LEADING THE INNOVATION PROCESS OVER TIME FOR EMPLOYEE WELL-BEING

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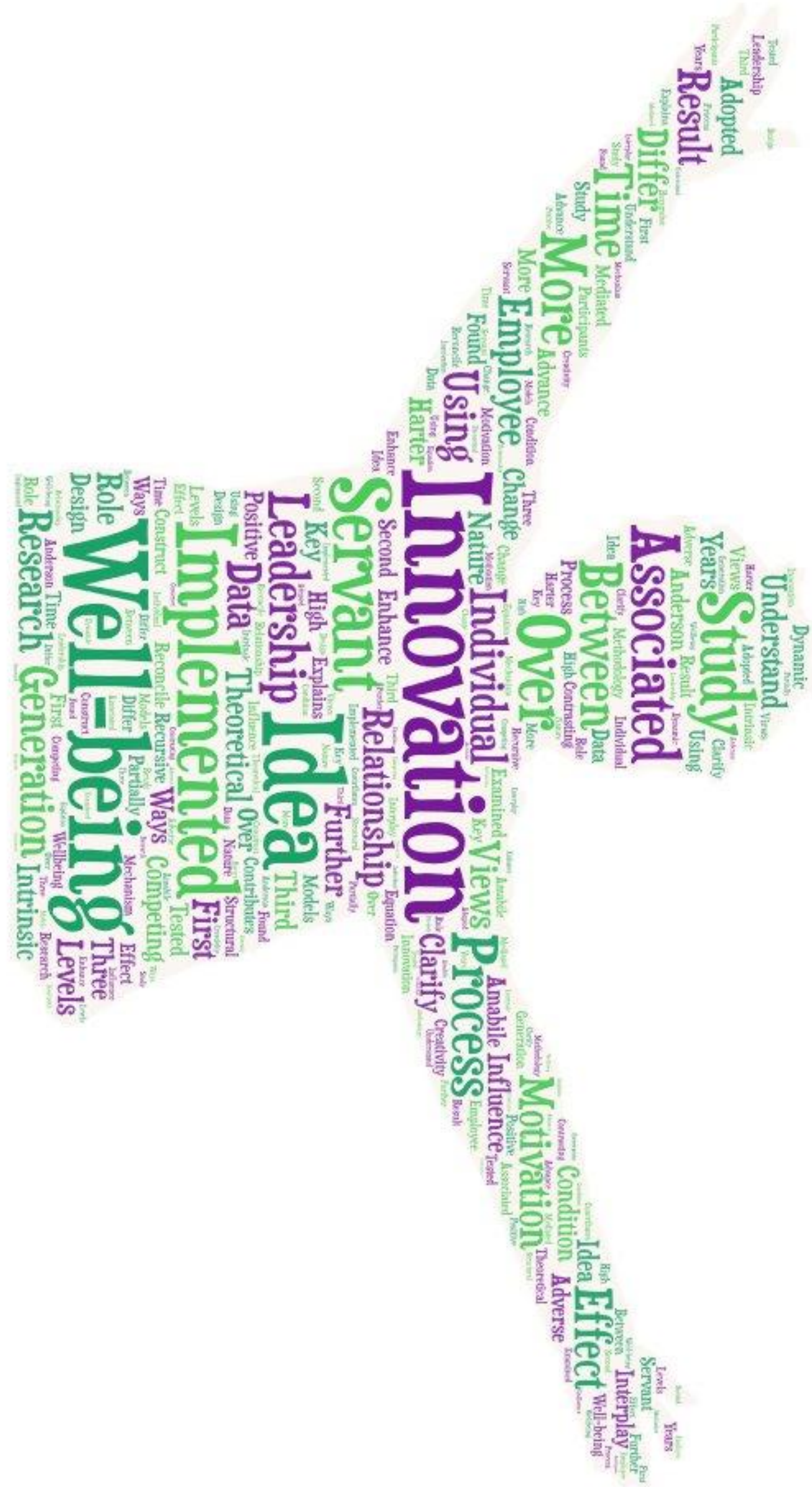
Innovation
Well-being
Implemented
Idea
Servant
Leadership
Associated
Study
Process
Motivation
Between
Over
Relationship
Individual
Employee
Research
Generation
Effect

Abstract

Background. The organisational benefits associated with innovation, defined as idea generation and implementation, are widely accepted. A problem in the research literature is the isolated understanding of competing views on the nature of the innovation process. Such competing conceptualisations make it more challenging to understand the influence of innovation on well-being – another valued construct. In response, drawing on the paradox and motivational research fields using three related accounts, this project's objective is to realign contrasting views of the innovation process and clarify how innovation and well-being are related.

Methodology. The three inter-linked studies drew on overlapping observations from collected data. This research adopted a 12-week intensive longitudinal design, with at least weekly data entry from more than 300 participants.

Results. Results suggest that the relationship between idea generation and implementation was reciprocal. Also, intrinsic motivation seemed to partially explain the effect that idea implementation had on idea generation. In addition, it was found that the relationship between innovation and well-being is moderated by servant leadership. Furthermore, the innovation synergy fully mediated the relationship between servant leadership and well-being changes.

Contributions. This dissertation has several theoretical implications. First, it clarifies that the innovation process is recursive. Second, findings advance intrinsic motivation as the central psychological mechanism anchoring the interplay of idea generation and implementation. Third, results motivate a resolution for theoretical misalignment between health impairment process and motivational theories in the association of innovation and well-being. Finally, the innovation process was presented as a crucial mechanism that explains the association of servant leadership with employee well-being.

Keywords: Innovation, well-being, servant leadership, intensive longitudinal design, dynamic structural equation modelling

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Declaration

I confirm that no portion of the work referred to in this thesis has been submitted in support of an application for another degree or qualification at this or any other university or institution of learning.

Dedication

This dissertation is dedicated to the loving memory of Justina Odinma Juwe. Although she always encouraged me to pursue my dreams, she was unable to see the completion of my doctoral studies. This is for her!

Madam Justina Odinma Juwe (1919 – 2006)

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Thesis summary

The word innovation is now common in most business settings or organisations. Most leaders are looking for ways for their employees to be innovative, to develop products that deliver competitive advantage, drive business efficiency and improve business processes. Indeed, more than ever, employees are expected to think fast and act. It is therefore surprising that despite the ubiquitous nature of innovation process, how its elements of idea generation and implementation relate to themselves is not well-understood theoretically. Whilst some scholars simply see idea generation as predicting implementation (e.g. Amabile, 1988), others argued that this relationship is reciprocal (e.g. Amabile & Pratt, 2016). This lack of clarity makes contentious how employee innovation could be enhanced and how it relates to other constructs. For instance, the relationship between innovation and well-being has been described as double-edged (Engelbrecht, 2014). Still, an explanation of the conditions for its benefits to employees is yet to be established. Research in innovation appears to have overlooked a vital element in constructing connections with other variables: the linkages amongst both aspects of innovation (Lewis & Smith, 2014). This research aims to focus on establishing these linkages, and thereafter, examine how servant leadership shapes innovation in influencing well-being changes.

In Chapter 1, an overview of the innovation literature is presented. The definition of idea generation or creativity and idea implementation were theoretically grounded. Discussions pertaining to a number of conceptualisations of the process are also presented. One of the most important theories in understanding innovation is the Componential Theory of Creativity and Innovation (Amabile, 1996), suggesting that idea generation influenced their implementation. As discussed in Chapter 3, this relationship was found to be reciprocal with intrinsic motivation providing rationalisation for the reverse idea implementation to generation linkage (Harter, 1978).

The resource body of knowledge presents the relationship between idea implementation and employee well-being as dependent on resource availability (Wallace et al., 2016), in which case, servant leadership was considered a source of resources. As such, when servant leadership was high, idea implementation was beneficial to well-being. The integration of the paradox and servant leadership theory formed bases for conceptualising how servant leadership shaped the synergy of idea

generation and implementation. This process was interfaced with the Conservation of Resource theory, suggesting that servant leadership controls the idea generation implementation interplay, and this interplay, in turn, changed well-being over time. Building on these discussions, Chapter 2 presents an overview of the empirical chapters as well as the methodological framework.

The first study, reported in Chapter 3, has a goal to understand and rationalise the nature of the relationship between idea generation and implementation. Researchers have long suggested, following the idea journey (Papachroni et al., 2015), that idea generation predicts idea implementation (for instance Amabile, 1988). Yet, significant influence in the innovation research field is the componential theory of creativity, which posits that idea generation has three key components: intrinsic motivation, domain-specific skills and creativity-relevant processes (Amabile, 1983). Furthermore, the effectance theory presents a framework suggesting that when ideas are implemented, bringing about valuable benefits or effects on the environment, individuals derive intrinsic motivation (Harter, 1978). So, because intrinsic motivation is a foundational component of creativity (Amabile, 1983), it is expected that idea implementation would also predict idea generation.

Keeping with the componential creativity and effectance theories, adopting the structural equation modelling perspective based on three waves of data collected from over 500 teachers, framed by mainly drawing on the effectance and componential creativity theories (Harter, 1978; Amabile, 1983), the reciprocity of idea generation and implementation was tested. In addition, explanation of intrinsic motivation in their interplay was also examined. Results suggested that: 1) the relationship between employee creativity and implementation is reciprocal, 2) idea generation reinforced idea generation only through idea implementation and vice-versa, and 3) the effect that an employee's implementation has on their creativity is partially explained by intrinsic motivation. The results concerning the feedback loop adds to the innovation literature as it supports propositions that the association of idea generation and implementation is reciprocal. Moreover, because idea generation and implementation involved different activities with differing requirements, yet they had similar objectives, their association would be perceived as a paradox. Within the context of individual innovativeness, the paradox theory provides a framework for the conceptualisation and enhancement of it

(Bledow et al., 2009b; Lewis & Smith, 2014; Smith & Lewis, 2018). This discussion was carried out extensively in Study C.

In Chapter 4, the second empirical study's goal was to understand under what condition idea implementation was positively associated with well-being. It further aimed to clarify how this condition occurred. Specifically, the study investigated the moderation of leadership on the linkage and how it occurred through both person and job resources. The theoretical review indicated there was limited consistency as to implementation's effect on employee well-being (Engelbrecht, 2014). Stress-oriented theorists suggested that this association is negative (e.g. Bakker, Demerouti & Euwema, 2005), whereas motivational researchers present a positive relationship (Harter, 1979). This study advances servant leadership as a moderator of this relationship, thereby resolving this theoretical tension. In explaining how this conditionality occurred, it presented a dual moderation process of self-efficacy and perceived autonomy.

A theory-driven model of the relationship between well-being, innovation, self-efficacy, and autonomy and servant leadership was tested using structural equation modelling on two data collection waves from more than 500 teachers in England (mean age = 41 years (SD = 6 years); 29% male). The result demonstrated that the presence of servant leadership was pivotal for the relationship between idea implementation and well-being to be beneficial. When servant leadership was low, idea implementation had an adverse effect on well-being. This conditional effect was partially mediated by perceived personal autonomy and self-efficacy. Amongst other contributions, situating servant leadership as a condition for idea implementation to influence well-being positively, resolved the theoretical tension between stress and motivational theories in the innovation well-being association. Further, because self-efficacy and autonomy were controls (Karasek, 1979), the findings have implication for the Job Demand–Control–Support theory. The outcomes indicated that social support directly and through control, shapes the effect demand has on employee well-being. Thus, presenting evidence on how variables are structured in the theory.

The study reported in Chapter 5 adopts a 12-week intensive longitudinal design (77 days), with at least one weekly data entry from more than 300 teachers (mean age = 39 years (SD = 6 years); 31% male). Using dynamic structural equation model and latent change score model, innovativeness was tested as an explanation of how servant

leadership predicts changes in well-being over time. Findings again highlighted the reciprocity of the idea generation and implementation relationship. In addition, it showed that the extent to which individuals implemented their ideas fully mediated the relationship between servant leadership and improved well-being. Put another way, results highlighted how servant leadership stances shaped innovation synergy, thereby boosting both idea generation and implementation. Importantly, it lends support to the positive spiral proposition with the conservation of resource theory and advances innovation as an alternative avenue that leaders could explore in influencing changes to their employee well-being.

The results of the three empirical investigations were summarised and integrated in Chapter 6. Viewed together, the relationship between idea generation and implementation is reciprocal. In other words, aspects of innovation mutually reinforce themselves. Furthermore, it is evident that servant leadership is necessary for innovation to have a positive effect on well-being.

A strong point of this dissertation is that it adopted shortitudinal design, so most studies could extract trait-like versions of constructs from their temporal changes. This is particularly useful for constructs like idea generation and implementation as individuals could be naturally seen as more innovative than others. Furthermore, this enabled the exploitation of advanced analytics methods in answering the complex research questions this project set out to resolve. Amongst these was the use of dynamic structural equation modelling in examining how servant leadership influenced changes in employee well-being through its boosting of the interplay between idea generation and implementation. Helpfully, data collection methods of this nature are becoming less problematic with technological advancement through data collection devices and online surveys (Hamaker et al., 2018; Watt, 1997).

