisational outcomes (Chiocchio, Beaulieu, Boudrias,

Rousseau, Aube, & Morin, 2010). On the other hand, external stakeholders' buy-in is essential to project success (Sunder, 2016). Without clear understanding of stakeholder needs and requirements, it is challenging to secure the resources and authority needed to support project success (Chan & Oppong, 2017). The following sections discuss the relationships between HPWPs (training, recognition, continuous feedback and teamwork), external stakeholders' clarity and project success, along efficiency and effectiveness criteria.

4.1.1 Training and development.

Leaders have used project-oriented training and development as a strategic intervention tool to mitigate the negative effects of volatility and uncertainty inherent in project environments (Ssegawa & Kasule, 2015). Project-oriented training is a systematic intervention provided by the organisation to develop team members' KSAOs, and enhance their capabilities to meet project requirements (Jain & Jain, 2015). The present study proposes that project-specific training helps team members develop project-specific KSAOs, and facilitates knowledge sharing during project delivery. Regarding the latter, project-specific training not only provides the relational competencies necessary to engage in knowledge sharing, but also enhances team members' motivation to share knowledge (Monk et al., 2012). Although the findings presented in Chapter II (Study 1) concerning the impact of project-specific training and development on project efficiency and effectiveness suggest a non-significant association, this study will test the relationship in a larger sample, using both New Zealand and Sub-Saharan African project teams.

4.1.2 Recognition.

Recognition is a non-financial incentive aimed at acknowledging discretionary effort and superior work performance, which can be provided in the form of verbal praise, or awards, and other symbolic gifts (Bradler, Dur, Neckermann, & Non, 2016; White, 2017). Recognition is used to

reiterate desirable behaviours in the organisation that are consistent with organisational values (Barcalow, 2016), with the expectation that these behaviours will be reinforced (Montani et al., 2017). In a project work context, recognition may promote knowledge sharing, as it signals that this behaviour should be enacted during project delivery to support project success (Licorish & MacDonnell, 2017). Although the findings presented in Chapter II (Study 1) concerning the impact of project-based recognition practice on project efficiency and effectiveness indicate non-significant direct and indirect relationships, the inconsistent results obtained in previous research suggest the need to further explore these linkages.

4.1.3 Continuous feedback.

Continuous feedback during project delivery refers to the ongoing provision of information about team members' performance throughout the project cycle by the project manager (Unger-Aviram et al., 2013). For instance, the feedback provided on discrete tasks linked to work breakdown structure namely the breaking down of project goals and tasks into manageble sections and milestones (Mulenburg, 2010), which includes the task procedure immediately after project completion, impacts team member performance and project success. Continuous feedback throughout project completion enhances learning and motivation at minimal cost (Thornock, 2016), helps clarify project goals, and provides timely status updates on work processes which may impact project operational efficiency and success (Gonzalez-Mule et al., 2016). Although the findings presented in Chapter II (Study 1) concerning the impact of continuous feedback on project efficiency and effectiveness indicate a non-significant direct relationship, these associations will be retested here.

4.1.4 Teamwork.

Teamwork refers to the collaborative effort between team members combining their individual KSAOs to adapt and coordinate in the achievement of project goal. Precisely, it involves team member communication, coordination and synchronicity and the interaction of these three elements define high-quality teamwork (Chiocchio et al., 2012). High-quality teamwork motivates team members to share knowledge that makes work progress, and enhances the well-being of team members during project task performance (Hoegl & Parboteeah, 2006). As end-user requirements are always changing, team members that collaborate extensively to provide quality and timely project information to each other may be satisfied with the experience in the team, and consequently motivated to complete high quality efficient and effective projects (Hoegl et al., 2003; Hu & Liden, 2015). The results obtained in Chapter II (Study 1) indicate significant direct and indirect relationship of teamwork on project efficiency and effectiveness. This study will attempt to corroborate these findings. The present study re-examines the linkages between all the HPWPs and project success explored in Chapter 2, except rewards. This is because results obtained in Chapter 2 suggest project managers do not have the organisational power to motivate project team members using financial incentives. Prior research suggests knowledge workers are unlikely to be motivated using financial incentives (Markova & Ford, 2011).

4.1.5 External stakeholder clarity and project success

A stakeholder is an individual or entity which may impact or be impacted by the achievement of organisational objectives (Julian, 2016; Rajablu, Marthandan, Fadzilah, & Yusoff, 2015). Project stakeholders can be internal (i.e., project team members), or external stakeholders (i.e., project sponsors, donors, and end-users). The satisfaction of the needs and expectations of these stakeholders is one of important drivers of project success (Caputo, 2013; Davies, 2017). Thus,

external stakeholders are defined as an individual or group of individuals who are not part of project delivery team, but have a significant influence on project activity, and are impacted by project outcomes or are users of project innovation (Liang, Yu, & Guo, 2017; McGrath & Whitty, 2017).

The importance and influencing role of external project stakeholders to project success can be summarised in three ways. First, the essence of project development is to satisfy external stakeholders' needs and requirements. The achievement of these needs and requirements determine a successful or failed project (Oppong, Chan, & Dansoh, 2017). In a nutshell, external stakeholders determine project evaluation criteria and judge the success or failure of projects based on the achievement of pre-determined objectives (Davies, 2017; Eskerod, Huemann, & Savage, 2015).

Second, external stakeholders provide financial and non-financial resources to projects. If the project does not meet stakeholder requirements, they may withhold resources and the project team may be disbanded (Eskerod et al., 2015; Julian, 2016). Third, projects bring changes to the organisational environment, and if these changes are disruptive, they may have negative impacts on stakeholders' attitudes and behaviours. These negative behaviours may undermine the project team's ability to meet project objectives and stakeholder requirements, negatively affecting the support for subsequent projects (Julian, 2016). Hence, effective communication and collaboration between the project team and external stakeholders are expected to help build the coalition base toward support for the project, resulting in enhanced project success (Eskerod et al., 2015; Julian 2016).

Lack of clarity around external stakeholders' goals, roles and requirements affect project activities and successful delivery (Geraldi, Maylor & Williams, 2011; Handfield et al., 2015;

Taghavi & Woo, 2017). Therefore, this study defines external stakeholder clarity as the extent to which project team members perceive project reporting format, and the roles and requirements of external stakeholders to be clear (Julian, 2016), and examines its relationship with project success.

Drawing on stakeholders theory (Freeman, 2010) and role clarity framework (Taghavi & Woo, 2017) the study argues that external stakeholder clarity will impact project efficiency and effectiveness. The central idea of stakeholder theory suggests that organisations should strive to manage competing interests across stakeholder groups. On the other hand, the main premise of role clarity framework posits that the ability of a team to effectively gather or scope requirements is contingent on its capacity to identify the roles of external stakeholders. Further, the framework suggests that clear and effective requirements gathering depends on communicating and documenting expectations, and activities, and the consequences associated with external stakeholders not performing their roles (Taghavi & Woo, 2017). Clear communication and interdependences between external stakeholders' expectations, activities, and consequences of not performing project task, will influence project team shared mental models of external stakeholders' requirements (Julian, 2016; Maylor, Vidgen, & Carver, 2008; Taghavi & Woo, 2017).

It is expected that clarity around requirements, around reporting formats expected by external stakeholders, and around the specific roles of external stakeholders, influence project efficiency and effectiveness in two ways. First, external stakeholders expect periodic reporting of project milestones (Julian, 2016). The reports must provide evidence of the achievement of strategic objectives. The mismatch between the expected substance of the project report and the actual report may lead to project report rework. Project task rework will undoubtedly affect project efficiency standards, by infringing on timeframes, and effectiveness criteria (e.g., stakeholder satisfaction). Second, the idea that clarity around external stakeholders' role in the project may

impact project success is based on the premise that mutual commitments, ongoing communication, and collaboration between the project team and external stakeholders are vital for project success. External stakeholders perform a "gate-keeping" role during project delivery (Hung, 2017). A project gatekeeper may be a project sponsor, product owner, or a representative of the business unit that uses project outputs or products. They provide project assurance services by ensuring accuracy and delivery of high-quality deliverables. Further, external stakeholders, certify the alignment between project objectives and project financial goals with the business needs and organisational financial goals (Kulkarni, 2014). Consequently, external stakeholders have the strategic power to influence project team decisions and provide clarity around what to expect in terms of project support (Chan & Oppong, 2017).

From a practical standpoint, a project team charter help to clearly outline expectations around project reporting milestones, behaviours and roles to be performed by external stakeholders during project implementation (Yang, Wang & Jin, 2014), and should allow the project team to achieve efficiency and effectiveness criteria (Taghavi & Woo, 2017). The project charter is a formal document written by the project team at the beginning of the project cycle, specifying project team members' and project stakeholder's roles and expected contributions throughout project cycle (Courtright, McCormick, Mistry & Wang, 2017; Taghavi & Woo, 2017). It is expected that project team members would be able to consult the written charter when there is ambiguity around any aspect of external stakeholder's requirements and roles, thus minimising inefficiencies. The following is hypothesised:

Hypothesis 1(a-b): External stakeholder's clarity has a significant and positive relationship to a) project efficiency and b) project effectiveness

4.2 The mediating role of project clarity

Project clarity is the extent to which team members perceive roles and responsibilities of the project delivery team to be clear, and it relies on the timely communication of changes to roles and responsibilities throughout the project delivery cycle (Hong et al., 2004; Maclean et al., 2012; Patanakul et al., 2016; Peralta, Lopes, Gilson, Lourenço & Pais, 2014). Prior studies suggest that clarity of roles and responsibilities, including timely communication of changes on a continual basis, ensure team motivation, team performance and team effectiveness (Handfield et al., 2015; Gonzalez-Mule et al., 2016; Patanakul et al., 2016; Peralta et al., 2014). However, little is known about what contextual factors contribute to perceptions of roles and scope clarity in a project-oriented context, and whether project clarity ensures project success. Hence, the present study examines the mediating role of project clarity on the relationship between HPWPs, external stakeholder clarity, and project success.

Shared mental model theory elucidates how HPWPs and external stakeholder clarity may influence project clarity for enhanced project success. Shared mental model theory refers to the shared understanding of the KSAOs and goals in a team, which enables team members to coordinate actions and enact behaviours that directly contribute to performance (Cannon-Bowers, Salas & Converse, 1993). According to Cannon-Bowers & Salas (2001) the shared mental model framework describes four types of mental models that influence team effectiveness. These shared mental models include: task-specific knowledge, task-related knowledge, knowledge of teammates, and team members attitudes or beliefs. First, task-specific knowledge refers to the team members' mutual understanding of work procedure, task interdependences, and strategies for project task performance. Second, task-related knowledge refers to a shared agreement about work processes, internal stakeholder's roles and responsibilities. The third type of shared mental model

involves team members' awareness of each others' strengths and capabilities. Team members demonstrate the understanding of the distribution of capabilities and subject-matter experts (SME) within the team. The final type of mental model that must be shared to achieve team performance involves awareness and understanding of teammates attitudes and belief systems. It is expected that when the project team members have a shared understanding of attitudes and beliefs, they will develop the capacities to achieve a shared frame to interpret the project environment (Cannon-Bowers & Salas, 2001; Chou, Wang, Wang, Huang, & Cheng 2008).

The team serves as a unified information processing unit where cognitive and motivational states that aid team processes and effectiveness co-evolve (Peralta et al., 2014; Yu & Petter, 2014). Individual and team performance are contingent on integrating individual KSAOs into team-level KSAOs. This cross-level integration is facilitated by shared understanding of goals, scope, roles and responsibilities within the team, and by a shared frame of reference that supports the enatcment of coordinated behaviours (Healey, Vuori & Hodgkinson, 2015; Liu et al., 2015; Yu & Petter, 2014).

Project team members' shared understanding of the project environment, including the stakeholders, may influence their willingness to acquire knowledge and demonstrate capabilities that contribute to project success (Oppong et al., 2017). Further, workplace interventions provided by the organisation (i.e., HPWPs) that help provide clarity to ambiguous and competing stakeholder's expectations must be viewed positively before the desired outcomes can be achieved (Geraldi et al., 2011; Jyoti & Rani, 2017). On the other hand, the inability to develop a shared mental model may impact team members' motivation negatively in the form of lack of knowledge and information sharing to support project goal achievement. Further, this demotivation may also

lead to frequent conflicts due to communication breakdown, role ambiguity and negative emotions, which hinder successful project delivery (Beauchamp et al., 2002; Maclean et al., 2012).

The current study proposes that project-specific HPWPs and external stakeholder clarity will be related to project clarity in three ways. First, HPWPs enable knowledge acquisition and motivation to share knowledge that enhances team member efficacy, trust, and a shared understanding of task procedures, project work structure, and team member expertise (Healey et al., 2015; Jyoti & Rani, 2017). It is expected that the by-product of knowledge acquisition and motivation to share will positively impact project clarity. Second, through HPWPs and initiatives that clarify external stakeholder's roles and requirements, team members' behaviours will be better aligned with project requirement goals (Gonzalez-Mules, et al., 2016; Maclean et al., 2012). Third, the provision of resources through HPWPs signifies support from the organisation (Patanakul et al., 2016; Tummers et al., 2015), and this support represents a source of motivation for knowledge and information sharing that helps develop team capabilities for project success (Aryee et al., 2016; Ployhart et al., 2014).

It is expected that the HPWPs and external stakeholder clarity considered in this study will influence project clarity. For instance, training and development provide guidelines that enhance project team capabilities and efficacy to communicate more clear roles. These capabilities aid successful completion of project scoping tasks and development of project scope document that is acceptable to stakeholders, because of the thorough articulation stakeholder needs and expectations at project commencement (Chiocchio et al., 2015). Further, recognition motivates team members to unleash personal energies toward project success through the reinforcement of specific attitudes and behaviours (Chou et al., 2008). Continuous feedback ensures clarity through the provision of updated project-relevant information, namely deviations from the original

requirements, and milestone achievement goal (Gonzalez-Mules et al., 2016). Teamwork provides a platform for communication and coordination needed for project team shared understanding of project requirements. Team members reach a mutual understanding of project goals that impacts on project efficiency and effectiveness (Hong et al., 2004). Finally, external stakeholder clarity enhances clarity regarding project priorities and efficiency and effectiveness criteria, which guides team efforts (Peralta et al., 2015). Therefore:

Hypothesis 2(a-e): Team members' positive perceptions of a) project-specific training and development, b) recognition, c) continuous feedback, d) teamwork e) external stakeholder's clarity has a significant and positive relationship to project clarity.

The study argues that project clarity may be the underlying mechanism that connects HPWPs and effective external stakeholders management to team and organisational outcomes (Alfes et al., 2013; Wright & Ulrich, 2017; Pollack & Adler, 2014). In a project environment, HPWPs facilitate knowledge exchange, team strategic planning and behavioural adaptation (Farh, Lanaj, & Illies, 2017; Peralta et al., 2014), which generate shared interpersonal trust and understanding of specific actions and behaviours related to project success (Chou et al., 2008; Patanakul et al., 2016). The shared trust and clarity to uncertain goals and behaviours will propel team members to intensify efforts and be persistent in achieving project goals (Geraldi et al., 2011; Patanakul et al., 2016). Therefore, HPWPs and external stakeholder clarity help create a cognitive and motivational state that aligns team member actions with project objectives, which in turn influences project efficiency and effectiveness (Peralta et al., 2014).