The main contributions of this dissertation are that within the innovation process, the relationship between idea generation and implementation is reciprocal as explained by the paradox theory (Schad et al., 2018). Further research on innovation needs to adopt an integral framework in studying the process with emphasis on simultaneously enhancing both elements of the process. Following this approach, servant leadership appears to shape the innovation synergy which in turn influences changes in employee well-being. More broadly, this study brings considerable additions

to the resource fields of research, and presents a framework for aligning contextual support and control in influencing the effect of demand on well-being. This understanding brings an important addition to the Job Demand–Control–Support theory (Karasek, 1979). Moreover, it demonstrates the relative importance of personal control in relation to job control, which augments the Job Demand–Resource theory. Elsewhere, it supports the conservation of resource theory by presenting empirical evidence of the effect of reinforcement on well-being changes. Yet, it shows that servant leadership (social support) boosts this process. That said, these findings need to be viewed with caution due to the context of this research and the constructs under investigation.

The dissertation brings to the fore the need for servant leaders to ensure innovation is achieved without being determinental to employee well-being. Before now, the effect innovation had on well-being was not clear enough, as it could either positively influence well-being or otherwise. This study resolves this problem, raising the need for servant leadership to ensure this effect is desirable. As such, organisations looking to ensure that employees are innovative and have high levels of well-being need to put in place measures to track their employees' perception of leadership. If need be, leaders need training to become more follower-serving. Further, as idea implementation might not really be the fuzzy end of innovation, encouraging individuals to implement their ideas might be a way to engender their generating new ideas. So, in search for ways to improve employee innovation, leaders can encourage their employees to implement ideas as this holds promise in improving employee innovativeness. A managerial action framework was proposed to provide practitioners and the research community with valuable guidelines for improving employee innovativeness and well-being.

Chapter 1. General Introduction

Setting the Scene

Significant discoveries and achievements that advanced mankind over time have always originated from novel ideas. Innovation involves coming up with and implementing novel ideas in such a way that they significantly and beneficially affect the society. The importance of innovation today is more prominent in businesses. With the growing dynamism and complexity in the business environment (Potocnik & Anderson, 2016), innovation helps companies gain competitive advantage (Kaufman & Sternberg, 2010), efficiency (Chapman, Soosay & Kandampully, 2003) and could be critical to their survival (Zhou & Shalley, 2003). Work processes are now more complex and ever-evolving in such a way that employees are always required to think and act quickly, suggesting employees are more innovative. Employee innovation at work or innovativeness is seen as the process of an employee attempting to develop and introduce new and improved ways of doing things (Anderson, Potočnik, & Zhou, 2014).

The process of innovation entails at least two aspects: generating ideas – otherwise referred to as creativity or idea generation – and implementing them (Rosing, Bledow, Frese, Baytalskaya, Lascano & Farr, 2018). It is surprising to note that the nature of the process remains theoretically contentious. This is because whilst some researchers consider the process to be linear, where idea generation contributes directly to implementation (Amabile, 1996), others argue for a reciprocal relationship (Paulus, 2002; Amabile & Pratt, 2016). Establishing the causal order within this process, as to be furthered in the innovation process section, will be crucial to an understanding of how innovation can be enhanced and its potential benefits. This is because if the association of idea generation and implementation is reciprocal, it follows that the strength of the linkages between both sub-processes (or their synergy) could affect both aspects of innovation over time (Papachroni, Heracleous, & Paroutis, 2015), and the implication could influence other outcomes of innovation. As such, another way to improve the innovation process and its outcomes might be to strengthen this synergy. Given this importance, testing out the nature of the relationships amongst idea generation and implementation becomes a critical goal in this research project. This cornerstone objective is addressed in Study A.

Another problem with innovation research is how it connects with other constructs. Research on innovation has a long tradition that has established its value to groups and organisations (Rosing et al., 2018). An essential but under-acknowledged area is the importance and cost that innovation presents to individual employees (Anderson et al., 2014). Not a lot is known about how innovation

affects employees. As research has highlighted, the association of innovation and well-being presents an opportunity to resolve this problem. On its own, not only is employee well-being beneficial to employees as it considers individuals' overall evaluation of their life quality, but also its importance to organisations and national context are well-established (see Diener, Lucas & Oishi, 2018). Still, what is known about the linkage between innovation and employee well-being is contentious. As will be discussed in greater depth within the well-being section (page 12), some research streams have opined that innovation enhances well-being (e.g. Harter, 1978). Still, others argue to the contrary (e.g. Caplan, Cobb, & French, 1975). Indeed, van Dierendonck was emphatic in putting forward servant leadership as key to this association. He argued that since "innovation and employee well-being are given high priority […], leadership that is rooted in ethical and caring behaviour becomes of great importance" (van Dierendonck, 2011, p.1228), and yet research attention connecting servant leadership, grounded in caring and ethical behaviour, innovation and well-being is a rarity. Further, because there is limited clarity on the nature of innovation, understanding the conditions necessary for it to be beneficial to well-being, as well as how it contributes to well-being over time, are challenging to investigate. This raises three important theoretical problems: a) the limited understanding of the nature of the relationship between idea generation and implementation, b) the leadership conditions necessary for innovation to have a positive effect on well-being, and c) how innovation over time changes employee well-being.

In response, within the context of teachers in England, this dissertation draws on the resource-based and motivational perspective in resolving the problems mentioned above with the current understanding of the innovation process. Its goals are to theorise and test the temporal order of the innovation process, and while accounting for the role of servant leadership, understand how the process connects to well-being. Therefore, this thesis is positioned at the theoretical intersection of leadership, the innovation process and well-being as illustrated in Figure 1.1.

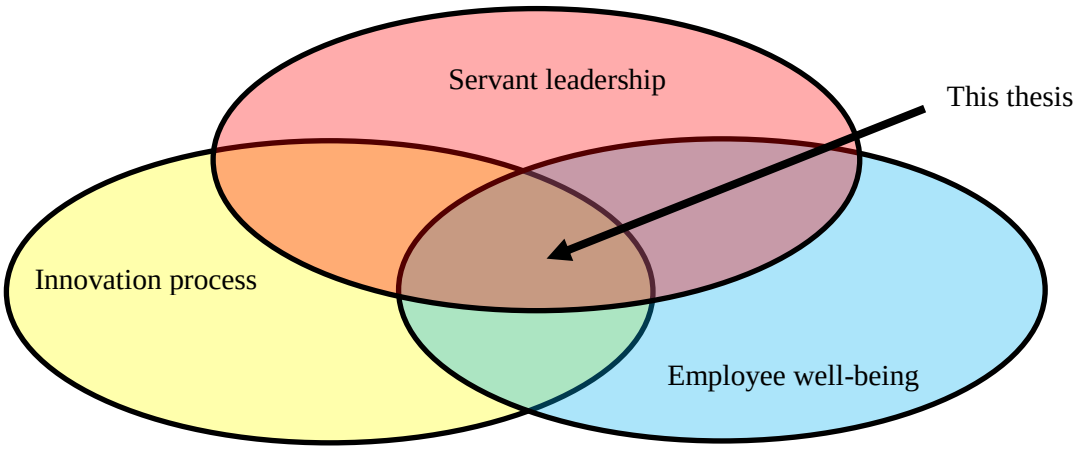


Figure 7.1: The situation of the thesis

In achieving these goals, this research project set out to accomplish three objectives using three independent yet related studies. The first study, A, presented in Chapter 3, aims not only to elucidate the nature of the relationship between elements of the innovation process but also to confirm the psychological explanation for the relationship. Within the innovation process, following the idea journey (Perry-Smith & Mannucci, 2017), the relationship between idea generation and implementation is seen as a linear forward causal one: generation predicts implementation (e.g. Amabile, 1988, 1996; Anderson et al., 2014). More recently, yet consistent with earlier arguments (e.g. Paulus, 2002), innovation scholars have realised the over-simplicity of this proposition and are now considering the association as reciprocal (e.g. Amabile & Pratt, 2016; Rosing et al., 2018). Thus, creativity influences idea implementation and vice-versa. On the one hand, this is because creativity provides the fundamental ideas to be implemented (Amabile, 1996; Perry-Smith & Mannucci, 2017). On the other hand, being that intrinsic motivation is central to creativity (Amabile, 1983), implementing ideas that improve individuals' environment might be a source of intrinsic motivation (White, 1959), suggesting that idea implementation could predict generation through intrinsic motivation. Up until now, though some researchers have pointed to this feedback possibility (see Amabile & Pratt, 2016), I am unaware of any study that has expressly tested it. Study A uses a cross-lagged panel analysis to test the association of idea generation and implementation being reciprocal, and the mediation of intrinsic motivation. This approach responds to theorists calling for an integrated theory of idea generation and implementation (e.g. Anderson et al., 2014; Hughes, Lee, Tian, Newman, & Legood, 2018; Rosing et al., 2018). Importantly, findings concerning the temporal order of idea generation and implementation contribute to the theoretical understanding of the innovation process. If the innovation process is reciprocal for instance, then it potentially accords with the paradoxical understanding of processes (Bledow, Frese, Anderson, Erez, & Farr, 2009b). This has implications on how other constructs connect with it (e.g. leadership (Anderson et al., 2014). As with paradoxical processes, connects with linkages are crucial to enhancing the process (Papachroni et al., 2015; Smith & Lewis, 2011). This is because the strength of the linkages or synergy ensures that idea generation and implementation are mutual and reinforce themselves over time, so constructs that can strengthen the synergy become critical to the innovation process (xxcit), a suggestion that is further investigated in Chapter 5.

The second study, B, presented in Chapter 4, introduces innovation as a predictor by examining when innovation favourably influences well-being amongst employees. As research interest in innovation continues to grow due to its importance to organisations, health impairment

researchers argue that idea implementation could pose potential threats to employee well-being due to its resource requirements, uncertainty and change-oriented nature (e.g. Caplan et al., 1975; Selye, 1976). The motivational scholars (e.g. Ryan & Deci, 2000; Harter, 1978) presented reasons and suggested that idea implementation could be beneficial to individuals' well-being, the assessment of their work or life satisfaction, happiness and the relative absence of anxiety (Michalos, 2008; Waterman, 1993). In other words, traditional research idea implementation could be either beneficial or harmful to employee well-being. This raises the need to understand the conditions necessary for employee idea implementation to positively contribute to their well-being. Employee resource availability seems to be the primary issue in understanding how innovation connects with well-being (Klein & Knight, 2005). In accordance with the Job Demand–Resource theory, when resource is high, innovation is likely to be positively associated with well-being, as employees generally have a positive sense of self-development and self-accomplishment (Bakker & Demerouti, 2007; Marslow, 1943; Schaufeli & Tari, 2014). Because servant leadership focuses on understanding and meeting their followers' needs (Greenleaf, 1977; Eva, Robin, Sendja, van Dierendonck, Liden, 2019), such leadership stance could be crucial to the linkage between idea implementation and well-being. As such, Study B examines the shaping role servant leadership could play in the association of idea implementation and well-being. Furthermore, it presents theoretical conditions though which servant leadership shapes the idea implementation to well-being association. By doing so, it speaks to the health impairment and motivational theoretical fields by positioning servant leadership as the critical condition. Furthermore, by exploring the conditions through which the servant leadership moderation occurs, suggestions are made to the Job Demand–Resource theory by presenting the differential effects of personal and job resource in predicting well-being.

The final Study, C, presented in Chapter 5, builds on the outcomes of Studies A and B, and positions the innovation synergy as a potential explanation of the linkage between servant leadership and well-being. Having confirmed the nature of the association of idea generation and implementation as reciprocal in Study A, as will be discussed, because individuals differ in the extent to which they implement their idea, it follows that the synergy between idea generation and implementation, together with its effects, will vary between individuals. These, as demonstrated in Chapter 5, have significant implications for well-being over time. Servant leadership could enhance this interplay as it supports individuals in implementing their ideas, thereby regulating the synergy. Following this argument, when servant leadership is low, the effect of idea generation on implementation is weaker. Whilst servant leadership potentially provides employees with resources required to implement their ideas, the role of servant leadership in this study differs from that of

Study B. Study C presents it as a regulator of the innovation in comparison to Study B, suggesting that it shapes the relationship between idea implementation and well-being. The servant leadership controlling the synergy over time accumulates resource in ways consistent with the Conservation of Resource theory, so it could change employee well-being (Hobfoll, 1989). In other words, drawing mainly on the paradox and conservation of resource streams of research, Study C advances the innovation process as an alternative explanation of the relationship between leadership and employee well-being changes over time. By showing that the innovation synergy changes well-being over time, it presents evidence supporting the accumulation tenets of the Conservation of Resource theory. Still, on the conservation of resource, results of this study potentially highlight the regulatory roles of servant leadership in resource accumulation, at least within the context of innovation. This implication has bearings on the paradox theory as it demonstrates how leadership could enhance the linkage between ambidextrous poles.

Taken together, the current thesis, adopting a longitudinal design, aims to enhance knowledge of the innovation process and how it relates to well-being and servant leadership. Before providing an overview of the empirical studies, an outline the theoretical foundation of this research is put forward. After understanding how the empirical studies contribute to the principal research goal, the philosophy and strategy guiding the current research project is discussed. Simply put, the rest of this chapter focuses on the theoretical foundation guiding the three empirical chapters. Chapter 2 provides an overview of empirical chapters, covering the positioning and contributions, and the research design covering the research philosophy and strategy.

Theoretical Foundations

This dissertation investigates the nature of the innovation process and how servant leadership behaviour shapes it over time in changing employees' well-being. Accordingly, the theoretical framework draws upon four primary bodies of knowledge and are shown in Table 1.1.

Table 7.1: Dissertation's theoretical framework

Aim	Section (key theories)
This project	
… investigates the nature of the innovation process	Innovation Process (Componential Model (Amabile 1983; 1996; Amabile & Pratt, 2016); Effectance (White, 1959; Harter, 1978); Paradox Theories (Cameron & Quinn, 1978; Schad, Lewis, & Smith, 2018; Smith & Lewis, 2011))

….. how servant leadership behaviour shapes it	Leadership (Servant leadership theory (Greenleaf, 1979))
…. over time	Research design (Foundations of Social Research (Crotty, 1998))
……in changing employee well-being	Well-being (Conservation of Resource (Hobfoll, 1989) and Job Demand-Resource Theories (Demerouti & Bakker, 2001))

Innovation Process

Anderson and his colleagues define creativity and innovation as "processes, outcomes, and products of attempts to develop and introduce new and improved ways of doing things" (Anderson et al., 2014, p.4). As they note, a key challenge within employee innovation body of knowledge is the interchangeable use of creativity and innovation, particularly when an individual generates and implements the idea. Furthermore, this body of knowledge seeing that idea generation and implementation are highly related (e.g. Janssen, 2003), consideration of innovation, rather than being considered as a process, has been typically seen as a construct (e.g. Bruce & West, 1995; de Jong & Den Hartog, 2007; de Jong & Den Hartog, 2010; Scott & Bruce, 1994; Spreitzer, 1995). Researchers agree that the innovation process has at least aspects of idea generation and implementation (Amabile, 1988; Amabile & Pratt, 2016; Anderson et al., 2014; Bledow, Frese, Anderson, Erez, & Farr, 2009a; Bledow et al., 2009b; Janssen, 2003; Papachroni et al., 2015). Idea generation or creativity is typified as the process of coming up with *useful intended* and novel ideas (Amabile, 1988; Hughes, Lee, Tian, Newman, & Legood, 2018). As Mom, van den Bosch and Volberda (2009) showed, idea generation involves activities that are open: searching, discovering, creating and experimenting.

In contrast to creativity, idea implementation involves processes when enacting creative ideas (Hughes et al., 2018). Implementing ideas even when carried out by the same individual, requires both personal and job-related resources such as confidence in their ability to implement their ideas, the freedom to alter their work process in order to implement their ideas, supportive management and finance (Amabile & Conti, 1999). This is because the activities of selecting, implementing, improving and refining existing ideas require considerable resource investment (Klein & Knight, 2005). By *resource,* as will be discussed, I mean entities that are important in their own right for people (Hobfoll, 2002). Considering that not all ideas generated will be implemented and that individuals differ in their resource availability, it follows that the extent to which ideas are

implemented will vary between individuals in ways consistent with the resource they have. This forms the basis for the discussions in Study C.

Still on the individuals' implementing their ideas, Amabile and Pratt's (2016) Dynamic Componential Framework of Innovation and Creativity is seen as a critical model when associating idea generation and implementation. Drawing on an earlier version (Amabile, 1983), the componential model posits that the central components of idea generation are domain-specific skills, creativity-relevant processes and intrinsic motivation. The model further suggests that creativity or idea generation influences idea implementation. This highly influential framework has however received limited empirical support (Anderson et al., 2014). As Anderson and his colleagues point out, of the three components, intrinsic motivation has received the most significant research backing (Anderson et al., 2014). This highlights the crucial role of motivation in the innovation literature. That said, mainstream research within the innovation literature opines that intrinsic motivation is mainly shaped by organisational factors (e.g. Amabile & Pratt, 2016; Anderson et al., 2014). Consequently, the more recent update of the componential model (Amabile & Pratt, 2016), argues the case for a bi-directional relationship through intrinsic motivation. This idea implementation occurs organisationally, such that other organisational factors (e.g. meaningful work and work orientation) enhance intrinsic motivation, which in turn contributes to idea generation (Amabile & Pratt, 2016). As far as I am aware, this model is yet to receive empirical support. Further, an important question that remains unanswered is the nature of the relationship when the same individual generates and implements the idea.

In Anderson et al.'s (2014) opinion, consistent with other scholars (Amabile, 1996; Hülsheger, Anderson, & Salgado, 2009; Janseen, 2003; Kanter, 1988; Patterson, 2000; Shalley & Zhou, 2008), idea generation is an initial stage and idea implementation is the final stage of the innovation process. This assumed that because creativity represents the underlying source for innovation (Amabile, 1988; Anderson et al., 2014), it follows that creativity occurs first, so the relationship is forward. Whilst the proposition remains valid, and indeed accords with the idea journey (Kanter, 1998; Perry-Smith & Mannucci, 2015), the simplicity of the proposition has been questioned by other researchers (Paulus, 2002; Bledow et al., 2009b; Sarooghi, Libaers, & Burkemper, 2015; Amabile & Pratt, 2016; Rosing et al., 2018). Studies A and C present more elaborate accounts on the nature of the associations within the innovation process. Explained by intrinsic motivation (White, 1959; Harter, 1978), it is arguable that in addition to the forward relationship between implementation and creativity, there is a feedback effect that implementation has on creativity. This is because intrinsic motivation could be because of individuals having a

beneficial effect on their environment (Harter, 1978). So, when individuals successfully implement their ideas, influencing the environment positively, they are likely to derive intrinsic motivation (White, 1959), which is a potentiator of idea generation (Amabile, 1983). Thus, the process could be reciprocal where idea generation and implementation contribute to each other.

Elsewhere, mindful of the different activities and antecedents of idea generation and implementation, the innovation process could be seen as ambidextrous (Rosing et al., 2011; Papachroni et al., 2015). This contrast, and sometimes contradictory sub-processes within the innovation, cause inherent tensions (Bledow et al., 2009a). In resolving these, theorists have put forward two key approaches: dichotomous and dialectic (Lewis & Smith, 2014). While the dichotomous streams of research focus on resolve tensions by separating poles of ambidexterity, the dialectic takes a more integrated stance by attempting to balance both aspects. Most of the literature pertaining to improving innovation or how innovation contents with other constructs have adopted the dichotomous, either/or perspective (Hushes et al., 2018). As earlier highlighted, should innovation be reciprocal, strengthening the linkages between idea generation and implementation or innovation synergy could improve both aspects.

This is because both constructs contribute to themselves and retain their characteristics afterwards and could be dialectic (Schad, Smith & Lewis 2018). The paradox theory, a useful extension of the ambidexterity theory, provides a theoretical framework for understanding this interplay and enhancing it. Paradoxes are defined as "contradictory yet interrelated elements (dualities) that exist simultaneously and persist over time; such elements seem logical when considered in isolation, but irrational, inconsistent, and absurd when juxtaposed" (Smith & Lewis, 2011, p.387). The paradox introduced by Cameron & Quinn (1988) as a framework to address complexities inherent in organisational life has gained popularity amongst scholars as organisations become increasingly complex and dynamic (Smith & Lewis, 2011). Underpinning the paradox theory is the acceptance of the dualities of coexisting tensions, where no compromise or single choice between them must be made, but ways are found to engage tensions, taking advantage of their pluralisms (Eisenhardt, 2000). This process of turning dualities into functional entities is theoretically referred to as synergy (Lewis, 2000; Smith & Lewis, 2011). The strength of the linkages between idea generation and implementation demonstrates the extent of this synergy (see Cao, Gedajlovic, & Zhang, 2009; Koryak, Lockett, Hayton, Nicolaou, & & Mole, 2018). Practically, the synergy describes the extent to which idea generation influences idea implementation and idea implementation impacts on idea generation. In this way, the stronger the linkages between idea

generation and implementation, the better the synergy. As such, in enhancing synergy, efforts need to focus on enhancing linkages (Parachroni et al., 2015; Schad, Lewis, & Smith, 2018).

Even though the reciprocity of the innovation process is yet to be tested, limited clarity on the nature of the innovation could have significant implication when considering how leadership contributes to it or how innovation influences other constructs. For instance, if the relationship is reciprocal, enhancing the synergy, the extent to which idea generation contributes to the implementation and vice-versa (Parachroni et al., 2015) could present a useful avenue for leadership to contribute to innovation. This is because with high levels of synergy, as will be discussed, more ideas would be implementation and vice-versa. As such, the level of synergy could also affect the outcome of the process, an argument that somewhat accords with the contextual approach to ambidexterity (Schad et al., 2018). That said, although arguments have been put forward that the association of idea generation and implementation is reciprocal (e.g. Amabile & Pratt, 2016; Paulus, 2002), these lack empirical substantiation. Still, theoretical understanding of the effect of synergies, particularly those with contrasting sub-processes as idea generation and implementation, is still in its infancy (Parachroni et al., 2015). As such, to establish how innovation connects with leadership and well-being, the temporal order between idea generation and implementation needs to be established, which is the core aim of Chapter 3.

Differences in individuals' innovation synergy could be inferred from meta-analytic reports of inconsistencies in the association of idea generation and implementation (e.g., Sagoohi et al., 2015). Notwithstanding, researchers agree that there is a relationship between both idea generation and implementation (Amabile, 1988; Anderson et al., 2014; Schad et al., 2018); empirical examination with similar research context have yielded contrasting and sometimes contradictory findings (see Sagoohi et al., 2015). As earlier pointed out, individuals differ in the extent to which they implement their ideas because of variations in resource availabilities. So, the synergy between idea generation and implementation differ between individuals. While acknowledging the role of other organisational factors in ensuring employees have the resources, the importance of leadership cannot be ignored (Northouse, 2015). This is because leaders in organisations are the facilitators and custodians of resources within the organizational context (Dimoff & Kelloway, 2016). Since servant leadership aims to support employees to achieve their goals, it potentially enhances the ability of employees to implement their ideas. In this way, understanding how leadership interfaces the innovation process might provide explanations for some of the individual variability, and research inconsistency, in the innovation synergy.

Leadership

There is a long-standing expectation that leaders enable innovation in organisations. This review is not intended to extensively discuss the association of leadership and innovation (see Hughes et al., 2018). Instead, a theoretical explanation of this research's understanding of leadership, and then how it is posited in relation to the innovation process, is presented. This is because despite the enormous scholarly focus on leadership, its definition remains contentious and a proper definition is yet to be articulated (Bass, 1990; Conger & Riggio, 2007). Consequently, the definition of leadership is primarily based on individuals' perception of the construct (Northouse, 2015). Those perceptions have led to numerous leadership theories, which in Northouse's opinion present dimensions of leadership. In this dissertation, leadership is seen as the process of influencing people towards the achievement of common goals through solving problems, taking teams in new directions and improving quality (Yukl, 1999; Goodstein & Burke, 1991; Bennis & Thomas, 2002; Northouse, 2015).

Initial leadership theories (e.g. trait and skills theories (see Mann, 1959; Lord, DeVader & Alliger, 1986; Stogill, 1948)) were based on assumptions that factors crucial to effective leadership were the characteristics of a leader. This approach meant that leadership could be identified quickly, yet its limitation became evident when certain individuals, seen as successful leaders in a context, experienced limited success in other situations and contexts (Stogill, 1948). Furthermore, because of leaders' characteristic view of these perspectives (Northouse, 2018), they might not necessarily alter in ways consistent with the followers' innovative needs, even when identified.

This led to the contextual leadership theories, which were more behavioural (e.g. Blake & Mouton, 1964) and situational (e.g. Hersey & Blanchard, 1969). This meant that leaders adopted behaviours that suited their situations (Northouse, 2018). Such leadership standpoints provide a prescription of how leadership should behave in differing situations and highlight the possibility that leadership could be learned. This perspective approach is not without limitation. The strength of prescription has been the most noteworthy limitation of leadership approach, as empirical evaluation has failed to provide support for it (Bryman, 1992). There has been limited support for the effectiveness of these styles in predicting employee outcomes (see Yukl, 1994). This problem is exacerbated in the case of innovation as the leaders may not be aware of the actual needs of the employee at any given point in time, in order to be able to alter their behaviour accordingly.