Hypothesis 3(a-e): Project clarity will mediate the relationship between a) project-specific training and development, b) recognition, c) continuous feedback, d) teamwork e) external stakeholder's clarity and project efficiency

Hypothesis 4(a-e): Project clarity will mediate the relationship between a) project-specific training and development, b) recognition, c) continuous feedback, d) teamwork e) external stakeholder's clarity and project effectiveness.

4.3 The moderating role of project autonomy

Project autonomy refers to the extent the organisation has allowed the project manager or team to progress without requirements for constant reporting and less input into project operational decisions (Hoegl & Parboteeah, 2006; Martinsuo & Lehtonen, 2009). In the project-oriented context, decision-making authority can be vested in the project manager or the project team. In both project manager and team scenarios, project autonomy is the authority to modify project scope and goals as needed, and freedom to re-organise project resources (e.g., funding, staffing) to respond and adapt to the changing project environment (Gemunden, Salomo, & Krieger, 2005; Hoegl & Parboteeah, 2006; Martinsuo & Lehtonen, 2009). In a complex organisational environment, little external influence from project sponsors or functional managers may enhance the project team's ability to adapt to changes in the project environment (Günsel & Açikgöz, 2013; Martinsuo & Lehtonen, 2009).

Although previous research found project autonomy to be related to project success and performance (Gemunden et al, 2005; Günsel & Açikgöz, 2013; Hoegl & Parboteeah, 2006; Martinsuo & Lehtonen, 2009), there is a dearth of empirical research examining the influence of project autonomy in the relationship between organisational practices and project success. The focus of this study is on project manager's autonomy instead of team autonomy because project managers implement HPWPs, and these implementation efforts may influence employee outcomes in the form of clarity of team members' roles and responsibilities (Sikora, Ferris & Iddekinge,

2015). Hence, this study argues that project manager autonomy is one of the contextual variables that help manage project complexities and enhance the effect of HPWPs on project clarity and project success.

The insights from social context theory about the relationship between HPWPs and organisational effectiveness may help explain why the interplay of project autonomy with HPWPs and external stakeholder's clarity may lead to enhanced project clarity (Ferris et al., 1998). According to Ferris and colleagues (1998), the organisational context involves culture, climate, politics, and social interaction processes. Social context theory suggests that the types of HPWPs implemented in an organisation are influenced by its culture. The theory also posits that an organisational context that provides managers with structured flexibility in the implementation of HPWPs may enhance the capabilities of managers to respond and adapt to the turbulent organisational environment. Consequently, high quality teamwork and motivation will be promoted when team members perceive that project-related decision making comes from the project managers or other team members considered as in-group members, rather than from external managers considered as out-group members (Hoegl & Parboteeah, 2006; Martinsuo & Lehtonen, 2009). Hence, project-oriented decision-making originating within the team would prompt behavioural adaptation through shared interpretation of the strong team climate which may enhance the capability of the team to share explicit project objectives, goals and procedures for project task performance (Bowen & Ostroff, 2004; Ferris et al., 1998).

It is expected that project managers that enjoy high flexibility in the implementation of HPWPs and in managing external stakeholders' expectations are able to channel the behaviours of the team members to valued goals and objectives that are aligned with organisational strategic objectives (Gonzalez-Mule et al., 2016), leading to shared understanding of roles and

responsibilities. Consequently, this study propose that the interplay of high project autonomy with HPWPs and external stakeholder clarity will result in higher project clarity (Chen et al., 2015; Cordery, Morrison, Wright & Wall, 2010).

Hypothesis 5(a-e): Project autonomy will moderate the relationship between a) project-specific training and development, b) recognition, c) continuous feedback, d) teamwork e) external stakeholder's clarity and project clarity. The relationship will be stronger when project autonomy is high than low.

4.3.1 Integrated mediated-moderation model.

When project managers enjoy high autonomy, it enables the project team to develop its own goals and performance management systems, which influences shared understanding of and commitment to the objectives in a project. Thus, high project clarity may drive the enactment of behaviours that contribute to project success (Chen et al., 2015). Hence:

Hypothesis 6(a-e): Project Autonomy moderates the strength of the relationship between a) training and development, b) recognition, c) continuous feedback d) teamwork e) external stakeholder's clarity and project clarity, such that mediated relationship of project clarity in project efficiency model is stronger under high project autonomy than low project autonomy.

Hypothesis 7(a-e): Project Autonomy moderates the strength of the relationship between a) training and development, b) recognition, c) continuous feedback d) teamwork e) external stakeholder's clarity and project clarity such that mediated relationship of project clarity in project effectiveness model is stronger under high project autonomy than low project autonomy.

4.4 Method

4.4.1 Study Design

Study 1 and 2 shared the same study design by temporally separating predictors, mediating, and outcomes variables to minimise common-method variance (Wright & Ulrich, 2017). Thus, study 2 gathered data at three-time points, with a one-month interval separating each time point, to reduce participants' attrition and burden of data collection. All responses were provided based on a named specific project newly completed by the project team members. The survey instructions specified the name of the project being rated, and the team members retrospectively recalled feelings, perceptions and behaviours during the delivery of the named rated project. Research suggests that in retrospective studies common method concerns are only marginally mitigated by collecting data at various time points, and therefore the order in which data are gathered is of little consequence (Law, Wong, Yan & Huang, 2016). For instance, in this study one of the predictors (external stakeholder clarity) was measured at time 3, along with project success.

At Time 1 (T1), project team members invited to take part in the survey completed the questionnaire containing statements about their views on HPWPs (training and development, recognition, continuous feedbacks and teamwork), project clarity, their role in the project, estimated project duration, actual project duration, and demographic information (See Appendix C). At T2, one month after T1, team members provided their scores on the perceived autonomy of the project manager to make project operational decisions independently. At T3, team members rated project success along efficiency and effectiveness criteria and external stakeholder clarity. External stakeholders for two of the teams in two of the organisations also rated project success. The study sought their view to understand if there is a consensus among

different stakeholder groups about project success, as prior studies suggest stakeholders' views may differ (Davies, 2017). External stakeholders of the remaining project teams were not surveyed due to unavailability.

4.4.2 Participants

The study sampled 63 project teams (175 participants) drawn from 20 public and private organisations in New Zealand (23 teams; 36.5%) and Nigeria (40 teams; 63.5%). One of the Nigerian organisations is an international Agricultural Research and Development organisation operating in 45 sub-Saharan African countries. Hence, the 40 Nigerian teams represented projects in 9 sub-Saharan African countries. The project teams that participated in this study are from knowledge-intensive organisations operating in diverse sectors that ranges from organisations in aluminium and steel industry to organisations in the oil and gas exploration industry.

At Time 1 (T1), 65% of the 269 project team members invited to take part in the survey completed the questionnaire containing statements on HPWPs, project clarity, project duration and respondent's demographics data (n=175). At T2, one month after T1, 57% of team members provided their ratings on project autonomy scale (n=152). At T3, 60% of team members and project managers provided their views on project success (n=162). The majority of team members were male (79%). Participants had an average age of 41.85 years (SD =9.56) and 90% had obtained a university/polytechnic degree or above. The average tenure of participants in the organisation was 9.60 years (SD =7.31). Moreover, 95% of the respondents were permanent full-time employees. Across the 63 completed projects included in this study, the average proposed project duration was 12.41 months (SD =11.38), and the actual project duration was 15.42 months (SD =13.65). Overall, 109 project team members completed the surveys from sub-Saharan African

organisations and 66 project team members completed the survey from New Zealand based organisations. Finally, team size ranged from 2 to 8 members.

4.4.3 Procedure

All data were collected via an online survey. Members of the top management team (Managing Directors or Executive Directors or General Managers, Human Resources) of large Nigerian and New Zealand organisations were contacted to request about their participation intention in the research. The researcher communicated the study aims and participation criteria, including the voluntary nature of the research, and guaranteed the confidentiality of individual team members' responses (see appendix E). Interested Chief Executives and Executive Directors shared the contact details of Divisional Heads that managed the project implementation. With top management support, Divisional Heads nominated completed projects and shared the contact details of the project managers that delivered the projects. Consequently, the project managers provided the list of project team members inclusive of their email addresses.

The survey questions were customised for each project team based on project information provided by project managers, and email panels were developed. Participants were assured of confidentiality and they were informed in T1 that clicking the participation link that would take them to the actual survey would indicate informed consent. The team members completed the surveys with the understanding that the responses provided via personalised survey links at three-time points one month apart would be matched. Reminders were sent two weeks after each survey was launched to improve response rates (De Jong, Bijlsma-Frankema & Cardinal, 2014). The study provided incentives for New Zealand based teams. Among the New Zealand teams, participants

that completed all three surveys, and chose to receive an incentive, were eligible to be in a draw to win one of three $400 supermarket vouchers.

4.4.3.1 Aggregation.

To account for nested nature of the individual within the team, the study assessed if the studied variables met the multilevel analysis criteria by conducting intraclass correlation coefficients (ICC). Based on the assumption that project team members are fixed and cannot be randomised, the study assessed the team members shared perception of the study variables. Hence, the two-way mixed model with absolute agreement models was chosen. The ICC scores produced acceptable cut-offs of .10 and above for ICC1, and .70 and above for ICC2 across all variables (Shieh, 2016). Prior studies suggest aggregation decisions can be made on ICC1 scores alone if they are high, and ICC2 that range between .50 and .70 are marginally acceptable (Dixon & Cunningham, 2006). The ICC1 ranged from .42 to .66 in the study. Further, ICC2 ranged between .69 and .88. Hence, the study data met the criteria for multilevel data analysis (Massenberg, Spurk & Kauffeld, 2015).

4.4.4 Measures

The questionnaires (T1, T2, and T3) for this study can be found in Appendices E, F and G. Unless otherwise noted, participants responded along 1= strongly disagree to 5=strongly agree scales. Study 2 adopted the measures used in Study 1 to assess perceptions about HPWPs and project success. Study 2 developed new measures to assess views about project clarity, project autonomy, and external stakeholder clarity. Participants provided demographic and project details, including age, gender, tenure, educational qualification, job type, project roles and responsibilities, and project duration (estimated and actual) when completing the T1 survey.

4.4.4.1 High-performance work practices (HPWPs).

Team members' perceptions of training and development, recognition, continuous feedback and teamwork were measured at T1. Training and development items were adapted from the Voice Climate Survey developed by Langford (2009), a 102-item multi-dimensional scale that comprises 31 subscales. The three-item learning and development subscale used in this study has a Cronbach alpha (α) of .74. A sample item is "The training and development I have received had improved my performance". The study also used the 3-item recognition scale developed by Yang (2012) (α=.82). A sample item in the scale is "When I do good quality work, my colleagues regularly show me their appreciation". The 4-item subscale of continuous feedback was adapted from the Performance Management System Scale developed by Sharma et al. (2016) (α=.83). A sample item is "During the project cycle, my areas for improvement were clearly pointed out to me". The 8-item abridged version of the collaborative work questionnaire (Chiocchio, et al., 2012) used in study 1 was used to assess teamwork (α=.90). A sample item is "My teammates and I exchange information on 'who does what".

4.4.4.2 External stakeholder clarity.

At T3, two months after T1, project team members provided ratings of external stakeholder's clarity about project reporting requirements, roles of external stakeholders in the project, and clarity around project needs and requirement. Data collection logistics and the need to reduce the number of items at T1 informed the decision to obtain the data for this predictor at T3. Research suggests that effect sizes of cross-lagged (two waves of data) and time-lagged (three waves of data) are similar and the order of data gathering does not matter in a retrospective study (Law et al., 2016). Further, based on the proposition that external stakeholders' clarity would

impact project success via project clarity, it was not expected that the effect size of the direct and indirect relationship in MSEM would be exaggerated.

The study surveyed project stakeholder's management and project complexity literature (Eskerod et al., 2015; Geraldi et al., 2011; Julian, 2016) to develop a 3-item scale for this study. Sample items were 'The project reporting format required by donors/sponsors was clear', 'External stakeholders understood their role in the project' and 'The project beneficiaries (e.g. end users, clients) were clear about the identification of needs and requirements'.

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4.4.4.3 Project clarity.

At T1, project team members provided ratings of clarity of roles and responsibilities of the project team members at the commencement of the project. A 2-item scale has been developed for the purpose of this study based on the review of sport and new product development teams' literature (Beauchamp, et al., 2002; Hong, et al., 2004). Sample items were 'The roles and responsibilities of those involved in the project were clearly specified at the outset' and 'Changes to roles and responsibilities that occurred throughout the project were communicated in a clear and timely fashion'.

4.4.4.4 Project autonomy.

At T2, one month after T1, project team members provided ratings of project manager's autonomy to make project operational decisions independently. The study relied on prior work on project autonomy (Gemunden et al., 2005; Hoegl & Parboteeah, 2006; Martinsuo & Lehtonen, 2009) to develop a 3-item instrument around goal-defining autonomy and resource autonomy (Gemunden et al., 2005). Sample items were 'The Project Manager had the authority to make operational decisions as needed (e.g., modifying project goals)', 'The Project Manager had the freedom to

autonomously make changes to project scope and goals as needed', and 'The Project Manager had the freedom to independently reorganize or change project resources (staffing, funding) as needed.'

4.4.4.5 Project success

Finally, project team members provided their opinion about project success at T3, one month after T2. The study adopted 3 items to measure project efficiency and 4 items to measure project effectiveness. Sample items were "The project was successful in meeting scope and requirements goals" for project efficiency, and "The end users were satisfied with the project's results" for project effectiveness.

4.4.5 Data Analysis

All data were analysed using SPSS version 25 for Windows and Mplus 8 (Muthen & Muthen, 2017). First, exploratory factor analyses (EFA) using direct oblimin rotation were conducted on Mplus 8 (Muthen & Muthen, 2017) to assess the dimensionality of the newly developed scales (i.e., external stakeholder clarity, project clarity, and project autonomy). Further, confirmatory factor analyses (CFA) were conducted for the other, established measures (Fokkema & Greiff, 2017; Ziegler, 2014).

4.4.5.1 Exploratory factor analysis.

The results from the EFAs showed that project autonomy, project clarity, and external stakeholder's clarity are distinct constructs, and that the items used to measure each construct loaded on distinct factors as expected (see Appendix I). The eight items that comprised the project autonomy, clarity and external stakeholder clarity scales yield a three-factor model that showed the best model fit ($\chi^2_=$ 10.39., df=7, χ^2/df = 1.48; RMSEA =.05, CFI =.99, TLI = .97, SRMR =.02) compared to 1 or 2-factor solutions.

4.4.5.2 Confirmation factor analysis.

The results of the CFA confirmed a poor model fit (χ^2= 287.72, df=129, χ^2/df = 2.23; RMSEA =.08, CFI =.88, TLI = .86, SRMR =.06) for a four-factor model of HPWPs, which include training and development, recognition, continuous feedback and teamwork. The teamwork scale yielded a 2-factor solution, contrasting with the one-factor solution obtained in Study 1. The final solution for the teamwork scale comprises six items along two factors, three items representing task communication, and the other three representing task synchronisation after excluding 2 items that yielded low loadings from the teamwork scale.. However, due to high correlation between the two obtained teamwork factors (.62), the two factors were merged, and the study used a unidimensional teamwork scale.