More recent theories (e.g., transformational, ethical, and authentic leadership) are like the trait original theories, as they present effective positive leadership characteristics (see Northouse, 2015, for a review). Amongst all leadership conceptualisation, with regards to innovation,

transformation leadership has received the most significant research attention (Hughes et al., 2018). Transformational leadership was initially conceptualised by Burns (1978) as a process where leaders and followers raise themselves to higher levels of morality and motivation. According to Bass (1985), further development within the organisational context, transformational leadership considers the "leaders' ability to achieve follower performance beyond ordinary limits" (p.xiii). This is the outcome achieved through idealised influence, inspiring motivation, stimulating the followers intellectually, and considering followers individually (Bass, 1985). Although transformational leadership is seen as associated to idea generation and implementation (Hughes et al., 2018), the leadership perspective, as some researchers argue, has a core focus on leaders' ability to enable these outcomes (Northouse, 2018). Moreover, compared to Burns' understanding of transformational leaders, Bass does not specifically consider the moral aspect of the leadership.

Building on this and acknowledging some transformational leaders' inauthenticity, Bass and Steidlmeier (1999) called for the differentiation of pseudo-transformational leadership behaviour from authentic ones. Authentic transformational leadership describes the extent to which leaders are present their true self (Hughes et al., 2018). Walumbwa, Avolio, Gardner, Wernsing, and Peterson (2009) described authentic leadership as "a pattern of transparent and ethical leader behaviour that encourages openness in sharing information needed to make decisions while accepting input from those who follow" (p.94). Authentic leadership fills in a trustworthy void in the theoretical understanding of leadership (Ilies et al., 2005). The ethical leadership behaviour is again like the transformational and authentic leadership but has a core focus on the ethical dimension of leadership (Brown & Treino, 2006). Ethic leaders strive to do what is right, and influence followers though behaviour modelling. Other leadership conceptualisations include the leader-member exchange, charismatic, and empowerment leadership; they share strong similarities with transformational, ethical and transformational leadership. Though in each case, the leadership focus slightly differs; for instance, leader-member exchange focuses on the quality of the relationship between leaders and individual followers (see Northouse, 2018 for a review of the these).

Greenleaf (1970; 1977; 1989) presented an alternative viewpoint in describing leadership. Drawing on spiritual examples of leadership (e.g. that of Jesus Christ), he proposed that leadership is about service to followers (Greenleaf, 1977). Though this leadership theory shares similarity with other positive leadership perspectives (e.g. transformational, ethical and authentic leadership (Hoch, Bommer, Dulebohn & Wu, 2018)), in contrast to their focus of leaders' satisfying organisation goals, servant leadership aims to meet the needs of their followers. While ensuring common good (Liden et al., 2008), servant leaders see supporting their followers' development and achievement of their

aspirations as the essence of leadership (van Dierendonck, 2011). This implies that servant leadership's core stance of putting the followers first and meeting their needs presents a framework for understanding how leadership could support the innovation process.

Recent reviews have shown that the relationship between these modern leadership conceptualisations is high. Moreover, but for servant leadership, which will be subsequently discussed, empirically most of them provide low incremental variance for predicting outcomes beyond that of transformational leadership (Hoch et al., 2018). Contrarily, servant leadership appears to be associated with organizational outcomes, yet has stronger incremental variance beyond transformational leadership, with less correlation with it (Hoch et al., 2018). These are indicative of the ability of servant leadership to offer alternative insight to employee outcomes apart from those explained by transformational leadership (van Dierendonck et al., 2014). The focus of the leadership approach could provide some indications for this outcome (van Dierendonck, 2011). While transformational, ethical and authentic leadership perspectives appear to focus on and drive organisational and leadership agendas, servant leadership focuses on the development of followers and meeting their needs (Eva et al., 2019).

While these understandings of leadership have certainly enhanced our knowledge of what effective leadership is and how it is enacted, their core focus is the leader, group, or organisation outcomes (Bass, 1990). Because this project has its focus on employee improvement, an approach to leadership with its core focus on followers is therefore desired. More so, central to the innovation process is employees being able to switch between idea generation and implementation, which requires leadership that responds to their followers' needs, in contrast to those of the organisation or group. In putting their followers first, servant leaders ensure followers' needs are met (Liden Wayne, Zhao & Henderson, 2008), and as such could enable innovation synergy. That said, I acknowledge that these leadership perspectives are conceptually similar, so the effects of servant leadership might be comparable to those of other positive leadership conceptualisations.

Innovation Process and Servant Leadership Theory

Numerous studies show that leadership is associated with idea generation and implementation (see Hughes et al., 2018). Transformational leadership has enjoyed research in this area, yet its association with either of idea generation or implementation is still contentious (see Anderson et al., 2014). Some researchers contend that transformational leadership is ideal for idea generation, with transactional more suited for idea implementation (Hughes et al., 2018). These perceptions have

mainly been driven by the nature of the activities of which both innovation aspects are comprised. Since idea generation involves open activities (Smith & Lewis, 2011), intellectual stimulation ought to enable it (Bass & Avolio, 1995). Similarly, because idea implementation comprises focused activities, transactional leadership is mostly posited to enhance it (Bass & Avolio, 1995). Following this situational leadership approach to innovation, researchers have adopted deferring leadership theoretical perspectives in examining their relationship with either idea generation or implementation (see Hughes et al., 2018).

In this way, researchers linking idea generation and leadership rarely consider idea implementation and vice versa. This research considers this approach as limited in studying individuals' innovation because isolating both aspects of the innovation might present an incomplete account of the effect of leadership. This is because both associated form a process, which the individual will complete. It is possible that the fragment of innovation might explain the considerable variation in the effects of leadership perspective across studies. Consequent of this isolated approach, the linkage between idea generation and implementation, which paradox theory considers as crucial to enhancing both constructs (Cameron & Quinn, 1988), is mostly ignored in the innovation and leadership theoretical intercept. Augmenting the direct approach of predicting innovation poles and regulating the linkages of idea generation and implementation could offer another avenue to enhance both constructs simultaneously.

Idea generation involves searching, discovering, creating and experimenting, which are open processes requiring domain specific knowledge, intrinsic motivation and creative abilities (Amabile, 1983). On the other hand, idea implementation requires individuals to be structured and methodological (Perry-Smith & Mannucci, 2017). As such, the ability of individuals to generate and enact their ideas depends on the availability of dissimilar resources as well as the flexibility to switch between activities (Tempelaar & Rosenkranz, 2017). Satisfaction of this needed resource enhances the chance of enacting their creativity and strengthening the effect creativity has on implementation. As already discussed, servant leadership perspective always considers the satisfaction of followers' needs first, thereby ensuring that these needs are met (Liden et al., 2008; Patterson, 2003). Servant leadership behaviour is advanced as a condition in ensuring that individuals that are have greater well-being and individuals' ability to enact their ideas is boosted. Because individual variability in their innovation interplay typically occurs on the idea generation to implementation linkage, it follows that servant leadership potentially enhances the innovation synergy. This argument, as furthered in Chapter 5, accords with the paradox theory.

This regulatory effect of the servant leadership behaviour adds to the conceptual understanding of the association of leadership and the innovation process, as it positions leadership as a variable that enriches synergy between both aspects of innovation. Main stream research exploring the association of leadership and innovation see leadership as a direct predictor of either idea generation or implementation (see Hughes et al., 2018). Servant leadership moderation suggests leadership adopting a "both of" approach in enhancing innovation, which constitutes a significant addition.

While the importance of servant leadership in enabling innovation has been theoretically framed, the importance of innovation to employees is another area with inadequate research attention (Anderson et al., 2014). Innovation involves the generation and implementation of ideas to a beneficial end (Amabile, 1988). Though this end might not be of direct use to the employee, because of the value the innovation brings, it is likely to foster a sense of achievement, accomplishment, growth and positive affect (Bakker & Demerouti, 2007), indicative of well-being (Ryan & Deci, 2001).

Employee Well-being

Before theoretically reviewing the association of well-being and innovation, a clarification of this research's understanding of well-being would be in line, given differing conceptualisations of the construct. Research on well-being has a long and broad tradition. There are two major traditions in the study of well-being; eudaimonic and hedonic well-being (Ryan & Deci, 2001). On the one hand, the hedonic view of well-being considers it as equivalent to pleasure and happiness (Diener, Wirtz, Tov, Kim-Prieto, Choi, Oishi, S. & Biswas-Diener, 2018). This perspective perceives well-being as the extent to which individuals evaluate their lives (Diener, 1984). According to Disabato and his colleagues, hedonic well-being dates back almost 25 centuries (Disabato, Goodman, Kashdan, Short, & Jarden, 2016). Diener's (1984) tripartite model presents well-being as three dimensional: life satisfaction, positive and negative affect. The tripartite model, by including the cognitive dimension of life satisfaction, improves an earlier hedonic model that balances positive and negative affect (Bradburn, 1969). On the other hand, members of the eudaimonic school of thought found the equation of well-being to pleasure and happiness somewhat limiting (Ryff, 1989), as it reduces well-being to immediate gratification of experiences (Ryan & Deci, 2001). As such, the eudaimonic field argues that well-being should be rooted in a good life (Fromm, 1981). Eudaimonic scholars maintain that not all happiness is equated with well-being; instead, happiness is consistent with people's true selves (Waterman, 1983).

Though it is possible that people in pursuit of achieving personal goals, being happy and finding meaning may be disconnected (McGregor & Little, 1998), both approaches to well-being have significant overlap (Ryan & Deci, 2001) and empirical evidence suggests they are considerably associated (Compton et al., 1996; Ryan, Huta & Deci, 2008; Disabato et al., 2015). Indeed, Disabato and colleagues, following a global investigation, postulate that hedonic and eudaimonic well-being may be the same well-being construct. Acknowledging other discussions and positions (e.g. Ryan & Deci, 2000; Ryff & Singer, 1998), this research agrees with Diener et al. (1998) in their argument that the eudaimonic perspective enables researchers to conceptualise well-being, yet hedonic well-being allows research participants to tell researchers about their well-being. Moreover, as Ryan and Deci (2001) concurred, hedonic or subjective well-being has "reigned as the primary index of well-being" (p.145). In line with these, well-being is conceptualised drawing on the subjective standpoint.

Innovation Process and Well-being

Current theoretical positions on the association of innovation and well-being are underpinned by the happiness and fulfilment associated with beneficial effects of idea implementation. As presented in Chapter 4, the effectance theory proposes that individuals derive intrinsic motivation when their ideas contribute to the resolution of issues delivering value (Harter, 1978). Due to the increased exposure to change and complexity, the organisation is likely to be more successful when their employees implement ideas (Cropley & Cropley, 2015). Moreover, the expectancy-value approach presents well-being as dependent on expecting to achieve ends that individuals find important (Oishi et al., 1999). Furthermore, innovation offers employees personal growth, self-actualisation and development opportunities, indicative of living a good life (Wallace, Butt, Johnson, Stevens & Smith, 2016). So, these motivational-based arguments suggest that innovation will positively affect well-being. A competing approach, such as health impairment theories (Caplan et al., 1975; Selye, 1976; Theorell, 1976), sees innovation as posed to increase work demands, thereby a hinder to well-being.

The health impairment line of argument, with a strong foundation in the life stress traditions of mental health (Karasek, 1979), maintains that innovation is likely to increase work demand (Caplan et al., 1975; Bakker A. B., Demerouti, De Boer, & Schaufeli, 2003; Bakker, Demerouti, & Verbeke, 2004). This is because of the association of the innovative process with increased uncertainty, work pressure and fast-paced learning (Anderson & King 1993; Bledow et al., 2009a). Consistent with this argument, this body of knowledge argues that innovation could lead to individuals exhausting their resources and energy, and ultimately leading to poor health (Bakker et

al., 2005). Within the innovation space, studies have indeed presented evidence of this negative association between innovation and well-being (e.g. Gonzalex-Roma & Hernandez, 2016). Before offering the theoretical grounding of this study, it is noteworthy that the idea implementation aspect of innovation appears to be traditionally considered as related to well-being (Gonzalex-Roma & Hernandez, 2016; West, 2002; Weisberg, 2015; White, 1959). As such, acknowledging the limitations of fragmenting innovation, to further understand this theoretical misalignment problem and the nature of idea implementation, idea implementation first is focused on in the second empirical chapter.

The two traditional approaches to associating idea implementation and well-being appear to tell two parallel sides of the story in ways that align with the Job Demand-Resource theory (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Like other balance-oriented approaches to well-being (e.g. Karasek & Theorek, 1990; James & Hall, 1988), the Job Demand-Resource theory recognises that when individuals sense a negative balance between work and personal expectations and their capacity, they are likely to experience psychological strain (Bakker et al., 2004)). Within the Job Demand-Resource, work expectation and personal capacity fall into two classes: demand and resource. Demands are work or personal aspects that need physical or/and psychological efforts; in other words, they come with a psychological cost. Resources, on the other hand, are personal or work-related aspects that are helpful in achieving goals, reducing demands and inducing personal growth (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2007). Despite numerous updates, as with other balance theories, the central proposition of the Job Demand-Resource theory is that when demand exceeds resource, employee well-being will be adversely affected. The contrary is the case when resources exceeds demand. As such, both the motivation and the impairment lines of the argument could be integrated into a unified framework drawing on the Job Demand-Resource theory. By so doing, the framework has both psychological mechanisms, in such a way that they are interacting with each other. So, the effect of demand on well-being is shaped by the resource available and vice versa as the other pathway.

Within the Job Demand-Resource literature, several resources have been identified. Resources are typically classified as personal or job resource. Job resources are those aspects of the job that aid employees in achieving their goals, enhancing person development and alleviating demands. Personal resources differ from job resources in the sense that this is employees' positive self-evaluations of their ability to control and impact their environment successfully (Hobfoll, Johnson, Ennis, & Jackson, 2003). Whilst the theoretical classification of job and personal resources is clear, both aspects are always in an interface with themselves. Yet, little is known about how these

differing resources types are aligned, and their relative effectiveness is yet to be established (Bakker & Demerouti, 2017; Schaufeli & Taris, 2014) with the Job Demand-Resource framework. Resolving this oversight becomes significant as it not only improves the overarching conceptualisation of the theory, but it offers individuals and leaders a framework in prioritising ways to improve well-being during strain. Another established problem with the demand-resource theory though, is that it appears to be balancing out demand and resource. However, it offers limited insight into the psychological mechanisms underlining phenomena (Schaufeli & Taris, 2014). The Job Demand–Control Support theory might offer some explanation into this mechanism.

Chapter 4 draws heavily on the Job Demand-Resource theory, by introducing servant leadership as a supporting resource, to align the contrasting motivational and health impairment standpoint within the idea implementation well-being linkage. Also, by offering an exploration into whether servant leadership regulation of the idea implementation well-being relationship occurs through self-efficacy and autonomy (a personal control and job control resource respectively (Bakker et al., 2004; Schaufeli & Taris, 2014)), it speaks to the Job Demand-Resource theory. By so doing, insight is offered into the relative importance of work and personal resource, and how the different resource types line up in alleviating well-being.

The contentious effect of idea implementation on well-being also presents the nature of idea implementation as unclear. This is because, if it is positively related to well-being, then it could be a resource (Bakker & Demerouti, 2016). However, if its effect is adverse, then it is considered a job demand. Constructs of this nature are not new to research as Crawford, LePine and Rich (2010) highlight. Crawford and their colleagues in their meta-analysis that constructs like idea implementation that could have double-edge effects on well-being, refer to these as challenges. This is because, in contrast to the hindrance type of demand, challenges are positively-valued demands (Bakker & Demerouti, 2016). Challenge demands are valued because they are considered by employees as rewarding, so the demand becomes worthwhile (Bakker & Demerouti, 2017). This type of demand, as Schaufeli and Taris (2014) argue, suggests that being positively valued could be seen as personal resource. On the other hand, hindrance job demands are work circumstances that impede employees from achieving their valued goals (Cavanaugh, Boswell, Roehling & Boudreau, 2000). The nature of a work demand's effect on well-being appears to depend on context (Bakker & Sanz-Vergel, 2013; Searle & Auton, 2015). However, the conditions under which idea implementation could be beneficial to well-being are yet to be established. Studies B and C advance servant leadership conditions: Study B focuses on the linkage between idea implementation and

well-being to resolve the earlier established theoretical misalignment; thereafter, Study C explores the role of servant leadership in the innovation process in influencing well-being.

The time specificity of work characteristics limits the ability of Job Demand-Resource theory in describing the association of resource and well-being. Time specificity means that work characteristics differ with time. Within the context of innovation, the weekly frequency of an employee implementation will differ across time. Because of such changes, the description of the Job Demand–Resource theory pertaining to the role of resource in alleviating demands associated with idea implementation is time-dependent or provides a snapshot view. As job demand changes across time, so the effect of resource in circumventing its effect on well-being will change (van Woerkom, Bakker, & Nishii, 2016). According to the conservation of resource theory, when there is a positive demand and resource imbalance, resource is accumulated over time (Halbesleben, 2006). The accumulation ensures that over time, individuals' ability to cope against demands is greater. Consequently, because of differing rate of change, since resource availability is changing, it follows that the effect of resource in changing well-being will differ across individuals.

Underlining the Conservation of Resource theory is the tenet that individuals strive to increase, recover, protect and foster what they considered worthy (Hobfoll, 1989). Following this reasoning, this motivational theory proposes that individuals invest resource, not only to protect against strain, but also to develop a pool of resources (Freedy & Hobfoll, 2017). This resource conservation provides people with a sense of security so that they can deal with stressful situations when they arise (Hobfoll, Halbesleben, Neveu, & Westman, 2018). As such, in contrast to other theories (e.g. imbalance (Demerouti et al., 2001; Karasek, 1979) and stress-appraisal theory (Lazarus & Folkman, 1984)), the resource conservation theory is objectively prescriptive, in that its assessment of stress is before it occurs and more objective in nature (see Hobfoll & Schumm, 2009). That said, conservation of resource shares similarities with the selective optimisation compensation viewpoint (Baltes & Baltes, 1990) in arguing for resource gain and loss over time.

Conservation of Resource theory proposes that in addition to resource loss occurring more rapidly than gain, it is also excessively more impactful (Hobfoll et al., 2018). This makes the theory the only one within the well-being field considering magnitudes. Because of this disproportionate impact, people are more willing to invest resources in protecting against resource loss, recovering from losses and gaining more resource (Hobfoll et al., 2018). Interestingly, within the conservation of resource, there is a paradoxical principle which maintains that when losing resource, resource gain becomes more valuable (Ward & Steptoe-Warren, 2014). Indeed, individuals with the fewest resources are likely to find resource gain more effectual (Halbesleben, Neveu, Paustian-Underdahl,

& Westman, 2014). In comparison with the balance theories, the Conservation of Resource is extremely useful in understanding how well-being changes over time. This is due to the accumulation or spiral element it entails. Following this line of argument, several studies have employed reciprocal models in testing this spiral proposition (e.g. Llorens, Schaufeli, Bakker, & Salanova, 2007). This enhances knowledge in that it supports the notion that resources are interrelated and contribute to themselves. Because this process occurs within individuals and the interplay between resources is likely to differ across individuals, it would be expected that the accumulation would also differ. As such, these reciprocal models are limited in demonstrating its effect on well-being changes over time as put forward by the theory. I am unaware of any study that has tested the effects of the synergy or strength of the reciprocal process on stress or well-being. Furthermore, although there are indications that factors could accelerate or hinder resource build-up, identification of these factors is still in its infancy (Hobfoll et al., 2018; Krulak, 1999).

Since both elements of the innovation process, while having differing requirements, are interrelated, their synergy potentially contributes to well-being over time, as underlined by the association of paradox and Conservation of Resource theories within the context of well-being and innovation. As previously established, because idea implementation, as a challenge-type demand, can contribute to well-being (Schaufeli & Taris, 2014), its resource potentials depend on specific conditions (Bakker & Demerouti, 2017). Accordingly, as will be seen in Chapter 4, servant leadership could shape the idea implementation well-being linkage. As such, servant leadership becomes a condition for idea implementation to be a resource. Furthermore, as earlier argued, servant leadership also regulates the interplay between idea generation and implementation. So, the spiral process of the Conservation of Resource theory provides a premise for associating well-being with the paradoxical recursive relationship between idea generation and implementation. Building on this line of reasoning, in Chapter 5, taking an integral view of innovation, servant leadership can boost the association of idea generation and implementation. This is because servant leadership provides support for employees to encourage their implementation of employees' ideas. Over time, because of the interrelationship between idea generation and implementation, their association ends up reinforcing resource. Accumulating its resource over time also protects against losses and could be a source of intrinsic motivation (Hackman & Oldham, 1976; Tierney & Farmer, 2002), which in turn contributes to continual idea generation (Amabile, 1983). Moreover, the effect of idea generation on implementation could also be explained by the need for reinvesting resource and accumulating resource (Freedy & Hobfoll, 2017). Over time, well-being is likely to change as this continual accumulation protects against resource loss and provides a further resource to be

reinvested. In simple terms, the preceding arguments suggest that servant leadership boosts the idea generation and implementation synergy which accounts for changes in individuals' well-being over time – a proposition that is further theorised and tested in Chapter 5. The outcomes of Chapter 4 seek to answer questions pertaining to conditions that explain how individuals differ in their well-being. Chapter 5 has, at its core, an understanding of how individuals' well-being changes over time. As such, Chapter 5, in response to researchers calling for well-being to be considered as a leadership outcome (Sonnentag, 2015), highlights how innovation provides an alternative explanation for the linkage between leadership and changes in employee wellbeing over time.

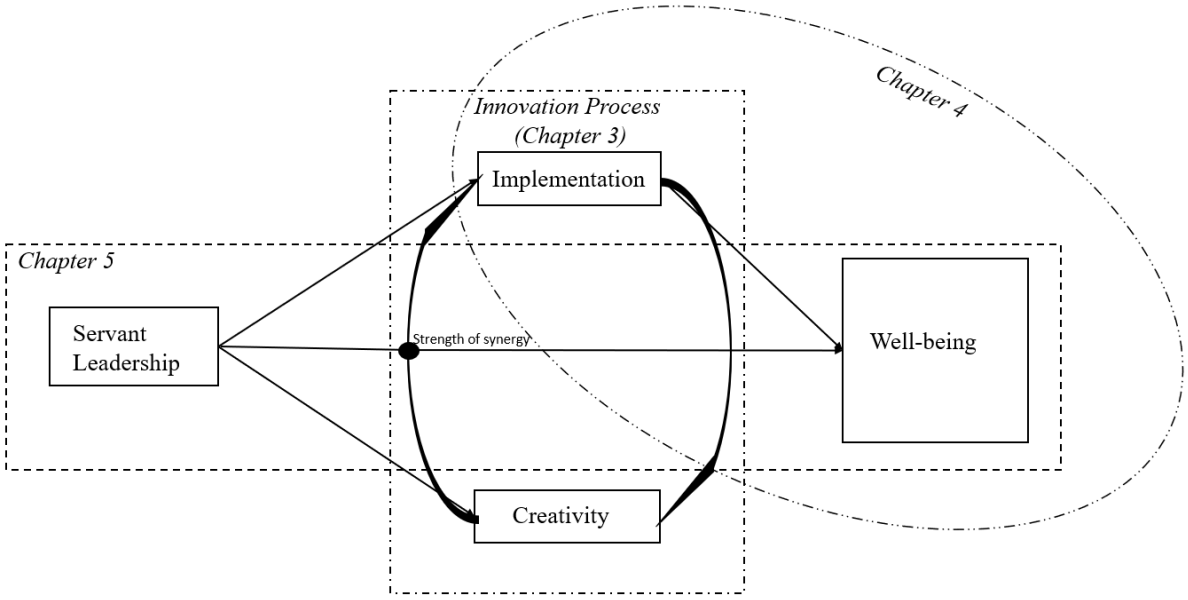


Figure 7.2: Conceptual Model

Having considered a selection of theoretical perspectives in the theoretical intercept of well-being, innovation and leadership, the effectance theory together with the Componential Theory of Creativity were adopted to explain the idea implementation to idea generation linkage. This linkage supports current idea generation to implementation demonstrating a reciprocal process. This relationship forms bases for using the paradox theory in framing the recursive association of idea generation and implementation, because both elements are different in activities and requirements, yet contribute to the same goals. Furthermore, the paradox approach to ambidexterity provides a potential explanation for the inconsistency seen on the association of both elements. This is because when the resource needs of both elements are not satisfied, the association is weaker than when they are met. Servant leadership by supporting their followers enhances this interplay because this leadership behaviour is driven by a sincere concern for followers' growth and development (Liden et al., 2008) solely to meet followers' needs (Van Dierendonck, 2011). Furthermore, paradox theory

aligns well with the Conservation of Resource theory in explaining how innovation contributes to well-being. Figure 1.2 presents the overarching conceptual model for this project. The empirical studies are highlighted as domains on the model, demonstrating their interrelationship.