The CFA analysis conducted for a five-factor model of HPWPs showed model fit improvement (χ^2= 163.64, df=94, χ^2/df = 1.74; RMSEA =.06, CFI =.94, TLI = .92, SRMR =.07) compared to other solutions. Finally, the CFA for project success items confirmed the two-factor solution in study 1, corresponding the efficiency and effectiveness criteria specified, but had a poor model fit *(*χ^2= 62.05, df=13, χ^2/df = 4.77., RMSEA=.15, CFI=.88, TLI= .81, and SRMR =.08). This was due to the shift in the factor loading of the item measuring end-user satisfaction from effectiveness factor (study 1) to efficiency factor (study 2).

However, a four-item efficiency scale and a three-item effectiveness scale of project success showed a superior model fit *(*χ^2= 27.81, df=13, χ^2/df = 2.13., RMSEA=.08, CFI=.97, TLI= .94, and SRMR =.04). However, based on convention in project management research (Serrador & Turner, 2015; Turner & Zolin, 2012), and the need to create alignment between study 1 and 2, this study adopted study 1 item loadings(3 items measuring project efficiency and 4 items measuring project effectiveness). That is, project efficiency was conceived as the extent the

projects were completed on time, budget and scope/requirements. Project effectiveness was operationalised as the extent the end-users were satisfied with project results, and the extent the completed projects increased shareholders' value, generated profit/financial benefits, and provided desired performance improvement for the sponsoring organisations.

4.4.5.3 Multilevel moderation-mediation model analysis.

The Mplus modelling syntax developed for 1-1-1 multilevel indirect effects by Preacher, Zhang and Zyphur, (2011) was adapted to test the hypothesised linkages, and a Bayesian estimation method was chosen instead of maximum likelihood estimation because of the study's small sample size, ability to handle uneven and missing data including the number of estimated parameters (González-Romá & Hernández, 2017). This data analytic techniques help separate the impact of extraneous variables from variables of interest or impact that may be due to project team membership, organisations and industry. The study modelled the path of each HPWP and external stakeholder clarity, and their interactions with project autonomy, to project clarity and to project efficiency and effectiveness at both the individual and the team levels. The "define" function in Mplus 8 (Muthen & Muthen, 2017), was used to create the interaction term. To test Study 2 model, a multilevel moderated-mediation path model using 1-1-1 multilevel indirect effects was conducted (Preacher, et al., 2011).

All the studied variables were measured at the individual level (Level 1), and team members in Level-1 were nested within each project team (Level 2). At the within- and between-levels path, the first slope was created by regressing the mediator (project clarity) on the predictor variables (training, recognition, feedback, teamwork, and external stakeholder clarity). The second slope was created by regressing the mediator (project clarity) on the interaction terms of project autonomy with each independent variable (training, recognition, feedback, teamwork, and external

stakeholder clarity). Further, the third and fourth slopes were created by regressing the outcome variables (project efficiency and effectiveness) on project clarity.

The study used the model constraint function and syntax to compute mediation and moderated indirect effects at the within and between-levels. In generating the mediation effect, the first slope was multiplied with the third (project efficiency) and fourth slopes (project effectiveness). In the moderated indirect effect estimates, the first and second slopes of each predictor were added together and multiplied with the third slopes for project efficiency and the fourth slopes for project effectiveness at within- and between-level to establish the multilevel moderated indirect effect.

4.5 Results

4.5.1 Descriptive Statistics

Table 4 summarises the means, standard deviations, reliabilities, and correlation coefficients for the study variables. All scale reliabilities ranged between .72 and .88 indicating acceptable to good reliability (Dixon & Cunningham, 2006). As evidenced in Table 4, and with the exception of project autonomy, project clarity was positively and significantly related to all HPWPs (training, recognition, continuous feedback, teamwork and external stakeholders' clarity) and to project success (project efficiency and effectiveness). Further, all HPWPs and project clarity were strongly related to project efficiency and effectiveness, with the exception of continuous feedback and project autonomy that had non-significant relationship with project effectiveness.

A t-test was conducted to compare the means of two project teams' perceptions of project efficiency and effectiveness with the external stakeholders' views on the same projects to ascertain if the project team, project sponsor and end users of project deliverables shared the same perception

of project success. Using a high-technology manufacturing organisation as an example, the results show no significant mean differences in project efficiency scores between the project team (M=4.25, SD=.88) and external project stakeholders (M=3.55, SD=.69); t(5) =1.13, p=.31; in the two teams from two organisations. Similarly, there were no significant differences in ratings of project effectiveness provided by the project team (M=4.60, SD=.12) and project external stakeholders (M=4.58, SD=.38); t (5) =.10, p=.92, in the subset sample. Therefore, one can assume that the project success ratings provided by the team members were consistent with external stakeholder ratings. However, the study findings should be interpreted with caution, given the small sample available to ascertain stakeholder views.

Table 4
Means, Standard Deviations , Correlations and Cronbach Alphas

S/N	Variable	M	SD	1	2	3	4	5	6	7	8	9
1	Project Efficiency	4.10	.85	.85								
2	Project Effectiveness	4.15	.68	.58**	*.76*							
3	Training	3.75	.78	.35**	.19*	*.79*						
4	Recognition	3.89	.67	.37**	.28**	.37**	*.78*					
5	Continuous Feedback	3.56	.72	.34**	.10	.38**	.45**	*.81*				
6	Teamwork	4.02	.60	.43**	.32**	.30**	.46**	.35**	*.88*			
7	External Stakeholder Clarity	3.73	.68	.60**	.37**	.40**	.28**	.25**	.30**	*.77*		
8	Project Autonomy	3.03	.91	.10	-.02	.09	.01	.18*	.00	.01	*.72*	
9	Project Clarity	3.81	.78	.47**	.26**	.43**	.40**	.40**	.63**	.41**	.04	*.79*

N=175 Note: *p. <.05; ** p. <.01

4.5.2 Direct effects of HPWPs and external stakeholder clarity on project efficiency and effectiveness

As seen in Table 5, obtained findings contradict Study 1 findings. The 90% Bayesian credibility interval (Kuncel, Hezlett & Ones, 2001; Muthen & Muthen, 2010) for the direct effect of recognition on project efficiency was significant [(.19, CI= (.01, .36)]. Similarly, the direct effect of continuous feedback on project efficiency was also positive and statistically significant [(.21, CI= (.07, .34)]. Clarity around external stakeholders reporting requirements, roles, and project needs and requirements were significantly associated with project efficiency in the study sample [(.43, CI= (.24, .61)] supporting hypothesis 1a. Similar to Study 1, training [(.11, CI= (-.04, .26)] was not associated with project efficiency in the study sample. Surprisingly, the direct relationship between teamwork and project efficiency was not statistically significant despite moderate positive association between the two variables [(.23, CI= (-.02, .47)].

In the project effectiveness model, current findings were inconsistent with Study 1 results. Team member satisfaction with recognition received from colleagues and supervisors [(.16, CI= (.00, .33)], and the extent the team members were satisfied with the quality of teamwork [(.28, CI= (.08, .47)] were significantly associated with project effectiveness. Similar to Study 1, training and continuous feedback, were not directly related to project effectiveness. Therefore the study found consistency in Study 1 and 2 results in relation to direct association of training and continuous feedback with project effectiveness. Further, the study failed to found support for hypothesis 1b which is based on the assumption of direct relationship between external stakeholder clarity and project effectiveness.

4.5.3 Direct effects of HPWPs and external stakeholder clarity on project clarity

As seen in Table 5, project-oriented training was significantly associated with project clarity [(.43, CI= (.14, .67)] supporting hypothesis 2a. Satisfaction with recognition received from the project manager and colleagues was significantly associated with clarity of project roles and responsibilities [(.33, CI= (.01, .62)] supporting hypothesis 2b. Similarly, team member positive perception and satisfaction with teamwork quality was significant related with project clarity [(.73, CI= (.49, .96)] supporting hypothesis 2d**.** Clarity around external stakeholder requirements and roles was significantly related to project clarity [(.44, CI= (.16, .71)] supporting hypothesis 2e. Surprisingly, the ongoing feedback provided by the project manager during project delivery [(.12, CI= (-.10, .36)] was not associated with project clarity. Hence, hypothesis 2a, 2b 2d and 2e were supported and 2c was not supported.

4.5.4 Indirect effects through project clarity

The findings from this study suggest that training [(.10, CI= (.01, .21)], teamwork [(.13, CI= (.00, .28)], and external stakeholder clarity [(.07, CI= (.00, .17)] indirectly explain project efficiency through project clarity, supporting hypotheses 3a 3d and 3e. Project clarity did not play a role in the relationship of continuous feedback [(.02, CI= (-.02, .09)] and recognition [(.07, CI= (-.01, .18)] with project efficiency. Therefore, hypothesis 3b and c were rejected.

In the project effectiveness model, teamwork [(-.11, CI= (-.23, -.00)] was statistically significant but negatively indirectly associated with project effectiveness via project clarity. Other predicators: training [(-.03, CI= (-.10, .04)], recognition [(-.03, CI= (-.10, .02)], continuous feedback [(-.01, CI= (-.04, .02)], and external stakeholders clarity [(-.04, CI= (-.11, .03)] were not

indirectly associated with project effectiveness through project clarity. Consequently, hypothesis 3a-e were rejected.

4.5.5 Moderated effect of project autonomy on HPWPs, external stakeholder clarity and project clarity relationships

As seen in Table 5, project autonomy failed to moderate the relationships between training [(-.05, CI= (-.12, .05)], recognition [(-.01, CI= (-.09, .08)], continuous feedback[(.08, CI= (-.04, .15)], teamwork [(-.04, CI= (-.10, .04)], external stakeholders clarity [(-.07, CI= (-.13, .02)] and project clarity. Consequently, all of the hypotheses (5a-e) were rejected.

4.5.6 Moderated indirect effects of project autonomy via project clarity for Project Efficiency

As seen in Table 7, the overall moderated effect of project autonomy on the indirect effect model of training on project efficiency via project clarity [(.10, CI= (.02, .18)] was statistically significant, supporting hypothesis 6a. Although, the indirect relationship of recognition and project efficiency via project clarity was insignificant, however, when the project manager enjoys autonomy in making operational decisions the moderated relationship became significant. The overall moderated effect of project autonomy on the indirect effect model of recognition on project efficiency via project clarity [(.07, CI= (.01, .16)] was statistically significant, supporting hypothesis 6b.

Project autonomy unchanged the already established indirect relationship between teamwork and project efficiency via project clarity. The moderated-mediation effect of project autonomy on the indirect effect of teamwork and project efficiency via project clarity [(.13, CI= (.00, .28)], was statistically significant supporting hypothesis 6d. Similarly, project autonomy does not matter in the indirect relationship that exist between external stakeholder clarity and project efficiency via project clarity. Although, the overall moderated effect of project autonomy on

indirect effect model of external stakeholder clarity on project efficiency via project clarity [(.06, CI= (.00, .14)] was statistically supported, validating hypothesis 6e. The study failed to find support for the moderation-mediation effect in the continuous feedback [(.04, CI= (-.00, .09)] and project efficiency model. Hence, hypothesis 6a b, d and e were supported and hypothesis 6c were rejected.

4.5.7 Moderated indirect effects of project autonomy via project clarity for Project Effectiveness

As seen in Table 7, project autonomy moderated the indirect relationship between teamwork and project effectiveness relationship via project clarity in the negative direction [(-.11, CI= (-.22, -.00)]. This may have occurred because estimates of project clarity and project effectiveness relationship [(-.09, CI= (-.23, .04)] and the interaction of project autonomy and teamwork on project clarity [(-.04, CI= (-.10, .04)] were negative. This unexpected result suggests that project manager autonomy may hamper the teamwork effectiveness as a capability and motivation strategy to achieve project effectiveness. This is because a direct relationship between teamwork and project effectiveness as already being established. Project autonomy did not significantly moderate the overall indirect relationship of training [(-.03, CI= (-.09, .03)], recognition [(-.03, CI= (-.10, .01)], continuous feedback [(-.01, CI= (-.05, .02)] and external stakeholder clarity [(-.03, CI= (-.09, .02)] on project effectiveness via project clarity. Hence, hypothesis 7 a-c and e were rejected, and hypothesis 7d was supported, although not in the expected direction.

Table 5: Tests of direct relationships in the 1-1-1 Multilevel Model

Path	β	Posterior S.D	90% CI
Direct relationships Individual Level (Level 1)			
Training → Project Clarity	.43*	0.16	(.14,.67)
Recognition → Project Clarity	.33*	0.19	(.01,.62)
Feedback → Project Clarity	.12	0.17	(-.13,.44)
Teamwork → Project Clarity	.73**	0.14	(.49,.96)
External Stakeholders Clarity → Project Clarity	.44**	0.17	(.16,.71)
Autonomy→ Project Clarity	.16	0.2	(-.22,.44)
Autonomy*Training→ Project Clarity	-.05	0.05	(-.12,.05)
Autonomy*Recognition → Project Clarity	-.01	0.06	(-.10,.10)
Autonomy*Feedback→ Project Clarity	.08	0.05	(-.04,.15)
Autonomy*Teamwork → Project Clarity	-.04	0.04	(-.10,.04)
Autonomy*External → Project Clarity	-.07	0.04	(-.13,.02)
Project Clarity→ Project Efficiency	.22*	0.1	(.06,.38)
Project Clarity → Project Effectiveness	-.09	0.09	(-.23,.04)
Training → Project Efficiency	.11	0.09	(-.04,.26)
Training → Project Effectiveness	.03	0.08	(-.11,.15)
Recognition→ Project Efficiency	.19*	0.11	(.01,.36)
Recognition→ Project Effectiveness	.16*	0.09	(.00,.31)
Feedback → Project Efficiency	.21**	0.08	(.07,.34)
Feedback → Project Effectiveness	-.01	0.07	(-.13,.12)
Teamwork → Project Efficiency	.23	0.15	(-.02,.47)
Teamwork → Project Effectiveness	.28*	0.12	(.08,.47)
External Clarity→ Project Efficiency	.43**	0.11	(.24,.61)
External Clarity→ Project Effectiveness	.14	0.09	(-.03,.31)
Autonomy → Project Efficiency	.08	0.07	(-.04,.20)
Autonomy → Project Effectiveness	-.03	0.06	(-.13,.06)

N=175 Note: *p. <.05; ** p. <.01

β= Beta(regression estimate)
CI= Credibility Interval
Posterior S.D= Posterior Standard Deviation