Chapter 2. Research Design

This project aims to substantiate the role of servant leadership in improving employee well-being through their being innovative. As earlier discussed, Study A establishes the temporal order of aspects of innovation. Study B investigates how servant leadership shapes the association of innovation and well-being across individuals. Finally, Study C examines how servant leadership enhances the association of idea generation and implementation in such a way that this generation and implementation interplay potentiates individuals' well-being changes. In this chapter, the overarching research design and methodology guiding the empirical papers are put forward.

Research Philosophy and Methodology

Research design decision-making is typically driven by a philosophical stance, which is determined by the aims of the research (James & Thayer, 1975) and the nature of the variables under investigation (Anderson, Auquier, Hauck, Oakes, Vandaele, & Weisberg, 2009). Because there are numerous frameworks in presenting philosophical research discussions, those of this project were aligned with Crotty (1998). Crotty (1998) research design framework consists of four levels: epistemologies, theoretical perspective, methodology and methods. Contrary to other frameworks, Crotty omitted the ontological layer (the nature of truth (Guba & Lincoln, 1998)), as it bears considerable similarities with the epistemologically (how to figure out the truth (Guba & Lincoln, 1998)). The epistemology, the philosophy of knowledge, underlines the theoretical perspective (Crotty, 1998), and is sometimes conceptualised as the distance between the researcher and the object of research (Merten, 1998). As Crotty (1998) posits, the theoretical perspective drives the methodology by "providing context for the process and grounding its logic and criteria" (p.3). The methodology presents the research strategy, while the methods describe the data collection and analytic techniques. Crotty considers his epistemology and theoretical perspectives as equivalent to Gadamer's (1966) pre-understanding and is presented as such in the subsequent subsection.

The fields of the innovation process, well-being and leadership are vibrant and mature (Anderson et al., 2014; Northouse, 2018). Though they cannot be observed directly, they can be measured indirectly and integrated into theoretical frameworks (Lee & Lings, 2008). Furthermore, this project aims to principally establish relationship and pattern amongst an array of variables based on theory-driven hypothesis. This mandates the adoption of the objective epistemology and a post-positivist theoretical perspective (Crotty, 1998). In this investigation, compared to other epistemologies, one practical advantage of the objective is that it assumes that distance is maintained

between the researcher and the researched. This becomes extremely important when establishing relationships since interactions with the researcher could influence the sought-after relationship, as with the subjective epistemology (Saunders, Lewis, Thornhill & Wang, 2009). Moreover, subjectivist and constructivist epistemology allow research subjects to impose meaning on findings (Crotty, 1998), thereby generating multiple realities, making results difficult to replicate and compare (Blaikie, 2007). Thus, in seeking the knowledge, every effort was made not to interfere with it. In contrast to the parent positivist approach, post-positivists accept that objective measures include errors (Saunders et al., 2009). So, with constructs in this research lacking the ability to be measured directly, post-positivist seems more appropriate. These research stances are not new to the innovation, well-being and leadership (Arnold, 2017; Hughes et al., 2018). In sum, the objective epistemology and post-positivist stances suggest that knowledge should be reduced to law-like generalisations (Blaikie, 2007), ensuring they are "value-free, and the explanation for a causal nature" (Merten, 1998, p.8). In practical terms, this recommends that the research focus is on the objects of the research together with methods and findings being theory-laden (Crotty, 1998). Across all three studies, it was aimed to establish knowledge about innovation, well-being and leadership that are generalisable and unbiased. The study focuses on teachers, and with the examined constructs being context-bound (Amabile, 1996; Northouse, 2018), the study's findings should be treated with caution. Furthermore, these findings are limited to probabilities, and some factors might have been discounted (Reichardt & Rallis, 1994).

Consistent with the objective epistemology and post-positivist theoretical perspective, a deductive methodology was adopted, collecting data utilising online surveys. This strategy ensures that the theoretical understanding of constructions and hypotheses drives data collection and analysis, "matches the theory to data, not social reality" (Blaikie, 2007, p.179). In addition to earlier theoretical foundation, through the three studies, hypotheses were developed and tested accordingly.

Participants

Education is seen as crucial to innovation across any nation or society (Baruah & Paulus, 2019) and innovation in teaching is central to this (Paulus et al., 2019). Teachers are knowledge workers because they involve theoretical and analytic knowledge in developing their services (Drucker, 1959; Ramirez & Nembhard, 2004). Knowledge workers are an innovative class of individuals (Dul, Ceylan & Jasper, 2011; Florida, 2005), as their work involves the creation, creative combination of knowledge, distribution or application of knowledge (Davenport, Thomas, & Cantrell, 2002) in delivering the value to their organisations. For instance, within the innovative

teaching context, teachers not only find creative ways to disseminate knowledge content to students, but they also creatively integrate differing knowledge forms (e.g. students' behaviour knowledge, students' cognitive knowledge, curricular knowledge) in a way that all students make optimal progress. It becomes logical to argue that teachers are knowledge workers (Florida, 2005).

Methodologically, in comparison to other professions, because of national synchronisation of school calendars, certain factors considered influential to well-being and innovation occur to most teachers at the same time. For instance, rest (during holidays) and pressure (perhaps before examinations), factors considered as having an effect of well-being and innovation (e.g. Harrington, 2001; Shao et al., 2019), occur at the same time for most teachers, unlike other professions where pressure could depend on project timescales and holidays are taken asynchronously, making controls for these essential to research success. Given these theoretical and methodological considerations, participants in this research were teachers.

I initially attempted to contact participants through their schools, but schools that opted into the study were atypical of the national cohort. It was seen that there was a considerable skew towards the best schools according to their independent ratings. Then a more convenient and non-probabilistic approach was adopted (Gray, 2014). This involved inviting participants to complete an online weekly diary through a social media group for teachers in England. This strategy proved to be highly successful, as demonstrated in a demographical distribution of the sample was somewhat like the national distribution (Department for Education, 2018). For instance, the proportion of female participants that took part in this project was about 70% compared to the national cohort of 64%. This data collection approach has some analytic implication that is discussed in the analysis section. Furthermore, individual characteristics (e.g. age cohorts, subject taught, gender, educational level) of participants were also collected to act as control variables across the empirical studies, as these factors are seen to influence the target variables (e.g. Reader & Laland, 2000).

Data Collection Process

Because the Conservation of Resource and paradox theories acknowledge the role of recursive interplay within innovation and well-being, the overarching research design for this project followed the shortitudinal approach (Dormann & Griffin, 2015). Like the longitudinal, this approach takes an intensive design (Frees, 2004) but with shorter intervals. In other words, the design involves collecting data from the same participants frequently over a set period. This allowed the opportunity to test the recursive nature of idea generation and implementation in ways that reflect the paradox approach to ambidexterity. Overall, 12 waves of data were collected. The results from the three

empirical studies were drawn from this dataset, yet differing data waves or variables were used for empirical studies. The data collection process as it relates to each empirical study is discussed in some depth in their chapters. That said, Table 2.1, in addition to summarising construct operationalisation, presents information on when constructs were assessed.

An inherent difficulty in carrying out longitudinal data collection is that of defining time intervals for assessing changes (Mitchell & James, 2001). Neither of the core theories underpinning this study has specified a timeframe for any of the expected effects. Prior studies have presented differing timeframes. For instance, Daniels et al. (2011) demonstrated that creativity and innovation varied considerably within an hour, Weinberger and colleagues demonstrated that changes occurred between days (Weinberger, Wach, Stephan & Wegge, 2018), whilst others have suggested such effects might take up to six months (e.g. Tierney & Farmer, 2002). The difference appears to be consistent with the operationalisation of their constructs. For instance, Daniels et al. (2011) adopted a behaviour measurement of creativity and innovation using a diary approach, using items of the form, 'In the last one day, how many ideas have you generated?'. On the contrary, studies like Tierney and Framer (2002) utilised a more trait-like approach, using items like 'you generate ideas'. Since teachers' work units are mostly based on a weekly cycle (timetable), during the piloting (described in page 31), adopting the diary-like approach, item variability was tested with a one-week lag. Between 40% and 60% changes were observed for the innovation and creativity measurement items. As such, I decided to examine this interplay over time, capitalising on a behavioural approach in evaluating a life as it is lived approach in understanding the process (see Bolger et al., 2003; Czerwonka, 2019).

The need to invite many teachers, covering a broad scope within the limited time frame, furthered the use of an online survey (Qualtrics, 2018) as the data collection technique (Fricker & Schonlau, 2002). This data collection technique ensured increased anonymity (Bell, Bryman & Harley, 2018) while driving down operational costs (Watts, 1997). However, this approach is not without limitations. Certain groups of the target sample may be under-represented (Coomber, 1997) because those individuals might be unfamiliar with the platforms (Gray, 2014) and internet surveys take longer to complete than paper questionnaires (Martella et al., 2013). In mitigating these risks, survey items were optimised by reducing the proportion of multisyllabic words.

Operationalisation of Constructs

This dissertation involved the measurement of seven key constructs at differing times: idea generation, implementation, well-being, servant leadership, autonomy, intrinsic motivation and self-efficacy. The following section highlights how the constructs were measured.

Idea generation. Idea generation or creativity is seen as generating novel ideas (De Jong & Den Hartog, 2007), which was measured by five items. Idea generation items in Janssen's study (2000) were adapted to capture this construct, given their brevity and proven reliability and consistency. I ensured that idea generation was focused on job-specific activities (Amabile, 1983), so a sample item is, 'In the past week, how many new *teaching* ideas for difficult issues have you generated?'. Participants utilised a seven-point Likert-type scale in responding to items (Likert, 1932), with the number of creative items (none, 1 – 2, 3 – 5, 6 – 8, 9 – 11, 12 – 15, >15). On average[1], this scale demonstrated strong reliability (α =.84, Factorial Determinacy (FD) =.96, Composite Reliability (CR) =.88, Average Variance Extracted (AVE) =.61; Cohen, 1988).

Idea implementation. Idea implementation is defined as the application of novel ideas (De Jong & Den Hartog, 2007), also measured by five items. For similar reasons, and as with creativity, idea implementation items in the Janssen study (2000) were adapted to operationalise the construct. As with idea generation, items were adapted to reflect innovative behaviour in teaching. Items like, 'In the past week, how many new *teaching* ideas did you put into practice?' were utilised in measuring this construct. Response to the item was a seven-point Likert scale with the number of implementations as indicators like creativity. On average, the scale was found to have good reliability (α = .83, FD = .94, CR = .84, AVE = .51; Cohen, 1988).

Servant leadership. Greenleaf (1977) portrayed servant leaders as leaders that go beyond their self-interest, by putting their followers first (see also van Dierendonck, 2011). Aligning with this argument, servant leadership was measured using putting followers' first dimension on the Liden et al. (2008) scale. A sample item on this scale is 'In the past week, your leader cared more about others' success than their own'. Again, the response scale was between seven-point agreement scales, from *completely agree* to *completely disagree*. Although servant leadership was measured across all time points, it was noticed that the correlation of servant leadership was consistently over .8 ($p < .001$) and was relatively stable. So, servant leadership was considered time-invariant in this study, yet the reliability of the scale was expectational (α = .84, FD = .98, CR =.93, AVE =.76; Cohen, 1988).

Wellbeing. Wellbeing seen as individuals' subjective evaluation of their lives. The construct was measured using the four items of quality of life scale (Hyde, Wiggins, Higgs & Blane, 2003). A sample item used to capture this construct was 'I enjoy the things I do at work'. The scale was

[1] Over the twelve measured time-points

responded to using a seven-point agreement scale of *completely disagree* to *completely agree*. The assessment of well-being was reliable over time[2] (α = .87, FD = .92, CR = .84, AVE = .58; Cohen, 1988).

Intrinsic motivation. Intrinsic motivation was operationalised as creative intrinsic motivation, self-driven interest and enjoyment of creative activities (Ryan & Deci, 2000), which was measured by an adapted version of Amabile's (1985) scale. Creative intrinsic motivation ensures that the measurement of intrinsic motivation is focused on creativity, as framed in the hypothesis. The scale has three items such as, 'In the past week, I enjoyed work because I found solutions to complex problems'. Participants' responses were on a seven-point scale from *completely agree* to *completely disagree*. On average, this scale could be described as reliable[2] (α = .85, FD = .94, CR = .89, AVE = .73; Cohen, 1988).

Autonomy. Autonomy was operationalised as perceived work autonomy. Perceived employee autonomy could be seen as employees' subjective assessment of the control they have over how they go about their jobs (Leach et al., 2003). This was measured using an adapted version of the Spreitzer (1995) autonomy dimension. The three items on the scale included, 'In the past week, I decided on my own how to go about doing my work'. Participants responded to these using a seven-point measurement scale. The scale was measured during the fourth wave and could be described as reliable (α = .90, FD = .95, CR =.91, AVE = .77; Cohen, 1988).