Table 6: Tests of indirect relationships in the 1-1-1 Multilevel Model

Path	β	Posterior S.D	90% CI
Indirect relationships Individual Level (Level 1)			
Training→ Project Clarity→ Efficiency	.10*	0.06	(.01,.21)
Training→ Project Clarity→ Effectiveness	-.03	0.04	(-.10,.04)
Recognition→ Project Clarity→ Efficiency	.07	0.06	(-.01,.18)
Recognition→ Project Clarity→ Effectiveness	-.03	0.04	(-.10,.02)
Feedback→ Project Clarity→ Efficiency	.02	0.04	(-.02,.09)
Feedback→ Project Clarity→ Effectiveness	-.01	0.02	(-.04,.02)
Teamwork→ Project Clarity→ Efficiency	.13*	0.09	(.00,.28)
Teamwork→ Project Clarity→ Effectiveness	-.11*	0.07	(-.23,-.00)
External Clarity→ Project Clarity→ Efficiency	.07*	0.05	(.00,.17)
External Clarity→ Project Clarity→ Effectiveness	-.04	0.04	(-.11,.03)

N=175 Note: *p. <.05; ** p. <.01

β= Beta(regression estimate)

CI= Credibility Interval

Posterior S.D= Posterior Standard Deviation

Table 7: Tests of moderated indirect relationships in the 1-1-1 Multilevel Model

Path	β	Posterior S.D	90% CI
Moderated Indirect relationships Individual Level (Level 1)			
Training + Autonomy*Training→ Project Clarity→ Efficiency	.09*	0.05	(.02,.18)
Training + Autonomy*Training→ Project Clarity→ Effectiveness	-.03	0.03	(-.09,.03)
Recognition + Autonomy*Recognition→ Project Clarity→ Efficiency	.07*	0.05	(.01,.16)
Recognition + Autonomy*Recognition→ Project Clarity→ Effectiveness	-.03	0.03	(-.10,.01)
Feedback + Autonomy*Feedback→ Project Clarity→ Efficiency	.04	0.03	(-.00,.09)
Feedback+ Autonomy*Feedback→ Project Clarity→ Effectiveness	-.01	0.02	(-.05,.02)
Teamwork+ Autonomy*Teamwork→ Project Clarity→ Efficiency	.13*	0.08	(.00,.28)
Teamwork+ Autonomy*Teamwork→ Project Clarity→ Effectiveness	-.11*	0.07	(-.22,-.00)
External Clarity+Autonomy*External Clarity→ Project Clarity→ Efficiency	.06*	0.05	(.00,.14)
External Clarity+Autonomy*External Clarity→ Project Clarity→ Effectiveness	-.03	0.04	(-.09,.02)

N=175 Note: *p. <.05; ** p. <.01

β= Beta(regression estimate)

CI= Credibility Interval

Posterior S.D= Posterior Standard Deviation

4.6 Discussion

Positive views of HPWPs and clarity around external stakeholder requirements have been proposed to influence team members' motivation and commitment, along with knowledge management, stakeholder satisfaction, organisational performance, and other project success indicators (Chan & Oppong, 2017; Handfield et al., 2015; Jyoti & Rani, 2017; Kooij & Boon, 2018; Patanakul et al., 2018). Yet, how HPWPs and external stakeholder factors contribute to project success has been scarcely investigated in empirical research. This study was motivated by the need to increase our evidence-based understanding of the associations between HPWPs and project outcomes in knowledge-intensive organisations, and to identify contextual factors that may influence these associations (Wright & Ulrich, 2017). The study hypothesised that HPWPs and external stakeholder clarity would contribute to project efficiency and effectiveness, both directly and through their impact on project clarity, by building human capital. Moreover, the study proposed that the association between HPWPs and valued project outcomes would be enhanced when project managers enjoyed greater autonomy.

4.6.1 Direct effects

The findings from this study suggest that HPWPs and external stakeholder clarity contribute to project success criteria in unique ways. For instance, recognition, continuous feedback and external stakeholder clarity showed a direct association with project efficiency (i.e., completion on time, no cost overrun, achievement of scope and requirement goals), while recognition and teamwork were only significantly related to project effectiveness (i.e., completion of a project that ensures stakeholder satisfaction, increases shareholder value, generates financial benefit, and brings desired performance improvements to the organisation). The significant association of recognition with both efficiency and effectiveness criteria aligns

with previous research (Bradler et al., 2016; Montani et al., 2017; Shgari, 2016; Unger-Aviram et al., 2013), and highlights the contribution of this practice in a project context. Further, project managers' ongoing feedback during project delivery influenced the project teams' efficient project delivery. In addition, the extent to which project team members experienced good quality coordination and synchronicity with colleagues during project delivery (i.e., teamwork), directly influenced their ability to complete projects that met effectiveness criteria. Overall, except for recognition which showed a direct impact on both project efficiency and effectiveness, different HPWPs uniquely contributed to distinct project success criteria, further supporting the advantages of setting aside a 'bundle approach' to measuring HPWPs in favour of focusing on individual practices.

Conceptual models outlined in the project management literature suggest that the extent to which team members understand external stakeholders' expectations contributes to project success (Chan & Oppong, 2017; Eskerod et al., 2015; Julian, 2016; Taghavi & Woo, 2017). The evidence provided here offers empirical support for these conceptual assertions and indicates that when the project delivery team perceives project reporting requirements, roles, and business needs of external stakeholders to be clear at the outset of project delivery, this reflects positively on efficiency criteria.

In addition to project success across efficiency and effectiveness criteria, stakeholder clarity and several HPWPs were also significantly associated with project clarity. Training, recognition, teamwork, and external stakeholder clarity showed significant direct effects on team members' perception that the roles and responsibilities of the project delivery team were clearly outlined. The implementation of HPWPs and clarification of external stakeholder requirements

minimise ambiguities and direct the teams' attention to actions and tasks relevant to goal achievement (i.e., enhance project clarity).

4.6.2 Indirect effects

Further to the direct effects specified, training, teamwork and external stakeholder clarity explained project efficiency through their effect on project clarity. This study was the first to test these indirect relationships empirically. When team members perceived project-oriented training to be available and useful, they also reported being clear about the roles and responsibilities of the project delivery team. In turn, project clarity reflected positively on project efficiency. Similarly, high-quality teamwork, signified by effective task communication and team synchronicity, contributed to perceptions of project clarity, which led to increased project efficiency. Moreover, a sound understanding of external stakeholders' business needs and project reporting requirements at the outset of project implementation (i.e., stakeholder clarity) was positively related to the project team members' perceptions of clarity around their roles and responsibilities, which in turn was associated with project efficiency. Surprisingly, teamwork was negatively associated with project effectiveness via project clarity. The inclusion of project clarity as a mediator of the teamwork and project effectiveness relationship turns resulted in a negative association between the two variables.

Two plausible explanations may elucidate this negative association. First, the positive perceptions of teamwork (team communication, task synchronisation, coordination), project clarity and project efficiency raise process and performance expectations among project team members, and may lead them to be more critical of project effectiveness criteria (Chiocchio et al., 2012). Second, teamwork practices facilitate cognitive processes that ensure shared mental models of project roles and responsibilities. While these shared mental models may contribute

positively to tactical operational outcomes of project efficiency, they could undermine perceptions of strategic outcomes or project effectiveness criteria (Chou et al., 2008).

Research suggests that shared mental models make a positive contribution to task-specific cognitive outcomes such as timeliness, operational readiness, quality, volume, and efficiency (Cannon-Bowers & Salas, 2001; Chou et al., 2008). Teamwork was associated with project efficiency via project clarity because it enables functionally diverse team members to trust in each other's knowledge and combine the knowledge through communication and coordination to clarify project roles and responsibilities (King, 2017). In this context, better team communication, coordination and synchronicity elements of teamwork enhance communication of unambiguous team members' roles and responsibilities, including timely communication of project role changes. In turn, project team members were clear about the project task, and the tasks were completed on time (Chiocchio et al., 2012).

Clear and unambiguous team members' roles and responsibilities improved shared understanding of project team members' accountabilities and reduced conflict about task ownership. Further, prompt communication of changes in roles and responsibilities help avoid stakeholders' resistance to evolving project environments and promote knowledge sharing that ensures quick project turnaround time and project efficiency (Maclean et al., 2012; Ployhart & Moliterno, 2011;Shaw, 2017).

Conversely, shared mental model could undermine the team processes such as innovation, problem-solving and creativity that facilitates project effectiveness. Research suggests that characteristics of project environment as it relates to time pressure, complexity in decision making and desire to be efficient lead to project team member thinking similarly and adopting a similar position on issues. Hence, the need to preserve team solidarity and the intense

pressures to conform to shared attitudes and behaviours stifles brainstorming, team reflection and adaptation which are the prerequisite for project effectiveness (Jones, & Roelofsma, 2000). In this context, strict teamwork guidelines may restrict the range of team member contributions, create homogeneity in approaches to team problem solving, and hinder the enactment of extra role behaviours needed in developing innovative project outputs that contribute to project effectiveness (Chou et al., 2008).

The turbulent and dynamic project environments require project team members to be adaptable and contribute with unique perspectives, which demands flexibility in project roles and responsibilities. Project effectiveness requires high degree of creativity and innovation to develop project outputs that succeed in the marketplace. When there is misalignment between the actual project roles and responsibilities and the perceived project roles, project team members may be unwilling to enact creative and innovative behaviours needed for project effectiveness, and they tend to prioritise clearly communicated roles and responsibilities.

In a nutshell, dynamic project environments mean project roles and responsibilities are constantly changing. Project Managers are overwhelmed during project delivery and may emphasise standard procedure over innovative stance. This may explain the negative association between teamwork criteria and project effectiveness through project clarity (Patanakul et al., 2016).

4.6.3 Moderated-mediation effects

Concerning the moderated indirect effects tested in relation to project efficiency criteria, the results suggest that project autonomy moderates the indirect effect of training, recognition, teamwork, and external stakeholder clarity on project efficiency via project clarity. While the effects were modest, the results nevertheless suggest that when the project manager enjoys

autonomy in modifying the project scope, goals and resources as needed, and when there is ongoing project-oriented training that allows the team to adjust to the new requirements, the roles and responsibilities of the project delivery team remain unambiguous, and this has a positive influence on project efficiency. Similarly, the implementation of changes to project features as a result of project autonomy are associated with greater clarity and positive outcomes when team members feel recognised for enacting behaviours aligned with the changing project requirements. In this case, project managers reinforce new or additional behaviours that support efficient project completion (Chen et al., 2015; Unger-Aviram et al., 2013). A similar effect was obtained with regards to the interaction between teamwork and project autonomy, where increased autonomy coupled with ongoing communication and effective team processes ensured project clarity, and subsequently benefited project efficiency. Lastly, project efficiency was achieved when project managers enjoyed autonomy, and the team was also clear about external stakeholder needs and requirements, even as they changed.

With regards to project effectiveness, project autonomy significantly moderated the indirect effect of teamwork on project effectiveness via project clarity, but this relationship was negative. This result means that the project manager's freedom to unilaterally modify project goals, scope and resources may have a negative impact on project task coordination and synchronicity among team members, undermining the contribution of teamwork to project clarity and project effectiveness. Alternatively, the current study conceptualises project autonomy as a factor that contributes to project efficiency criteria. Projects are characterised by ambiguities, and project managers need autonomy to implement HPWPs that facilitate knowledge creation and sharing including higher coordination for problem-solving (Maclean et al., 2012). Efficient project team performance is dependent on minimising delays. Yet, project decisions are referred

to the project sponsor or project steering committee, which may impact project timeline negatively considering the time lag between conveying information to the project steering committee and decision making. Hence, in this context, project efficiency might be the proximal outcome to project autonomy and project effectiveness might be the distal outcome (Chen et al., 2015).

In sum, these findings are generally consistent with prior studies that have conceptualised or empirically examined the strategic contribution of HPWPs and stakeholder clarity to project success, particularly with regards to efficiency criteria (Aryee et al., 2016; Delery & Roumpi, 2017; Fagan & Ployhart, 2015; Ployhart et al., 2014). The theoretical and practical implications for these results will be discussed in the next sections.

4.6.4 Implications for Theory and Practice

The current study contributes with insights to project team management research and practice in five ways. First, this study extended the project management literature by measuring the HPWPs and contextual factors of interest in relation to both efficiency and effectiveness project criteria, and by relying on data collected from organisations in dissimilar business environments. Second, the study answered scholarly calls for research on the interplay of organisational practices and contextual factors that influence project outcomes. Third, this research modelled a rigorous approach to strategic human resource management and project management research by relying on a three-wave research design that separated predictor, mediating, and outcomes variables. Fourth, the study explored the associations between discrete HPWPs and project success criteria, instead of relying on a 'bundle approach' to HPWPs measurement. Fifth, the study provides insights that support closer alignment between project and change management disciplines.

With respect to the first research implication, the study offers substantive contributions to project management research. The present study relies on and integrates theoretical frameworks developed in Organisational Behaviour (e.g., Human Capital Resource theory, stakeholder theory, shared mental model theory, and social context theory) and Project Management (e.g., role clarity framework) disciplines to elucidate how strategic human resources management practices shape project outcomes, operationalised in terms of efficiency and effectiveness criteria. These linkages were examined in teams sampled from New Zealand and sub-Saharan African countries to enhance our understanding of whether and how HPWPs and external stakeholder clarity affect project success. Consistent with Study 1, findings from the current study support evaluating project success based not only on efficiency criteria but also on the projects' contributions to the long-term financial viability of the organisation.

Concerning the second contribution, the current study provides empirical evidence of the linkages between organisational practices, contextual factors, and project team performance (Schneider, Yost, Kropp, Kind & Lam, 2017; Oosthuizen, Grobbelaar & Bam, 2016; Parker et al., 2015). The findings obtained suggest that high-performance practices enhance team members' shared and accurate perceptions of their roles and responsibilities. In turn, these perceptions guide team members' behaviours that contribute to the success of project initiatives. Further, the study also identified that an organisational context that grants project managers the freedom to make changes to project goals and implement HPWPs, including initiatives that clarify external stakeholders' business needs, contribute to project success. Hence, the study corroborated prior research suggesting the importance of project autonomy and project clarity, of HPWPs, and of effective external stakeholder relationship management strategies in developing projects that contribute to enhanced team and organisational outcomes (Chuang, Jackson &

Jiang, 2016; Rezende et al., 2018; Tyssen, Wald & Heidenreich, 2014; Xiu, Liang, Chen & Xu, 2017).

Regarding the third research contribution, the current study models a rigorous approach to strategic human resource management and project management research as suggested by Wright and Ulrich (2017). This study relied on a three-wave research design that separated predictor, mediating, and outcomes variables. Further, the study relied on multilevel moderation-mediation regression analysis and employed a Bayesian estimation method that is seldom used in project management research. This analytical approach produces unconflated path models by allowing variation across project teams at the individual and team levels (González-Romá & Hernández, 2017). Hence, the confidence in the findings and contributions of the present study is strengthened, as the analytic approach used produces more accurate statistical insights, effectively attenuating artificially inflated relationships between predictor and outcome variables. In addition to the above contributions, the study is the first to offer a quantitative examination of the association between effective external stakeholder management and project success, considering the role of project autonomy and project clarity.

Regarding the fourth contribution, the current study demonstrated the merits of an individualised approach to assessing the impact of HPWPs on project success criteria. Findings suggest that each of the HPWPs is uniquely associated with each of the project success criteria. Hence, the current study provides the empirical support that demonstrated the relationship between specific core HPWPs (Posthuma et al., 2013) and project success criteria across context and industries. The current study generated findings consistent with a universalistic, convergence perspective of HRM. Results from the exploratory factor analyses conducted on HPWPs and project success criteria demonstrate that samples from both New Zealand and Sub-Saharan

African organisations shared the same latent factor structure of the items measuring HPWPs and project success.

Two logical reasons explain why the convergence of HPWPs in both contexts is not surprising. First, project managers from the Agricultural Research and Development organisation headquartered in Nigeria, surveyed in this research, have a practice of sending project managers to branch offices situated in other African countries to complete projects. Hence, the project managers assigned to the projects completed in the nine African countries represented in this study ensured a standardised implementation and adoption of HRM systems, mirroring the Headquarters' HRM systems (Foley et al., 2012).

Second, all the participants in this research, across the organisations and countries surveyed, are highly educated professionals that may have been exposed to Western-oriented project management methodologies and frameworks. Forty-six per cent of the study participants have advanced degrees (masters and doctoral) and over forty-four per cent of the participants have completed a bachelor's degree. Consistent with the convergence perspective, three organisations in the Sub-Saharan African sample receive donations over $3 billion yearly used toward funding projects across sub-Saharan African countries. In addition to the financial investment, the international donors provide technology and education comparable to what is available in the Western countries. Hence, the congruence in the level of education and technology created uniformity in the perceived HPWPs in both New Zealand and Sub-Saharan African context.

The fifth and final contribution of this study concerns evidence and insights that support the alignment of project management and change management approaches, namely the suggestion that HPWPs are useful in building support for both change commitment and project

success (Conway & Monk, 2008; Sghari, 2016). Organisational changes are carried out in the form of projects, and the likelihood of project success can be enhanced when organisations align project activities and change management strategy. The results suggest the contributions of HPWPs and external stakeholder clarity may be transferable to larger-scale change contexts to facilitate change implementation success and sustainability of competitive advantage (Pádár, Pataki & Sebestyén, 2017). In this sense, initiatives and ongoing communication that enhance external stakeholders clarity, and training that ensures project team develop the skills required to manage specific projects given broader organisational goals, demands and resource constraints (Shaw, 2017), may be essential to achieve organisational change readiness, commitments and change implementation success.

4.6.5 Limitations and Directions for Future Research

Notwithstanding its contributions, the present study also shows several limitations, most of which amenable to improvement through further research. For instance, the relatively small sample size may have restricted the statistical power of the data analytic approach adopted, and accounted for the small effect sizes obtained. Future research should attempt to replicate the result of this study using larger cross-national samples, and relying on maximum likelihood techniques to explore if sample size influenced the strength of the reported relationships. Nevertheless, data were obtained from 63 project teams in 15 industries across New Zealand and sub-Saharan African countries at three different time points.

The study design and diverse business context of data gathering offer preliminary support for the validity and generalisability of findings. Future research can conduct multi-group analyses by industry and country, and multi-group multilevel moderation-mediation models (Muthén & Muthén, 2010). The use of these approaches may expand our understanding of the

impact of industry practices and national culture on how HPWPs are implemented in a different context. For example, the construction industry tends to favour the use of waterfall project methodology, which involves detailed project planning before project deployment, whereas IT companies tend to use agile project methodology, involving incremental project development and requirements elicitation via ongoing collaboration with project end-users. It is expected that each methodology would have distinct effects on project clarity and project success (Albert et al., 2017). Regarding the influence of national culture, future research could explore whether different cultural dimensions (e.g., individualism/collectivism, power distance) influence project manager autonomy, and their reliance on specific HPWPs in project teams.

With regards to the measures used in study 2, the absence of validated measures to capture project autonomy, project clarity and external stakeholder clarity led to the development of items based on the literature review for this study. Project autonomy was conceptualised as a four-dimensional construct, comprising the dimensions goal defining, structural, resource and social autonomy. Goal defining autonomy refers to the freedom to make goals, structural autonomy refers to the freedom to create team reporting structures and systems, resources autonomy denotes freedom of obtaining or modifying resources needed to complete project task, and social autonomy involves freedom for self-organising and co-location for communication effectiveness (Gemunden et al., 2005). The current study created a 3-item scale representative of goal defining autonomy. Future studies may integrate items that capture the latent factors of social, resource and structural autonomy into the project autonomy scale. On a similar note, the study developed a 2-item scale to measure project clarity and a 3-item scale to measure external stakeholder clarity. Prior research suggested short scales may lower the content validity of a

measure (Valls, Gonzalez-Roma & Tomas, 2016). Future studies should try to refine and validate these measures and replicate current results.

The majority of the participants in this study were knowledge workers in non-project-oriented organisations. Hence, the participants may have experienced stress and demotivation due to high workload as a consequence of combining their functional role with project responsibilities (Chiocchio et al., 2010). Project success can be hindered by the experience of role ambiguity and role conflict resulting from the switch from a functional unit role to a project team, which have been associated with low engagement and wellbeing (Guest, 2017). Future research may examine how role stressors in a project environment influence team members' psychological wellbeing, commitment, and subsequent project success.

An additional limitation pertains to the fact that the data were collected primarily from project team members (i.e., single source), due to unavailability of further sources. Though team member and external stakeholder appraisals of project success were compared in two of the project teams, and suggest a shared perception of project success, this assessment of agreement between team members, project sponsors, and project end-users should be extended to more teams and improve the generalisability of findings.

Finally, the study was conducted in smaller-scale projects, so its generalisability to larger-scale projects cannot be established. Research suggests that the implementation of large-scale projects such as mega-technology projects in organisations would be on the rise due to the increase in workplace automation and artificial intelligence (Rotolo et al., 2017). Large-scale projects lead to extensive changes in organisational environments, and many large-scale initiatives may suffer high failure rates because of project team management issues (Heunis, 2016). Future research should expand current findings in the context of technologically induced large-scale

organisational change project to explore whether HPWPs boost clarity, morale, engagement, commitment and change implementation success.

4.6.6 Conclusion

Contemporary organisations may not survive dynamic and uncertain operating environments without implementing a project. Changing organisations use projects and project teams to drive innovation and competitive advantage agenda. Hence, the investigation of project contextual and process factors linking high-performance work practices to project success constitutes a proactive approach in developing an action plan for sustaining project team capability and motivation needed for successful implementation of organisational initiatives.

The present study indicates that fulfilling the human need of being recognised for effort and performance might be one of the most effective strategies for managing project teams. Other HPWPs also matter to achieving project success in a changing business landscape. However, the effect of these HPWPs on project success are criteria specific. Therefore, the current study provided empirical evidence for the specific HPWPs and contextual factors that offer strategic benefits for organisations that intend to use project success enhancement as a strategy to sustain competitive advantage.

Chapter 5

High-performance work practices: Talent and project complexities management strategies for enhanced project success and competitive advantage

"Projects and programmes are the core of any organisation's strategic initiatives – they are how change happens. As organisations are usually going through many changes at the same time, the ability to build the on-going and repeatable capacity to engage with employees, gain their commitment, and ensure profitable and timely delivery is the extent to which the organisation gets better at changing"

KPMG Project Management Survey: Driving business performance, April, 2017, (p. 33).

5.1 Overall Aims of the Thesis

Modern organisations use project implementation as an adaptive tool to manage their dynamic and volatile operating environment. During project implementation, organisations pool together human and financial resources to achieve goals germane to the achievement of competitive advantage (Albert et al., 2017). Unfortunately, the success rate of projects is historically low (Ika, 2009), and as a consequence of low project success, organisations suffer financial and productivity losses that threaten their longevity.

Prior work on low project success rates identified employee factors (e.g. attitudes, behaviours, and competencies), organisational culture, and lack of senior management support as the main contributing factors (Allen et al., 2014; Atkinson, 1999; Belassi & Tukel, 1996). Employee and leadership factors have been suggested to drive project success, beyond the contributions of technical factors such as troubleshooting, development methodology skills, project management skills, and risk management (Bondarouk & Ruel, 2008; Keil, Lee & Deng,

2013; Scott-Young Samson, 2008). However, there is surprisingly little empirical research investigating the role of organisational practices and employee factors on project success, particularly the relationship between project-oriented HRM practices and team members' capability and motivation (Belassi & Tukel, 1996).

The present thesis attempted to address the research gaps identified above and conducted two studies. Both studies drew on integrated insights from the Organisational Behaviour and Project Management literatures to investigate how organisations can use strategically linked High-Performance Work Practices (HPWPs) to enhance project success. The studies investigated the merits of measuring HPWPs as individualised practices, instead of relying on a bundle approach. Drawing on the ability, motivation, and opportunity (AMO) framework and social exchange theory (SET), Study 1 (Chapter II) explored the mediating role of employee engagement in the relationship of HPWPs (i.e., training and development, rewards and recognition, teamwork, and performance feedback) and project success, along efficiency and effectiveness criteria. Study 2 (Chapter III) extended Study 1 and relied on insights of human capital resource theory, social context theory, and shared mental model framework to explore the moderating role of project manager's autonomy and the mediating role of project clarity in the relationship of HPWPs, external stakeholder clarity and project success. Study 2 used data obtained from project teams in New Zealand and several sub-Saharan Africa countries.

Both studies operationalised project success to encompass short-term efficiency criteria and the long-term strategic impact of project outcomes to organisational performance (McLeod, Doolin, & MacDonell, 2012; Serrador & Turner, 2015). The convention in project management research to measure project success based on cost, time and quality criteria (Atkinson, 1999), the present study incorporated the achievement of strategic objectives of sponsoring organisations,

along with stakeholder satisfaction, as project success criteria. Thus, the current study used a comprehensive operationalisation of project success, encompassing project efficiency criteria (i.e. completion within planned cost, time, and quality parameters), and effectiveness criteria (i.e., completion of projects that enhance shareholder value, profitability/financial benefits, performance improvement, and stakeholder satisfaction).

Data analysis for both studies relied on multilevel structural equation modelling (MSEM) with Bayesian estimation analysis because the nested nature of the data (i.e., team) produced a relatively small sample size. This analytical approach was adopted to separate the influence of variables extraneous to the project environment (i.e., project size and organisational complexity). Further, this analytic approach is not based on the linear regression assumption of symmetric normal distributions for parameter estimates (Muthen, 2010).

5.2 Overall Summary of Findings

Both Study 1 and 2 investigated indirect relationships between HPWPs and project success through employee engagement (Study 1) and project clarity (Study 2). The studies corroborated prior research about the motivational and cognitive channels connecting HPWPs with strategic and operational outcomes (Boxall et al., 2015; Morrison et al., 2005). Findings from Study 1 suggest that employee engagement makes a substantive contribution to strategic project effectiveness outcomes. Training, continuous feedback and teamwork elicit employee engagement feelings and behaviours, and these behaviours positively contributed to the completion of high-quality projects that meet project effectiveness criteria.

Study 1 supported motivational mechanism between HPWPs and project effectiveness in line with prior research (Conway & Monks, 2008; Latorre, Guest, Ramos, & Gracia, 2016). In this sense, project effectiveness was achieved via employee engagement because HPWPs such as

training, continuous feedback and teamwork met formal and informal knowledge acquisition needs of project team members (Leslie, Manchester, Park & Mehng, 2012). The training and continuous feedback provided by the project managers improved employeees feeling of self-efficacy and signalled the specific attitudes and behaviours that led to project effectiveness. Further, teamwork is a cue to social support from coworkers and social cohesion in the project team, which influences team member motivation to share ideas and resources that enhance engagement feelings and behaviours, including the release of positive project team energies (cognitive, emotional and physical) needed for project effectiveness (Shuck, 2011).

In Study 2, project clarity mediated the relationship between training, teamwork, and project efficiency. These findings elucidate how HPWPs impact project efficiency via the cognitive process. In this connection, the knowledge acquisition and sharing through training and teamwork help achieve clarity of team members' roles and responsibilities. Team members that were clear about roles and behavioural expectations developed the capacity to complete projects on time, budget and quality. Through a cognitive process, HPWPs foster project team retention and achievement of corporate objectives by clarifying associations between individual capabilities, and their roles and responsibilities (Yang, 2012).

The perceived congruence between HPWPs and project roles including responsibilities invoke positive attitudes and behaviours when the HPWPs upgrade competency level of the project team due to changing business requirements. HPWPs restore equilibrium to competency demand and supply in the project environment (Boxall, 2012). Therefore, project efficiency is achieved when the competencies required completing a project, along with their association to project requirements, are clearly communicated and developed through HPWPs (Herd & Alagaraja, 2012).

In the same way, project clarity mediated the relationship between external stakeholder clarity and project efficiency. In addition, findings show that external stakeholder clarity was significantly associated with project efficiency. That is, the perception around clarity of external stakeholder roles, needs, and project reporting requirements clarified team members' roles and responsibilities. Consequently, the project teams' shared understanding of how the needs and expectations of external stakeholders could be met led to the completion of projects on time, budget and quality. Concisely, external stakeholder clarity was directly associated with project efficiency, and indirectly via project clarity.

The inability of the study to establish direct and indirect association between external stakeholders clarity and project effectiveness was not shocking. External stakeholder clarity is an operational construct that conceptualises clarity of project reporting format, and clarity of end-user business needs and requirements including clarity of external stakeholders' role. Research suggests external stakeholders ratify role allocations, and clarity of their expectations aids the prompt identification of business goals, activities and actions impact project efficiency. Items that measure project effectiveness (i.e., increase in shareholders' value, profitability and performance improvement) are distal outcomes and are beyond the project team circle of influence in the organisational environment (Taghavi & Woo, 2017). Other factors that include marketing effectiveness, regulatory control, and customer preference unaccounted for in this study influence project effectiveness (Caputo, 2013).

Surprisingly, teamwork was the only HPWPs that showed a significant indirect association with project effectiveness via project clarity. However, the connection was negative. When project team members are satisfied with teamwork quality they tend to rely on planned and routine communication of roles and responsibilities to ensure timeliness of task completion

and to avoid ambiguity. Project work requires flexibility and adaptation. However, in an environment where project team members share strong mental representations of project tasks, roles and responsibilities, it may become difficult for them to demonstrate the flexibility required in the continually changing project environment. This is because of emotional commitment to the initial explicitly communicated roles and responsibilities and the inability of the project team to see the need to change and adapt unless they are prompted to do so. Hence, the project team's unwillingness to enact extra-role behaviours communicated via new set of roles and responsibilities and their favoured approach to project work business process standardisation may affect project effectiveness negatively (Kalmanovich-Cohen, Pearsall & Christian, 2018). Project effectiveness requires flexibility, creativity and innovation because of dynamic external environments and not roles and responsibilities standardisation (Gonzalez-Mulé et al., 2016).

5.2.1 The moderated indirect role of project autonomy.

Study 2 (Chapter III) investigated the moderated role of project manager autonomy in the indirect relationship of HPWPs and external stakeholder clarity to project success via project clarity. Project autonomy moderated the indirect effect of training, recognition, teamwork and external stakeholder clarity on project efficiency via project clarity. Despite the small effect sizes, the findings suggest that organisations stand to gain when project managers enjoy the freedom to make operational decisions to adapt to changing requirements and ensure project efficiency. In projects where the managers enjoyed autonomy, the implementation of HPWPs and perceived clarity around external stakeholder needs and requirements led to less ambiguity about project team roles and responsibilities.