Self-efficacy. Self-efficacy is seen as individuals' belief in their innate ability to meet work-related goals (Bandura, 1977). The construct was measured using three items adapted from the Spreitzer (1995) self-efficacy scale. A typical item on the scale was 'In the past week, I was self-assured about my ability to do my job' and was responded to using a seven-point agreement scale. This construct was measured during the fourth wave and could be described as reliable (α = .88, FD = .94, CR = .92, AVE = .80; Cohen, 1988). As early highlighted, age, professional tenure, organisational tenure, education and gender were controlled for as they are co-variates that are established to influence dependent variables.

[2] Average across the three measured time points

Table 7.2: Operationalisation of constructs

Construct	Assess time point	Operational definition	Source	Number of items	Sample items
Idea generation	All	Idea generation was measured by how frequently the participant comes up with novel ideas (Daniels et al., 2011)	Janssen (2000)	5	In the past week, how many original solutions for teaching-related problems have you created? *Response: None; 1 – 2; 3 – 5; 6 – 8; 9 – 11; 12 – 15; more than 15*
Idea implementation	All	Idea implementation was measured as the frequency of novel and useful idea implementation (Daniels et al., 2011)	Janssen (2000)	5	In the past week, ideas did you introduce into your classroom practice in a systematic way? *Response: None; 1 – 2; 3 – 5; 6 – 8; 9 – 11; 12 – 15; more than 15*
Servant leadership	All	Servant leadership was operationalised as putting followers first (Greenleaf, 1970)	Liden et al. (2008)	4	In the last week, my direct leader seemed to care more about my success than their own. *Response: Completely agree, strongly agree, agree, neutral, disagree, strongly disagree and completely disagree*
Well-being	1, 5 and 12	Wellbeing was operationalised as individuals' subjective assessment of their life satisfaction (Diener et al., 2018)	Hyde et al. (2003)	4	In the past week, I enjoyed the things I did at work. *Response: Completely agree, strongly agree, agree, neutral, disagree, strongly disagree and completely disagree*
Intrinsic motivation	1 – 3	Intrinsic motivation was measured as creative intrinsic motivation, by participants agreeing to statements pertaining to self-driven interest and enjoyment of creative activities (Ryan & Deci, 2000)	Amabile (1985)	3	In the past week, I enjoyed work because I found solutions to complex problems. *Response: Completely agree, strongly agree, agree, neutral, disagree, strongly disagree and completely disagree*

Autonomy	4	Individuals' subjective assessment of the control they have over how they go about their jobs (Leach et al., 2003)	Spreitzer (1995)	3	In the past week, I decided on my own how to go about doing my work. *Response: Completely agree, strongly agree, agree, neutral, disagree, strongly disagree and completely disagree*
Self-efficacy	4	Employees self-belief in their ability to organise and execute actions required to produce given levels of attainments (Bandura, 1998)	Spreitzer (1995)	3	In the past week, I was self-assured about my ability to do my job. *Response: Completely agree, strongly agree, agree, neutral, disagree, strongly disagree and completely disagree*

Data Analysis

The structural equation or simultaneous equation modelling perspective presents an overarching framework of analytic techniques to estimate and test the presence (or absence) of relationships between latent variables without the influence of measurement errors (Loehlin, 1992). This multivariate statistical perspective could be an integration at least a few of: measurement theory, latent factor analysis, path analysis, regression and simultaneous equations. Structural equation modelling techniques through measurement models use at least two indicators to assess unobservable hidden constructs, and for examining relationships amongst latent variables, structural models are utilised (Hox & Bechger, 1998). In their most basic form, structural equation models adopt a factor analysis in the measurement of latent constructs (Kline, 2014), together with a regression model for assessing the relationship between them (Joreskog, 1977). The measurement and structural models are estimated using matrix Equations 2.1 and 2.2 respectively.

$$y_i = \alpha + \Lambda\eta_i + \varepsilon_i$$

Equation 7.1: Measurement equation

The measurement aspect of the structural equation model is presented in the Equation 2.1. Consistent with Muthen and Muthen (2002a), y is a p–dimensional vector of observed indicators of an m–dimensional vector of latent variables, η, with Λ, a p x m parameter matrix of coefficients representing the factor loading of observed indicators. Elsewhere, ε is a vector of disturbance for the observed indicators. The co-variance matrix, θ, contains the co-variance matrix of the disturbance ε. The model also includes the *p*-dimensional vector α which denotes a vector of measurement intercept parameters.

The structural aspect of the model that assesses the relationship between latent variables is given as:

$$\eta_i = \beta + C\eta_i + \zeta_i$$

Equation 7.2: Structural equation

Within the structural Equation 2.2, β is an *m*–dimensional vector, with C an *m x m* parameter matrix of regression slopes amongst latent variables. Furthermore, τ is an *m x q* matrix containing regression amongst latent variables and observed variables, where ζ an m-dimensional vector represents the residual variance for the latent variables, with ψ the covariance matrix of ζ. Because of the recursiveness in the Equation 2.2, it is rewritten as:

$$\eta_i = (1 - C)^{-1}\beta + (1 - C)^{-1}\zeta_i$$

Equation 7.3: Structural equations without recursiveness

Substituting the structural equation (Equation 2.2) in the measurement equation (Equation 2.1), it becomes:

Equation 7.4: $y_i = \alpha + \Lambda(1 - C)^{-1}\beta + \Lambda(1 - C)^{-1}\zeta_i + \varepsilon_i$

Structural equation models offer an alternative to analysis of co-variance when estimating multi-levelled, hierarchical or nested data models (Marcoulides & Schumacker, 2013). Multilevel, nested or hierarchical models are statistical models used to analyse nested data, where parameters differ across levels (Curran, 2003). For instance, a multilevelled model could be used to assess employees' performance, when they are nested in teams (Tabachnick, Fidell & Ullman, 2007). Within the context of the dissertation, the multi-levelled model approach was adopted in conducting analysis of repeated measurement nested within participants. This multi-level modelling was approached, as will be discussed extensively in Studies A and C, using extensions of structural equation modelling.

Structural equation modelling presents the opportunity to test theory-driven hypothetical models against collected data. This testing is achieved through the analysis of mean and co-variance matrix of observed variables and compared with the specified (or theorised) matrix (Muthen and Muthen, 2002a). The differences between these models are evaluated using log likelihood ratios considering models' degrees of freedom (Hu & Bentler, 1995; 1999). Where the observed matrix is not significantly different from the hypothesised (and more parsimonious) model, the model is said to fit the data. In other words, fitting the model to the data means solving a system of equation in such a way that data is like the model (see Hox & Bechger, 1998 for more).

During the empirical studies, model fitness to the data was assessed in ways aligning with Byrne (2001) using robustness-of-fit statistics for all fit evaluation and model comparisons. Fit statistics included Comparative Fit Index (CFI) and the Tucker-Lewis Index (TLI), relative fit indices whose values over .95 are considered an excellent fit (Bentler, 1990; Medsker et al., 1994). The Standardised Root Mean Square Residual (SRMR) and Root Mean Square Error of Approximation (RMSEA) were also explored in gauging fit. With values below .09, the model fit is seen as a good fit (see Bentler, 1990; Kline, 1989). In addition, the chi-square (χ^2) difference was used to compare nested models, to ensure that, considering degrees of freedom, alternative models are significantly better.

In addition to examining hypothesised relationships, structural equation modelling offers the opportunity to estimate model parameters. Structural equation modelling parameter estimation is conducted typically by numeric maximisation likelihood of sample data (Chou & Bentler, 1995). This estimation method typically assumes normality of data and linearity of relationships (Kumar & Upadhaya, 2016), and moreover, requires an adequate sample size to provide statistical power (Bentler & Chou, 1987; Chou & Bentler, 1995; Westland, 2010).

Pilot Study

Before commencing full data collection, a number of pilot investigations were conducted. Pilot studies are reduced versions of a full project aimed at improving the success of main projects (Polit, Beck & Hungler, 2001). These studies were to ensure contextual construct face validity, clarity of items and to test certain assumptions required for analytic methods. When items are drawn from other studies to improve the chance of success, it is important that participants have the intended understanding of keywords in the survey (Gray, 2014). Further participants are known to drop out of surveys as a result of limited clarity (Watt, 1997). As such, the first aim of the pilot was to ensure a shared understanding of survey items between the participants and the researchers. In this regard, three focus group interviews with 2 - 3 teachers in each were conducted. During these meetings, participants read survey items, verbalised their understanding of the items, and commented on the clarity of the items. This led to the adaptation of items to contextualise them. For instance, on the Janssen idea generation scale, an item that read: *"generating original solutions for problems"* (Janssen, 2000, p.292), was adapted to read: "*in the past week, how many original solutions to teaching problems have you generated"*. Participants scored items' clarity out of 10. The average clarity score for all items during the pilot was 7.5 (SD = 1.3). This result indicated that scales were adapted to measure what was intended within the context of the potential participants, highlighting face validity.

The second aim for this pilot was to check that stability of constructs across time was accounted for and participants' response patterns met the expectation of the test analytic methods. To this end, data was collected from 69 teachers using all survey items on two occasions (one-week lag). According to Muthen and Muthen, 2002b, this sample size was sufficient for the analysis. Participants' responses were compared between the two occasions, accounting for changes using percentages. It was found that, except for idea generation and implementation, items on the scales were relatively stable.

In addition, tests for scale validity, item ambiguity and difficulty were conducted using the Rasch model (Rasch, 1961) on WINSTEP 3.90 (Linacre, 2010). Drawing a Bayesian probabilistic model (Equation 5), the Rasch (1961) model places scale items and participants on the same scale demonstrating how they reflect the latent construct. In estimating respondent latent scores, responses from items are converted to probabilities, then to logits (Bejar, 1983). According to Andrich (2005), given that δ_i represents the difficulty of each item i, in comparison to other items on the scale, across participants with scale location threshold and maximum score for all statements of τ_k and m, the probability model for a participant with latent score, x, endorsing item i is presented in Equation 5 (cf. Rasch, 1961)

$$P(X_{ni} = x)\frac{\exp\sum_{k=0}^{x}(\beta n - (\beta_n - \tau_k))}{\sum_{j=0}^{m}\exp\sum_{k=0}^{j}(\beta n - (\beta_n - \tau_k))}$$

Equation 7.5: Rasch model

The item ambiguity and item difficulty maps for scales indicated differences between consecutive response points were consistent. In the case of item maps, it was noticed that although items are seen to just span the range of participants' responses given the five-point scale utilisation, as such a seven-point scale was adopted in full project to minimise the chance of a ceiling-and-floor effect in constructs' measurement. For more information on these results, see Appendix 3.

In addition, drawn on evidence elsewhere (e.g. Rosing et al., 2011; Salanova et al., 2002; Sarooghi et al., 2015; Tierney & Farmer, 2002), the effect of the size of model parameter were estimated for each of the empirical models. Assuming a desired statistical power of 0.8 and probability level of 0.05, power analysis was conducted to establish the minimum sample size required to detect the effect (Muthen & Muthen, 2002b). The analysis showed that across empirical studies, the sample sizes between 34 and 100 were sufficient for the analysis in this research project.

Procedure and Quality Assurance

612 teachers completed the online diary during T1, and of those, another 525 (86%) made entries during T2. 388 (63%) made all entries for all constructs at least 12 times. Drop-out analyses were conducted, and drop-out was not predicted significantly by any control variable, neither did it account for any of the variables under investigation. Moreover, further analysis showed that missingness occurs completely at random (Little & Rubin, 2014). This

suggests that participant drop-out would have a limited effect on findings of this research. Concerning time points, suggestions by Schultzberg and Muthen (2018) were followed and the study involved 77 days' worth of shortitudinal data (for the Study C reported in Chapter 5). Data collection took place during the spring term of 2018 (between January and March).

Ethical Considerations and Data Protection

Every effort was made to ensure that data collection met the ethical principles and conduct codes of the British Education Research Association and the American Psychological Association, in addition to the general data protection regulations. Before the commencement of data collection, the research's procedures were approved by the Norwich Business School ethical committee (see Appendix 4). Research respondents were informed that their participation in the research was purely voluntary and they had the right to withdraw at any point. Moreover, they were informed that every effort would be made to ensure their data was anonymised. Additionally, the purpose of the research and the duration for which the data would be kept was clarified to them. Although information about control variables were collected, no personal information was collected. Joining data across multiple time points was achieved using features like the last three digits of participants' mobile phone numbers, the last three characters of their maternal surname and their favourite colours. No incentives were offered; instead, the importance of the investigation was driven. Decisions against approaching schools ensured that the gatekeeper coercion risk was avoided (Miller & Bell, 2002). This is because participants approached directly reduces the chances of positional authority telling them to complete survey, thereby having an influence on findings. This is of particular importance given the importance of leadership measurement to this study.