As a result, these projects were completed on time, budget and scope. Notably, the moderated indirect effect of project autonomy was negative for the teamwork and project

effectiveness relationship via project clarity. This is consistent with the negative indirect effects obtained in Study 1 and seem to suggest that project manager autonomy cannot reverse the negative effect of a strong shared mental representation of the project. Despite being moderately clear on the requirements, project team members are somehow unable to deviate from routine and planned communicated roles on project effectiveness (Kalmanovich-Cohen et al., 2018).

Project effectiveness relies on the ability to adapt team roles based on changing customer requirements, and project team members' willingness to enact extra-role behaviours. The findings from Study 2 demonstrate that the autonomous project manager was successful in facilitating information processing and speeding up the project decision-making, which positively influenced project efficiency. However, the project management decisions that enhanced project efficiency may have undermined project effectiveness. This is because the autonomous project manager as the implementer of HPWPs, shared the same mental representation of routine and planned communicated roles with the project team members. Hence, project manager despite enjoying autonomy may be unwilling to implement novel practices and roles because of initial time and resources commitment needed to make changes that may negatively influence project efficiency.

Communications of new roles and responsibilities can be challenging especially when it involves many project team members (Geraldi et al., 2011). Furthermore, it takes time for project team members to settle into new roles and enact performance-enhancing behaviours (Zwikael & Unger-Aviram, 2010). Therefore, the time lag it takes for enactment of performance-enhancing behaviours after changes to role and responsibilities, and the convention in project management practice that favours the evaluation of project managers' performance based on project efficiency, may influence autonomous project manager to favour role and responsibilities

standardisation and control that enhances project efficiency. Conversely, project effectiveness requires role flexibility, which encompasses completing set of project tasks that extend beyond initially communicated project requirements, and the actualisation of these completion requirements may extend the project completion time but ultimately enhance the sponsoring organisation's financial performance (Kalmanovich-Cohen et al., 2018).

5.3 General Contributions to Research

The findings from the present thesis offer four significant contributions to the research. First, the studies conducted here deepen our understanding of the specific HPWPs relevant to a project-oriented environment, and tested their impact across several industries and cultural settings. Second, the studies relied on rigorous quantitative design and analytical approaches that advance and provide sound recommendations to further strategic human resource management and project management research. Third, insights generated from these studies enhance our understanding of the motivational states, behaviours, and contextual factors that link project-oriented HRM practices to project outcomes, and how they are interrelated. Fourth, the studies highlight the importance of appraising project success through distinct efficiency and effectiveness criteria.

With respect to the first contribution, most of the research on HPWPs has focused on organisational outcomes in manufacturing organisations operating in Western economies. The studies that comprise this thesis examined the unique contribution of specific HPWPs to project success among project teams in knowledge-intensive organisations across several industries, operating in New Zealand and Sub-Saharan African organisations. The studies identified specific HPWPs that directly contribute to the achievement of project efficiency outcomes and strategic

project effectiveness outcomes. The results suggest that teamwork and recognition are essential to ensuring project efficiency and effectiveness. Further, continuous feedback and external stakeholder clarity help achieve project efficiency criteria.

Extending the relationship to the individual and project team levels in a unique non-Western context enriched our understanding on the role of project environment in the non-Western context play in the convergence of specific core HPWPs that drive project performance. Insights from the findings generated in Study 2 suggest cross-national convergence of HPWPs and project success occurs when the Western and non-Western organisations share the following approaches and resources: a standardised HRM systems implementation approach, highly skilled project team members with advanced educational degrees and internationally recognised project management methodology and framework such as PMI and Prince 2 including technology. Hence, equal access to knowledge and resources created convergence of perceived effectiveness of HPWPs and project success in both Western and non-Western organisations. Project team members from both contexts have a shared agreement on specific HPWPs relevant to the project including the mutual understanding of project efficiency and project effectiveness constructs.

Concerning the second contribution, the studies exemplify a rigorous quantitative approach to strategic human resource management research. The studies are among the first to test the relationship of HPWPs to project success through a moderation-mediation model, using integrated multi-disciplinary frameworks including a multilevel structural equation modelling which separates individual within-level effects from the team between-level effects and generates more accurate insight on the relationship among the focal variables by segregating the results. Moreover, the studies relied on a three-wave research design to mitigate biases that arise in survey research. Lastly, the analyses in a couple of the teams incorporated input from external

stakeholders on project success, to substantiate team members' project success ratings, a practice that should be carried over to subsequent research. Therefore, the current study extends the literature and uses the quantitative, methodological and theoretical rigour of organisation behaviour discipline seldom used in project management discipline to explain project-oriented outcomes in contemporary organisations.

The third contribution pertains to the elucidation of motivational mechanism, behaviours, and contextual factors that explain the relationships between project-oriented HRM practices and project outcomes, and their specific dynamics. Findings from Study 1 indicate that HPWPs, namely training, feedback, and teamwork, influence feelings of satisfaction with and personal fulfilment about project work, and this motivates team members to enact proactive behaviours. In turn, these behaviours positively influence project effectiveness outcomes. Therefore, the current research clarifies the contribution of HPWPs to the psychological experience of engagement during project work, and its positive behavioural outcomes, consistent with Kahn's (1990) conceptualisation of employee engagement. In this context, training, continuous feedback, and teamwork contribute to project team members' experience of psychological meaningfulness, safety, and availability. These employee outcomes are motivational mechanism that connect HPWPs to project effectiveness.

Psychological meaningfulness is the perception that one's contribution is valued and useful, which in turn results in individuals deploying cognitive, emotional and physical energies into task execution (Kahn, 1990). Psychological safety reflects the perception of the ability to provide input in a team without fear of repercussions, namely threats to self-esteem, career, or status (May, Gilson, & Harter, 2004). Finally, psychological availability represents the belief that one has the physical, emotional or cognitive resources to deploy towards task execution at work

(Kahn, 1990). Findings from Study 1 corroborate that these psychological experiences prompted team members to complete high-quality projects that met project effectiveness criteria, buttressing the use of HPWPs that enable formal and informal knowledge sharing such as training, continuous feedback and teamwork as strategic tools to fostering team members' engagement toward project success.

In addition to the HPWPs investigated in Study 1, Study 2 also examined the influence of external stakeholder clarity and project clarity on project success. External stakeholder clarity positively influenced project efficiency, and project clarity mediated the relationship of several HPWPs, external stakeholder clarity, and project efficiency, establishing its role as one of the "black boxes of HRM" linking HPWPs to project success. Further, project autonomy moderated the mediated effects of training, recognition, teamwork and external stakeholder clarity on project efficiency via project clarity. These findings suggest a project manager who enjoys autonomy is in a position to implement initiatives that enhance the capability and motivation of project teams, toward completion on time, budget and quality (Gemunden et al., 2005). In summary, the studies that comprise this thesis empirically tested several project factors conceptually proposed in the literature to influence project success, namely stakeholder requirements and role clarity (Geraldi et al., 2011). Therefore, the present research contributed to important insights regarding the impact of HPWPs and project context on project outcomes in global knowledge-intensive organisations.

Finally and as a fourth contribution, the present research is among the first to empirically test project practices and dynamics in relation to distinct efficiency and effectiveness criteria. Studies that appraise project success have primarily relied on efficiency criteria, namely the completion of projects within cost, time and quality (Davis, 2016; Ika, 2009). While scholars

have called for a conceptualisation of project success that encompasses effectiveness criteria (e.g., achievement of strategic objectives, stakeholder satisfaction, profitability), very few empirical studies have measured project success along efficiency and effectiveness criteria (Davis, 2016; Serrador & Turner, 2015; McLeod et al., 2012, Scott-Young & Samson, 2008). Insights from the present studies suggest that project practices, contextual variables and their interplay uniquely influence efficiency and effectiveness criteria.

5.4 Limitations and directions for future research

Study 1 and 2 findings showed mixed results regarding the association of HPWPs and project efficiency and effectiveness. For instance, while the direct relationships between training, continuous feedback, and project effectiveness were not statistically significant in both studies, other significant and non-significant findings were inconsistent between Study 1 and Study 2. For example, teamwork was positively and significantly associated with project efficiency in Study 1 but not in Study 2. The direct associations between recognition, continuous feedback, and project efficiency and project effectiveness were not significant in Study 1 but were significant in Study 2.

The mixed results may be due factors unique to the teams, participating organisations, and industries where the projects were implemented. For instance, some of the project managers in the current sample implemented HPWPs without a structured approach. The project managers did not have set objectives and clear understanding of the reasons some of the HPWPs were implemented. In both western and non-western contexts, insights from the study sample suggests HR Departments are not involved in project-oriented HRM, and project managers do not have the skills and resources to implement project performance-enhancing HPWPs. In project management practice, the terminologies of HPWPs or HRM practices are rarely used,

and this may have affected the responses collated. Concisely, project teams in this study implemented the focal HPWPs. However, they did not know those practices implemented are HRM practices and did not deliberately intend for the practices to be adopted as part of the strategy to enhance project success.

The mixed results reported in Study 1 and 2 may also be the upshot of individual differences unaccounted for. For example, Study 1 did not measure trait engagement which is the personality predisposition to state and behavioural engagement (Macey & Schneider, 2008). It is expected that project team members' dispositional factors and learning agility would play a significant role in the perception of HPWPs and their effectiveness (Rotolo et al., 2017). At the managerial level, project managers' experience and competence implementing HPWPs and sustaining the dialogue to ensure clarity of external stakeholder needs were not captured in Study 2 and may have elucidated the findings (Gallagher, Mazur, & Ashkanasy, 2015; Unger-Aviram et al., 2013). Future studies should look into other intrapersonal and contextual variables that explain the associations between HPWPs and project success.

The scales such as project clarity, project autonomy and external stakeholder clarity created in Study 2 were not validated. Further, the number of items in the new scales (project autonomy, project clarity and external stakeholder clarity) created in Study 2 were small, and may not capture all the latent factors of the operationalised constructs. For instance, the three-item scale of project autonomy was not validated and did not account for resource, structural and social autonomy. This may explain why the interplay of HPWPs and project autonomy on project clarity were not statistically significant. Future research should refine and validate the measures to enhance the validity of each newly created constructs.

The strict participation requirements (e.g. multiple respondents in each project team must participate including the project manager) means fewer organisations had the time and resources to participate in the research project resulting in small sample size. Subsequently, the small sample size may have constrained the effect sizes. Future studies need to retest these associations using larger samples.

Studies 1 and 2 used project team perceptions of success as an outcome variable. While the researcher also endeavoured to obtain project success data from external stakeholders to ascertain if there was a shared perception of project success between the internal and external stakeholders, this was only possible in two of the teams. While the findings suggest internal and external stakeholders had a shared perception of project success rate,future research needs to use external stakeholders' appraisal of project success across all teams.

Finally, the two studies did not examine large-scale organisational transformational projects. The projects examined in this thesis can be categorised as small projects affecting a small section of the organisation, client, or a specific business unit (Jasinska, 2017). Large-scale or megaprojects require huge amount of financial resources and tend to involve large project teams comprising members that are located in different geographical regions (i.e., virtual project teams). In virtual project teams, the project manager leverages on technology to implement HPWPs. Research suggests quality of collaboration and project team members experience differs in traditional and virtual project teams as technological integration, and culture issues may buffer positive project team members experience including the rate of knowledge sharing (Hamersly & Land, 2015). Future research needs to explore if the findings of the current research can be replicated to larger-scale projects linked to transformational organisational changes (Gallagher et al., 2015).

5.5 Implications for Practice

Both studies that comprise this thesis make substantive contributions to enterprise project management in global organisations. First, organisations may take a structured approach to assessing project-oriented training needs and implementing training and development activities. Second, organisations may institutionalise project-oriented recognition programmes to enhance team motivation. Third, organisations may leverage the implementation of HPWPs to create an engaged work environment, and monitor motivational fluctuations throughout the project. Fourth, insights from the studies suggest that convening project design workshops at inception, and incorporating external stakeholders' input in milestone meetings, may enhance project clarity and efficiency. Finally, the findings highlight conditions under which the enhancement of project manager capabilities may improve project clarity and efficiency.

The first implication is that organisations can take a structured approach to project-oriented training and development activities. The studies' results indicate an indirect relationship of training and development to both project efficiency and effectiveness via project clarity and employee engagement. These findings suggest that project-specific training ensures clarity of roles and responsibilities and elicits positive attitudes and behaviours that support project success. As part of the annual training plan, organisations might conduct proactive training need analysis including an outline of competency requirements for proposed projects in a given year. The integration of project-oriented training needs into annual organisational training needs assessment creates alignment between project and organisational strategies. Organisations are encouraged to train all project team members about specific project requirements before commencing major projects.

Concerning the second implication, findings from the studies indicate that project team members who were acknowledged for their performance and valued team behaviours completed projects that met efficiency and effectiveness criteria. The findings suggest that recognition has a direct impact on project efficiency and effectiveness. As a motivational enhancement strategy, organisations may institutionalise a project recognition programme as a form of appreciation for helping the organisation achieve its goals. Recognition enhances the intrinsic motivation needed for affective satisfaction with project work and innovative behaviours (Montani et al., 2017).

Regarding the third contribution, study findings indicate that HPWPs can create a work environment where project teams felt engaged and empowered to enact proactive behaviours that impact project effectiveness. Findings from this research suggest that training, continuous feedback and teamwork elicit the feeling of satisfaction with project work, and these feelings prompt the enactment of engaged behaviours that facilitate the completion of high-quality projects. HPWPs facilitate knowledge acquisition that supports the achievement of the project team shared mental model. The mutual understanding of project goals and behavioural expectations ensure team members forge an emotional attachment with project work and motivate them to exert energy and behaviours needed for effective project performance (Hong et al., 2004; Gonzalez-Mules et al., 2016). In sum, HPWPs signify support and resources provided by the organisation and, if perceived positively by team members, help foster employee engagement and performance (Salanova et al., 2005).

As means of enhancing clarity of external stakeholder needs and requirements, project managers are encouraged to organise a stakeholder strategy session at the beginning of projects to ensure all stakeholders have a shared understanding of project goals. Further, the involvement of all project stakeholders in project meetings, workshops and design reviews are desirable.

Insights from current findings suggest external stakeholder clarity has an impact on ensuring project clarity and efficiency. Early and ongoing stakeholder involvement provides a forum for knowledge sharing useful for achieving a precise definition of team roles and responsibilities including ensuring prompt communication of changes in roles and responsibilities. Further, continuous stakeholder involvement throughout the project lifecycle facilitates the project team flexibility and behavioural adaptation needed for project team innovation, which is an essential antecedent of project effectiveness (Hanfield et al., 2015).

Regarding the final contribution, the current studies imply that the negative impact of project demands (e.g. delays in project decisions, time pressure, high workload and project role ambiguity) can be mitigated if organisations grant the project manager authority to modify project goals and resources to address these demands. Project initiatives involve multiple decisions being made daily and their success is dependent on the extent the sponsoring organisations decentralise the decision making processes and empower the project manager (Vera, Nemanich, Velez-Castrillon & Werner, 2016). Insights from this research point to the fact that organisations may invest in leadership development initiatives for stronger project leadership and enhanced decision-making quality. During times of uncertainty, the competent, autonomous project leader can motivate the project team through defining and communicating timely explicit roles and responsibilities to project stakeholders to enhance project efficiency (Martinsuo & Lehtonen, 2009).

The findings from Study 2 denote that an autonomous project leader can facilitate knowledge acquisition and optimise the team information processing and enhances decision making during project delivery. Delays in project team decision-making may result in team member demotivation, and undercut knowledge sharing and coordination essential to project

clarity and operational efficiency (Chen et al., 2015). While project autonomy benefits operational decision-making it may not benefit the long-term view strategic decision making needed to achieve project effectiveness.

The time perspective concerning the time it takes for project benefits realisation may explain why team processes aimed at enhancing capacity for operational decision making such as project autonomy may not improve the team processes for the increasing capacity for strategic decision-making. Investment in leadership development initiatives would provide necessary competencies needed by the project managers to increase the breadth and quality of strategic project decisions for project effectiveness (Van Riel, Semeijn, Hammedi, & Henseler, 2011).

5.6 Conclusion

Project success is an important outcome germane to both profit and non-profit organisations. This is because the two organisational types use projects to implement change that brings sustainable development that enhances the livelihood of billions of citizens in both developed and developing countries. However, accounts from diverse organisational and national contexts were indicative of low project success rate caused by people management factors which threaten global competitiveness. Hence, investigating the role played by practices, capabilities, attitudes, behaviours and context as a tool for project success enhancement is in order. The present findings indicate that specific high-performance work practices and external stakeholder clarity help directly and indirectly via employee engagement and project clarity in managing project talent and driving them to complete the project efficiently and effectively. Findings further support that these practices help lessen complexities that plagued most projects. Hence, current research builds empirical evidence that strategy for project success enhancement is about focusing on intensifying people abilities and motivation.

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6.0 References Chapter I

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Appendix A: Frequencies and Percentages for Demographic Characteristics of Participants for Study 1 and 2

Table 8: Frequencies and Percentages for Demographic Characteristics of Participants for Study 1

Variable	N	%
Gender		
Male	109	69
Female	47	29.7
Others	2.00	1.3
Age		
20-29	10.00	7.5
30-39	32.00	24
40-49	56.00	37.6
50-59	23.00	19.5
60-70	15.00	11.3
Missing	33.00	
Education		
High School	22.00	14
Associate Degree	9.00	5.7
University Degree	96.00	61.1
Postgraduate Degree	30.00	19.1
Job Type		
Full-time	137.00	86.7
Part-time	7.00	4.4
Fixed-term	7.00	4.4
Casual	7.00	4.4
Project Role		
Team members	137.00	87
Project Manager	32.00	13
Tenure (years)		
0-9.99	93.00	60
10-19.99	39.00	25
20-29.99	16.00	10
30-39.99	5.00	3
40-49.99	3.00	2
Missing	13.00	
Industry		
Banking	5.00	15.15
Government	4.00	12.12
Education	2.00	6.06
Information Technology	9.00	27.27
Construction	2.00	6.06
Media and Broadcasting	5.00	15.15
Research and Development	1.00	3.03
Transportation	5.00	15.15

Table 9: Frequencies and Percentages for Demographic Characteristics of Participants for Study 2

Variable	N	%
Gender		
Male	131	78.4
Female	35	21
Others	1.00	0.6
Missing	8.00	
Age		
20-29	15.00	9.4
30-39	58.00	36.2
40-49	55.00	34.4
50-59	26.00	16.3
60-70	6.00	3.7
Missing	15.00	
Education		
High School	8.00	4.8
Associate Degree	9.00	5.4
University Degree	74.00	44.3
Postgraduate Degree	76.00	45.5
Missing	8.00	
Job Type		
Full-time	159.00	95.2
Part-time	3.00	1.8
Fixed-term	4.00	2.4
Casual	1.00	0.6
Missing	8.00	
Project Role		
Team members	103.00	60.3
Project Manager	65.00	38.7
Missing	7.00	
Tenure (years)		
0-9.99	92.00	55.4
10-19.99	56.00	33.8
20-29.99	16.00	9.6
30-39.99	2.00	1.2
Missing	9.00	
Industry		
Aluminium	12.00	6.9
Banking	37.00	21.1
Cement	1.00	0.6
Consulting	10.00	5.7
Electronics	6.00	3.4

Energy	2.00	15.15
FMCG	12.00	6.9
Government	6.00	3.4
International Development	47.00	27
High-Tech Manufacturing	6.00	3.4
Maritime	24.00	13.7
Oil/Gas	6.00	3.4
Pharmaceuticals	6.00	3.4
Country		
Benin	2.00	1.1
Burundi	2.00	1.1
Cameroon	4.00	2.3
Comoros	2.00	1.1
Nigeria	87.00	50
New Zealand	66.00	38
Uganda	2.00	1.1
Kenya	4.00	2.3
Tanzania	2.00	1.1
Zambia	4.00	2.3

Appendix B: High-performance work practices (HPWPs), project role, project duration and demographic information online questionnaire (study 1, Time 1)

Q1 INFORMATION AND CONSENT

You are invited to take part in a study, examining the factors that contribute to project success in New Zealand organisations. This project is being carried out by Mr Tosin Olateju as part of the requirements for a Ph.D. in Industrial/Organisational Psychology, under the supervision of Dr Joana Kuntz and Associate Professor Venkataraman Nilakant. **Your participation requires the completion of 3 brief online questionnaires, administered over a period of 3 months** (1 month separating the questionnaires). You will have the opportunity to add information to provide context to your responses, or that you considered necessary and was not covered in the survey. Each survey will take between **10-15 minutes to complete**. Please note that there are no right or wrong responses – we are simply interested in your perspective.

The link below will take you to an external online survey site. The responses are recorded on a university-based server. **The survey is completely confidential. Your responses will be assigned individual codes so that data collected over time can be matched**. **Participants who complete all three surveys, and choose to provide their contact email, are eligible to be in a draw to win one of three $400 supermarket vouchers tenable at New World Supermarkets**. If you wish to be considered for the draw, please click on the link that will redirect you to a new page. This guarantees that personal information is recorded in a separate file, detached from your responses.

The University of Canterbury's Human Ethics Committee has approved this research. The data you provide will be kept ***strictly confidential*** and will not be disclosed to anyone. Please note that the Ph.D. is a public document, the results of this research may be published in academic journals or conference proceedings. The thesis and any publications generated from this study will only discuss group-based results and will not mention specific individual responses. The information you provide will not be linked back to you or your organisation in any way. Your organisation will receive a final research report which will include only summarised data, and no

staff member will see your individual ratings.

We hope to have you on board. Please do not hesitate to contact us for further information,

Mr. Tosin Olateju(adekunle.olateju@pg.canterbury.ac.nz) Ph. 03 3667 001 ext 3407

Dr Joana Kuntz (joana.kuntz@canterbury.ac.nz) Ph. 03 3642 987 ext 3635

If you have any other comments or concerns, you may contact: The Chair UC Human Ethics Committee University of Canterbury Private Bag 4800, CHRISTCHURCH Email: human-ethics@canterbury.ac.nz **By clicking on the link below, it will be understood that you have consented to participate in the project and that you agree to the publication of the results of the project with the understanding that anonymity will be preserved.**

To participate, just click the link below.

Q48 You have been invited to take part in this study because you served as a member/manager in XXX project. This survey examines which and how workplace practices contribute to project success. Please feel free to skip questions that are not applicable to you or the project.

Q2 Did you hold a supervisory/managerial position during the development or implementation of Project xxxxx?

- ○ Yes (1)
- ○ No (2)

Q18 Comments regarding your role in the project

_____

_____

_____

_____

_____

Q7 At the commencement of Project xxxxx, the proposed completion time was (In months)

_____

Q6 The actual time spent to complete Project xxxxxx was (In months)

_____

Q12 Below are some statements about career and professional development in your organisation. Please indicate your level of agreement with each statement

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
When people start a new project here, they are given enough guidance and training. (1)	○	○	○	○	○
There is a commitment to ongoing training and development of staff (2)	○	○	○	○	○
The training and development I've received have improved my performance (3)	○	○	○	○	○

Q19 Comments

_____

Q17 Below are some statements about rewards and benefits in your organisation. Please indicate your level of agreement with each statement

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
The rewards I receive from this organization are fair (1)	○	○	○	○	○
This organisation fulfils its obligations to me (2)	○	○	○	○	○
I am satisfied with the income I receive (3)	○	○	○	○	○
I am happy with the benefits I receive (super, leave, etc.) (4)	○	○	○	○	○

Q20 Comments

_____

_____

_____

_____

_____

Q17 Below are some statements about recognition in your team/organisation. Please indicate your level of agreement with each statement

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
When I do a good job, my colleagues regularly show their appreciation (3)	○	○	○	○	○
In the project team, supervisors tangibly recognize my efforts in different ways (4)	○	○	○	○	○
In the project team, supervisors regularly congratulate me in recognition of my efforts (5)	○	○	○	○	○

Q21 Comments

_____

_____

_____

_____

_____

Q24 Below are some statements about feedback practices in your project team. Please indicate your level of agreement with each statement

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Project XXXXX performance plan gave a clear idea of what was expected of me to meet project goals. (7)	○	○	○	○	○
My manager and I updated my goals as project goals change (9)	○	○	○	○	○
The ongoing feedback during the project performance cycle gave an accurate evaluation of how I was performing against planned performance (10)	○	○	○	○	○
During the project cycle my areas for improvement were clearly pointed out to me (11)	○	○	○	○	○

Q22 Comments

_____

_____

Q30 Below are some statements about teamwork practices in the project team. Please indicate your level of agreement with each statement My teammates and I...

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
provided each other with useful information that makes work progress (4)	○	○	○	○	○
shared knowledge that promotes work progress (5)	○	○	○	○	○
understood each other when we talk about the work to be done (3)	○	○	○	○	○
shared resources that help perform tasks (1)	○	○	○	○	○
communicated our ideas to each other about the work to be done (6)	○	○	○	○	○
carried out our tasks at the appropriate moment (2)	○	○	○	○	○
make sure our tasks were completed on time (12)	○	○	○	○	○
make adjustments in order to meet deadlines (13)	○	○	○	○	○
make progress reports (14)	○	○	○	○	○
exchanged information on 'who does what' (15)	○	○	○	○	○

discussed work deadlines with each other (16)	○	○	○	○	○
Foresaw each others' needs without having to express them (17)	○	○	○	○	○
instinctively reorganised our tasks when changes were required (18)	○	○	○	○	○
have an implicit understanding of the assigned tasks (19)	○	○	○	○	○

Q36 What other HR practices not included in this survey are used in your project team and organisation?

_____

_____

_____

_____

_____

Q42 What suggestions do you have for the improvement of the HR system in your organisation so it better supports project success?

_____

_____

_____

_____

_____

Q51 Age (In years)

_____

Q49 Gender

- ○ Male (1)
- ○ Female (2)
- ○ Other (3) _____

Q50 What is the highest Educational level you have completed?

- ○ Primary Education (1)
- ○ High School (2)
- ○ Associate degree or trade certificate (3)
- ○ University/Polytechnic diploma or degree (4)
- ○ Postgraduate degree(Masters or PhD) (5)

Q51 How long have you worked with your present employer?(Years)

_____

Q52 What is your employment status?

- ○ Full time (1)
- ○ Part time (2)
- ○ Fixed term (3)
- ○ Casual (4)

Page Break

Q25 If you wish to, please leave any final comments that may provide context to your survey responses

_____

_____

Appendix C: Employee Engagement Online Questionnaire (Time 2)

Dear all,

Huge thanks to those that have already completed Survey 1. You are now invited to take part in Survey 2, which should take about 3 minutes to complete. This survey examines your general feelings, attitudes, and typical behaviours during the implementation of XXXXXXXX Project.

Please note that there are no right or wrong responses – we are simply interested in your viewpoint. If you have any comments or concerns, you may contact: Tosin ((03) 03 3667 001 ext. 94970 or +64224534321 or adekunle.olateju@pg.canterbury.ac.nz) or Dr. Joana Kuntz (joana.kuntz@canterbury.ac.nz).

If you would like to participate in the survey, please click the link below:

Below are some statements about your general feelings and attitudes during the implementation of First Bank ERP Implementation Project. Please indicate your level of agreement with each statement

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
I was energized by the work that I did. (1)	○	○	○	○	○
I was enthusiastic about my work. (2)	○	○	○	○	○
My work really interests me. (3)	○	○	○	○	○

The work that I did was satisfying to me. (4)	○	○	○	○	○
My work was personally fulfilling. (5)	○	○	○	○	○

Q5 Below are some statements about typical behaviours during the implementation of XXXXXX Project. Please indicate your level of agreement with each statement.

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
I often took extra initiative to get things done. (1)	○	○	○	○	○
I actively sought opportunities to contribute. (2)	○	○	○	○	○
I often put more effort into the job than is required to help the organisation succeed. (3)	○	○	○	○	○
I was innovative in my thoughts and actions. (4)	○	○	○	○	○
I was resilient to setbacks in my work. (5)	○	○	○	○	○
My expertise was relevant to a broad range of issues. (6)	○	○	○	○	○

I adjusted my behaviour to better serve the team. (7)	○	○	○	○	○
My work performance went beyond expectations. (8)	○	○	○	○	○
I added great value to the team. (9)	○	○	○	○	○

Appendix D: Project Success Online Questionnaire: (Study 1, Time 3)

Dear All,

We want to appreciate you for completing Surveys 1 and 2. You are invited to take part in the final survey. You will be asked to rate XXXX project success along a series of criteria. Please note that there are no right or wrong responses – we are simply interested in your perception. This survey should take no more than 3 minutes to complete. If you have any comments or concerns, you may contact: Tosin (*(03) 03 3667 001 ext. 3407 or 0224534321 or* adekunle.olateju@pg.canterbury.ac.nz*) or Dr. Joana Kuntz (joana.kuntz@canterbury.ac.nz)* If you would like to participate in the survey please click the link below:

Q2 The following statements relate to XXXX project. Please indicate to what extent you agree or disagree with each of the following statements.

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	Not Applicable (6)
XXXX project was successful in meeting project time goals (completion within planned timeframe) (1)	○	○	○	○	○	○
The Project was successful in meeting project budget goals (completion within planned budget) (2)	○	○	○	○	○	○
The project was successful in meeting scope and requirements goals (3)	○	○	○	○	○	○
The end users were satisfied with the project's results (4)	○	○	○	○	○	○
The project increases the shareholder's value of the organization (5)	○	○	○	○	○	○

The project generates profit/financial benefits (6)	○	○	○	○	○	○
The project provides the intended performance improvement (e.g. efficiency, engagement) (7)	○	○	○	○	○	○

Q8 Please note **three things** that contributed **positively** to this project

_____

_____

Q9 Please note **three things** that contributed **negatively** to this project

_____

_____

Q11 If you completed the three surveys, you are eligible to take part in the draw to win New World $400 supermarket voucher. If you wish to be considered for the draw, please click on the next button and you will be redirected to a new page where you will be asked to provide your contact details.

Q13 Email address or other contact information here

_____

_____

_____

End of Block: Default Question Block

Appendix E: High-Performance Work Practices (HPWPs), project clarity, project duration and demographic information Online Questionnaire (study 2, Time 1)

Start of Block: Default Question Block

INFORMATION AND CONSENT

You are invited to take part in a study, examining the factors that contribute to project success in Global organisations.You have been invited to take part in this study because you served as a team member/manager in xxxxxxxxxx Project. This study is being carried out by Mr. Tosin Olateju as part of the requirements for a Ph.D. in Industrial/Organisational Psychology, under the supervision of Dr. Joana Kuntz and Associate Professor Venkataraman Nilakant. **Your participation requires the completion of 3 brief online questionnaires, administered over a period of 3 months** (1 month separating the questionnaires). You will have the opportunity to add information to provide context to your responses, or that you considered necessary and was not covered in the survey. This survey will take between **10-15 minutes to complete**. Survey 2 and 3 will take **less than 5 minutes to complete.** Please note that there are no right or wrong responses – we are simply interested in your perspective.

The link below will take you to an external online survey site. The responses are recorded on a university-based server. **The survey is completely confidential. Your responses will be assigned individual codes so that data collected over time can be matched**.

The University of Canterbury's Human Ethics Committee has approved this research. The data you provide will be kept ***strictly confidential*** and will not be disclosed to anyone. Please note that the Ph.D. is a public document, the results of this research may be published in academic journals or conference proceedings. The thesis and any publications generated from this study will only discuss group-based results and will not mention specific individual responses. The information you provide will not be linked back to you or your organisation in any way. Your organisation will receive a final research report which will include only summarised data, and no staff member will see your individual ratings.

We hope to have you on board. Please do not hesitate to contact us for further information,
Mr. Tosin Olateju(adekunle.olateju@pg.canterbury.ac.nz) Ph. (+64) 22 453 4321
Dr Joana Kuntz (joana.kuntz@canterbury.ac.nz) Ph. (+64) 33642 987 ext 3635
If you have any other comments or concerns, you may contact: The Chair UC Human Ethics Committee University of Canterbury Private Bag 4800, CHRISTCHURCH Email:

human-ethics@canterbury.ac.nz **By clicking on the link below, it will be understood that you have consented to participate in the project and that you agree to the publication of the results of the project with the understanding that anonymity will be preserved.**
To participate, just click the link below.

Q48 You have been invited to take part in this study because you served as a team member/manager in xxxxxx Project. This survey examines which and how workplace practices contribute to project success. Please feel free to skip questions that are not applicable to you or the project.

Q2 Did you hold a supervisory/managerial position during the development or implementation of xxxxxxx Project?

- ○ Yes (1)
- ○ No (2)

Q18 Comments regarding your role in the project

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Q7 At the commencement of xxxxxxx Project, the proposed completion time was (In months)

_____

Q6 The actual time spent to complete the Project was (In months)

_____

Q12 Below are some statements about career and professional development in your organisation. Please indicate your level of agreement with each statement

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
When people start a new project here, they are given enough guidance and training. (1)	○	○	○	○	○
There is a commitment to ongoing training and development of staff (2)	○	○	○	○	○
The training and development I've received have improved my performance (3)	○	○	○	○	○

Q19 Comments

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Q24 Below are some statements about communication practices in the project team. Please indicate your level of agreement with each statement

	Strongly disagree (8)	Disagree (9)	Neutral (10)	Agree (11)	Strongly agree (12)
The roles and responsibilities of those involved in the project were clearly specified at the outset (1)	○	○	○	○	○
Changes to roles and responsibilities that occurred throughout the project were communicated in a clear and timely fashion (2)	○	○	○	○	○

Q20 Comments

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Q17 Below are some statements about recognition in your organisation. Please indicate your level of agreement with each statement

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
When I do a good job, my colleagues regularly show their appreciation (3)	○	○	○	○	○
In the project team, supervisors tangibly recognize my efforts in different ways (4)	○	○	○	○	○
In the project team, supervisors regularly congratulate me in recognition of my efforts (5)	○	○	○	○	○

Q21 Comments

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Q24 Below are some statements about performance feedback practices in the project team. Please indicate your level of agreement with each statement

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	I don't know (6)
xxxxxx Project management/performance plan gave a clear idea of what is expected of me to meet project objectives. (1)	○	○	○	○	○	○
My manager and I updated my goals as project goals change (2)	○	○	○	○	○	○
The ongoing feedback during the project cycle gave an accurate evaluation of how I am performing against planned performance expectation. (3)	○	○	○	○	○	○
During the project cycle, my areas for improvement were clearly pointed out to me (4)	○	○	○	○	○	○

Q22 Comments

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Q30 Below are some statements about teamwork practices in the project team. Please indicate your level of agreement with each statement My teammates and I...

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
communicated our ideas to each other about the work to be done (6)	○	○	○	○	○
carried out our tasks at the appropriate moment (2)	○	○	○	○	○
make sure our tasks are completed on time (12)	○	○	○	○	○
make adjustments in order to meet deadlines (13)	○	○	○	○	○
make progress reports (14)	○	○	○	○	○
exchanged information on ‘who does what’ (15)	○	○	○	○	○
discussed work deadlines with each other (16)	○	○	○	○	○
foresaw each others’ needs without having to express them (17)	○	○	○	○	○

Q36 What other HR/ team practices not included in this survey were used in your project team and organisation?

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Q42
What suggestions do you have for the improvement of the HR system in your organisation so it better supports project success?

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Q51 Age (In years)

_____

Q49 Gender

- ○ Male (1)
- ○ Female (2)
- ○ Other (3) _____

Q50 What is the highest Educational level you have completed?

- ○ Primary Education (1)
- ○ High School (2)
- ○ Associate degree or trade certificate (3)
- ○ University/Polytechnic diploma or degree (4)
- ○ Postgraduate degree(Masters or PhD) (5)

Q51 How long have you worked with your present employer?(Years)

_____

Q52 What is your employment status?

- ○ Full time (1)
- ○ Part time (2)
- ○ Fixed term (3)
- ○ Casual (4)

Q25 If you wish to, please leave any final comments that may provide context to your survey responses

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End of Block: Default Question Block

Appendix F: Project Autonomy Online Questionnaire (Study 2, Time 2)

UC UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Start of Block: Default Question Block

Q9
Dear all,

Huge thanks to those that have already completed Survey 1. You are now invited to take part in Survey 2, which should take about 2 minutes to complete.

This survey examines the decisiveness of the project manager during project implementation. Please note that there are no right or wrong responses – we are simply interested in your viewpoint. If you have any comments or concerns, you may contact: Tosin ((03) 03 3667 001 ext. 3407 or 0224534321 or adekunle.olateju@pg.canterbury.ac.nz) or Dr. Joana Kuntz (joana.kuntz@canterbury.ac.nz) If you would like to participate in the survey,

Please click the link below:

Q1 The following statements aim to assess the decision-making latitude of the project manager during the implementation of xxxx project. Please indicate to what extent you agree or disagree with each of the declarations.

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
The Project Manager had the authority to make operational decisions as needed (e.g., modifying	○	○	○	○	○

project goals) (1)					
The Project Manager had the freedom to autonomously make changes to project scope and goals as needed. (2)	○	○	○	○	○
The Project Manager had the freedom to independently reorganize or change project resources (staffing, funding) as needed. (3)	○	○	○	○	○

Q10 Comments

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Appendix G: Project Success and External Stakeholder Clarity Online Questionnaire

(Study 2, Time 3)

Start of Block: Default Question Block

Dear all,

We want to appreciate those that have already completed Surveys 1 and 2. You are invited to take part in the final survey. You will be asked to rate xxxxxxxxxxxxxxxxx Project success along a series of criteria. Please note that there are no right or wrong responses – we are simply interested in your perception. This survey should take no more than 3 minutes to complete. If you have any comments or concerns, you may contact: Tosin (*(03) 03 3667 001 ext. 3407 or 0224534321 or adekunle.olateju@pg.canterbury.ac.nz) or Dr. Joana Kuntz (joana.kuntz@canterbury.ac.nz)* If you would like to participate in the survey please click the link below:

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	Not Applicable (6)
Xxxxxxxxxxxxxxxxxxxxx Project was successful in meeting project time goals (completion within planned timeframe) (1)	○	○	○	○	○	○
The Project was successful in meeting project budget goals (completion within planned budget) (2)	○	○	○	○	○	○
The project was successful in meeting scope and requirements goals (3)	○	○	○	○	○	○
The end users were satisfied with the project's results (4)	○	○	○	○	○	○
The project increases the shareholder's value of the organization (5)	○	○	○	○	○	○
The project generates profit/financial benefits (6)	○	○	○	○	○	○
The project provides the intended performance improvement (e.g. efficiency, engagement) (7)	○	○	○	○	○	○

Q2 The following statements relate to xxxxxxxxxxxxxx Project. Please indicate to what extent you agree or disagree with each of the following statements.

Q10 Below are some statements that aim to assess the relationship and communication with the project external stakeholders. Please indicate your level of agreement with each statement

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
The project reporting format required by donors/sponsors was clear. (1)	○	○	○	○	○
External stakeholders understood their role in the project (2)	○	○	○	○	○
The project beneficiaries (e.g. end users, clients) were clear about the identification of needs and requirements (3)	○	○	○	○	○

Q8 Please note **three things** that contributed **positively** to this project

_____

_____

_____

Q9 Please note **three things** that contributed **negatively** to this project

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_____

End of Block: Default Question Block

Appendix H: Factor loadings Study 1 Questionnaires

Table 10: Factor Loadings for High-Performance Work Practices Scale

	Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
	Factor 1: Training and Development					
1	When people start a new project here, they are given enough guidance and training.	**.46**	.05	.02	.20	.09
2	There is a commitment to ongoing training and development of staff	**.81**	.05	.02	.05	-.02
3	The training and development I've received have improved my performance	**.64**	-.01	.05	-.05	.10
	Factor 2: Rewards					
1	The rewards I receive from this organization are fair	.01	**.86**	.05	.06	.08
2	This organisation fulfils its obligations to me	.12	**.76**	.14	-.05	-.11
3	I am satisfied with the income I receive	-.07	**.87**	-.06	.04	.02
4	I am happy with the benefits I receive (super, leave, etc.)	.25	**.44**	.04	-.06	-.03
	Factor 3: Teamwork					
	My teammates and I					
1	communicated our ideas to each other about the work to be done	.01	-.02	**.83**	-.03	-.02
2	carried out our tasks at the appropriate moment	.03	-.05	**.71**	.08	-.04
3	make sure our tasks are completed on time	.02	.01	**.81**	.07	-.10
4	make adjustments in order to meet deadlines	-.05	.08	**.65**	-.13	.15
5	make progress reports	-.06	.02	**.68**	.06	.01
6	exchanged information on 'who does what'	.09	.01	**.70**	.01	.03
7	discussed work deadlines with each other	.08	.01	**.69**	-.11	.09
8	foresaw each other's needs without having to express them	-.06	-0.04	**.67**	.10	.09
	Factor 4: Recognition					
1	When I do a good job, my colleagues regularly show their appreciation	.19	-.03	-.02	**.42**	.29
2	In the project team, supervisors tangibly recognize my efforts in different ways	.03	.01	.01	**.99**	-.02
3	In the project team, supervisors regularly congratulate me in recognition of my efforts	-.06	.15	.10	**.57**	.15
	Factor 5: Feedback					
1	The Project management/performance plan gave a clear idea of what is expected of me to meet project objectives.	-.04	.09	.11	.05	**.75**
2	The ongoing feedback during the project cycle gave an accurate evaluation of how I am performing against planned performance expectation.	.16	-.04	-.05	.01	**.66**

Table 11: Factor Loadings for Employee Engagement Scale

	Items	Factor 1	Factor 2	Factor 3
	Factor 1: State Engagement (Involvement)			
1	I was energized by the work that I did.	**0.92**	0.01	-0.01
2	I was enthusiastic about my work.	**0.75**	0.11	0.04
	Factor 2:State Engagement (Affective Satisfaction)			
1	The work that I did was very satisfying to me.	-0.01	**0.96**	-0.03
2	My work was personally fulfilling.	0.14	**0.77**	0.04
	Factor 3: Engagement Behaviour			
1	I took extra initiative to get things done.	0.14	-0.14	**0.76**
2	I actively sought opportunities to contribute.	0.03	0.01	**0.65**
3	I often put more effort into the job than is required to help the organization succeed.	-0.15	0.22	**0.65**
4	My work performances went beyond expectations.	-0.01	-0.02	**0.80**
5	I add great value to the group.	-0.01	0.05	**0.72**

Table 12: Factor Loadings for Project Success Scale

	Items	Factor 1	Factor 2
	Factor 1: Project Efficiency		
1	The project was successful in meeting project time goals	**0.88**	-0.07
2	The Project successful was in meeting project budget goals	**0.71**	-0.07
3	The project was successful in meeting scope and requirements goals	**0.68**	0.33
	Factor 2:Project Effectiveness		
1	The end users' were satisfied with the project's results	0.22	**0.73**
2	The project increases the shareholder value of the parent organization	-0.14	**0.83**
3	The project generates a profit/financial benefits	-0.11	**0.76**
4	The project provides the desired performance improvement	0.14	**0.72**

Table 13 : Overview of the model fit indices for Predictors, Mediators and the Outcome Variable

	χ2	**df**	**RMSEA**	**SRMR**	**CFI**	**TLI**
HPWPs	159.23	100	0.06	0.03	0.96	0.92
Employee Engagement	12.29	8	0.06	0.02	0.99	0.98
Project Success	13.94	8	0.07	0.02	0.99	0.96

Appendix I: Factor loadings Study 2 Questionnaires

Table 14: Factor Loadings for Project Autonomy, Project Clarity and External Stakeholder Clarity Scales

	Items	Factor 1	Factor 2	Factor 3
	Factor 1: Project Autonomy			
1	The Project Manager had the authority to make operational decisions as needed (e.g., modifying project goals)	**0.60**	0.17	0.05
2	The Project Manager had the freedom to autonomously make changes to project scope and goals as needed.	**1.02**	-0.05	-0.01
3	The Project Manager had the freedom to independently reorganize or change project resources(staffing, funding) as needed.	**0.49**	0.14	-0.02
	Factor 2:Project Clarity			
1	The roles and responsibilities of those involved in the project were clearly specified at the outset	0.01	**1.00**	-0.02
2	Changes to roles and responsibilities that occurred throughout the project were communicated in a clear and timely fashion	-0.03	**0.61**	0.11
	Factor 3: External Stakeholder Clarity			
1	The project reporting format required by donors/sponsors was clear.	-0.12	0.12	**0.51**
2	External stakeholders understood their role in the project	0.02	-0.04	**0.99**
3	The project beneficiaries (e.g. end users, clients) were clear about the identification of needs and requirements	0.01	0.09	**0.66**