Summary

The importance of societal and organisational importance of innovation is well clarified. In the organisational setting, innovation involving two aspects, idea generation and implementation, is mainly carried out by individuals. The importance of innovation to individuals is yet to be established. Before discussing the effects of innovation, knowledge about the association of idea generation and implementation is riddled with contradictory findings and arguments. Some scholars see their association as a direct idea generation to

implementation causation (e.g. Amabile, 1988), while others maintain that it is recursive (e.g. Amabile & Pratt, 2016; Paulus, 2002). Furthermore, the strength of the association between studies varies beyond a simple contextual explanation. In response to these, amongst other issues, this project, utilising three empirical studies, aims to test and theoretically rationalise: the nature of the innovation process, the conditionality of servant leadership on the linkage between idea implementation and employee well-being, and the innovativeness explanation of the association between servant leadership and changes in well-being. By so doing, Table 2.2 outlines the project contributions to the differing theory and research areas.

Table 7.3: Signposting theoretical contributions

Theory	Contrary findings / Gap in knowledge	Empirical study exploring the gap (Chapter number)
Innovation process	Temporal order of idea generation and implementation	Study A and C (Chapters 3 and 5)
Innovation process	Rationalising the nature of the relationship between idea generation and implementation	Study A (Chapter 3)
Innovation process	Factors shaping the association of idea generation and implementation	Study C (Chapter 5)
Job Demand-Control-Support theory	How support and control are connected in ensuring the effect of work challenge on well-being is positive	Study B (Chapter 4)
Job Demand-Resource theory	Alignment and differential effect of different resources types in alleviating demand	Study B (Chapter 4)
Conservation of Resource theory	Confirming the effect of positive spiral or accumulation of resource on changes in well-being	Study C (Chapter 5)
Innovation and well-being literature	The explanatory role of the innovation process on the association of servant leadership and well-being changes	Study C (Chapter 5)
Innovation and well-being literature	Competing theories explain the effect of idea implementation on employee well-being	Study B (Chapter 4)

Paradox theory	The role of leadership in enhancing synergy	Study C (Chapter 5)
Servant leadership	An alternative way for servant leadership processes	Study B and C (Chapter 4 and 5)

Having clarified the theoretical and methodological foundations, the first empirical chapter (Study A) focuses on the innovation process in more significant detail. Without a comprehensively grounded and confirmed knowledge of the nature of this process, testing its relationship with other constructs would be of limited value. As such, this chapter aims to confirm the nature of the association of idea generation and implementation between two competing conceptualisations: a forward idea generation to implementation and a reciprocal relationship between both constructs. This chapter also tests the intrinsic motivation explanation mechanism.

Chapter 3. The reciprocity of idea generation and implementation: the explanation of intrinsic motivation - Study A

Introduction

Increased business complexity and dynamism, together with fast-paced work processes, have raised the importance of employees' generating and implementing their ideas. Following this idea journey (Perry-Smith & Mannucci, 2017), idea generation (sometime referred to as creativity) that involves the generation of original ideas (Hughes et al., 2018) is traditionally seen as a precursor to the implementation of useful and novel ideas (Amabile, 1996; Anderson et al., 2014, Perry-Smith & Mannucci, 2017). Studies have emerged challenging the simplicity of this association (see Rosing et al., 2011; Hughes et al., 2018; Amabile & Pratt, 2016; Sarooghi et al., 2015; Rosing, Bledow, Frese, Baytalskaya, Lascano & Farr, 2018). Understanding if the relationship between idea generation and implementation is either linear or reciprocal is key to the knowledge of how it connects to leadership. Because effectance theory postulates that individuals gain intrinsic motivation when their efforts successfully create value (Harter, 1978; White, 1959; Vroom, 1964; Deci & Ryan, 1985), it follows that when people's creative ideas are enacted, they will gain intrinsic motivation. Intrinsic motivation, in turn, contributes to creativity (Amabile, 1983). As such, it is possible that idea implementation could predict generation, which in addition to the traditional idea generation to implementation, sets the stage for a reciprocal association. Amabile and Pratt proposed a similar reciprocal model for organisations' idea implementation and generation (Amabile & Pratt, 2016). It is surprising to note that this reverse conceptual possibility has, until now, attracted limited research attention, particularly in the case when the same individual generates and implements the idea. These gaps question the adequacy of current theoretical knowledge on the dynamics of the creativity–implementation association.

In response, drawing on the effectance (Harter, 1978) and componential creativity and innovation theories (Amabile, 1988), leveraging cross-lagged process analysis, the goal of the present enquiry is two-fold. First, this study examines the reciprocal relationship between implementation and creativity. Secondly, it tests intrinsic motivation as a theoretical explanation for the implementation predicting idea generation.

The current study contributes to knowledge on several accounts. It enriches innovation's body of knowledge by investigating the temporal order of their relationship. By so doing, the study extends and adds to the current innovation process by theorising and empirically testing the reverse process, which also accords with the paradox perspective of the innovation process (see Bledow et al., 2009a). As a result, it aims to answer theorists calling for an improved and integrated theory of creativity and implementation (e.g. George, 2007; Anderson et al., 2014; Hughes et al., 2018; Rosing et al., 2018). In addition, establishing a reciprocal relationship between idea generation and implementation has significant implication for how the innovation process connects with other constructs. For instance, attempts aimed at improving innovation could focus on boosting the linkages between both aspects of the interplay. As such, rather than focusing on either of idea generation or implementation, efforts could be dedicated to boosting their interplay which promises to enhance both aspects over time. Furthermore, this study presents evidence indicative of the centrality of intrinsic motivation in individual innovation as the construct moderates the effect of idea implementation on idea generation. The findings, in some ways, present empirical support of the reciprocal proposition that Amabile and Pratt (2016) argued recently.

Hypothesis development

The hypothesis development is introduced by establishing the definitions of idea generation and implementation because they have been described in several ways elsewhere (see Anderson et al., 2014). This understanding provides this research with the groundwork, in agreement with the conceptual questions, to theoretically frame the hypotheses. Because intrinsic motivation is an established crucial requirement for creativity (Amabile, 1983), together with implementing useful ideas positioned to yield intrinsic motivation (White, 1978), it becomes logical to ground an explanation of the idea implementation–generation linkage on the intercept of the componential theory of creativity (Amabile, 1983) and the effectance theory (White, 1978). In all, this investigation is theoretically grounded drawing on aspects of both theories.

In the workplace, as Hughes et al. (2018) defines, idea generation or creativity "concerns the cognitive and behavioural process applied when attempting to generate novel ideas" (p.3). Initial conceptualisation of creativity (elsewhere referred to as idea generation) perceives the construct as the process of generating useful and novel ideas (e.g. Stein, 1974;

Amabile, 1996; Anderson et al., 2014), but an important modification is Hughes and his colleagues' exclusion of the *usefulness* clause in creativity (cf. Weisberg, 2015). This is because creativity occurs before it can be judged as useful (see Smith & Smith, 2017); indeed, "ideas are useless unless used" (Levitt, 1963, p.79). So, an idea can only be judged as useful when it is enacted. Moreover, its usefulness could be subjective and time-pending. Therefore, usefulness becomes more of an outcome. That said, consistent with Harrington's (2018) caution, usefulness being eliminated from the definition of creativity does not preclude the value-driven intent in generating ideas in the first place (cf. Weisberg, 2018).

In contrast to idea generation, idea implementation is mostly agreed to be the phase of innovation where an idea is exploited, enacted and its value realised (Hughes et al., 2018). As such, it is during this phase that the value associated with ideas is qualified. Hence the inclusion of "usefulness" in its definition. In Hughes and his colleagues' opinion, the idea implementation phase of the innovation process involves the promotion (Hughes et al., 2018). This is contrary to those seen elsewhere, which argue that idea promotion should be kept separate from idea implementation (Janssen, 2000; Kanter, 1988; Perry-Smith & Mannucci, 2017). This research sees them as integrated, as the need for idea elaboration is somewhat reduced, given that the individual generates and implements the ideas.

Amabile and her colleagues present the componential understanding of creativity (Amabile, 1983; 1996; 1997; Amabile & Pratt, 2016), which theorises the components that contribute to creativity. The theory advances expertise, creative thinking and intrinsic motivation as a fundamental source of creativity. More broadly, Amabile (1988) presents other workplace-related factors as crucial to idea generation. These include motivation to innovate, resources and leadership (Amabile & Conti, 1999). Previously, Amabile had considered individuals' idea generation as a precursor to idea implementation in groups or organisations (Amabile, 1996), but more recently, seeing the over-simplicity of this assumption, she presented a reciprocal conceptualisation of this process (Amabile & Pratt, 2016). That said, because the psychological mechanism underlining the innovation process between individuals (as the case with Amabile and Pratt's model) might differ substantially from those involved when the same individual generates and implements ideas (Rosing & Zacher, 2017), the research was ground theoretically. By so doing, the effect of idea generation on implementation was theorised. Thereafter, the effect of idea implementation on idea generation through intrinsic motivation was grounded.

Creativity as a predictor of implementation

As Amabile et al. (1996) suggest, idea implementation is a function of an individual's creativity (Woodman et al., 1993; Amabile et al., 1996; Baer, 2012). Indeed, "without new ideas, there is nothing to implement" (Amabile & Pratt, 2016, p.160). It is theoretically established, as demonstrated by the idea journey (Perry-Smith & Mannucci, 2017), that all implementation originates from a creative idea: that individuals' creativity is the mother of all implementation (Redmond et al., 1993). The creativity of employees provides the raw materials for implementation (Shalley & Gilson, 2004). Although not all implementation emerges from a universal novel idea, within the context, it is expected that there is an idea that entails novelty (Amabile et al., 1996). Employees with high creativity search for and identify new ideas for solving problems, developing new solutions, methods and products (Oldham & Cummings, 1996). Furthermore, they discover new ways of using existing equipment (Gumusluoglu & Ilsev, 2009). Although Paulus (2002) cautioned that not all creative ideas are implemented, it is reasonable to expect that the more ideas people generate, the more likely it is that their ideas will be exploited.

Hypothesis 7-1: Employee idea generation predicts their idea implementation

Idea implementation as a predictor of creativity

The effectance motivation theory provides a framework to understand how implementation influences intrinsic motivation, together with the componential theory of creativity and innovation, which provides grounds for the association of intrinsic motivation and creativity. As such, it posits intrinsic motivation as an explanation of the effect that idea implementation has on its generation. Intrinsic motivation is broadly defined as the extent to which employees are excited about and engage in their work activity for its own sake (Utman, 1997). Harter (1978) conceptualised the effectance motivation theory based on the foundations of White (1952), who argued that individuals aspire to have a lasting effect upon their environment, particularly through competency. Effectance theory, at its core, advances the notion that mastery leads to people's intrinsic motivation, the desire to pursue new things and challenges (Ryan & Deci, 2000), and to engage more in the skill being executed (Harter, 1978). This is because of the positive effect their action has on the environment (Weinberg & Gould, 2018). When individuals generate ideas, they have an intent that those novel ideas would be beneficial (Harrington, 2018). When those ideas are implemented, and the intended

value is realised, consistent with Harter's propositions, the individual feels that they have had a positive effect on their environment because of the value (Amabile, 1983). This effect potentially contributes to their intrinsic motivation. So, it is expected that idea implementation could contribute to the intrinsic motivation of creativity.

Hypothesis 3-2a: Employee idea implementation predicts intrinsic motivation

Researchers have argued and presented evidence regarding the effect of intrinsic motivation on creativity (Auger & Woodman, 2016), as intrinsic motivation engenders inquisitiveness, risk-taking and cognitive flexibility (Utman, 1997; Shalley et al., 2004; Anger & Woodman, 2016). Since intrinsic motivation is a crucial prerequisite for creativity (Csikszentmihalyi & Sawyer, 1995; Woodman, Sawyer & Griffin, 1993; Glynn, 1996: Amabile, 1996; Shalley et al., 2004; Auger and Woodman, 2016; Perry-Smith & Mannucci, 2017), it follows that implementation promises to contribute to creativity through intrinsic motivation. Authors have suggested that intrinsic motivation and idea generation occur at nearly the same time, in such a way that when people are intrinsically motivated, they are almost immediately more open to risk and are likely to generate more ideas (Auger & Woodman, 2016). Similar arguments have been made drawing on motivational lines, supporting the notion that idea implementation could influence idea generation (Amabile & Pratt, 2016). It follows, therefore, that intrinsic motivation promises to contribute to creativity, logically implying that implementation will predict creativity through intrinsic motivation.

Hypothesis 3-2b: Employees' intrinsic motivation is related to creativity

Thus far, idea implementation as a source of intrinsic motivation has been grounded. Furthermore, it has been argued that intrinsic motivation is related to idea generation. As such, it becomes logical to expect that intrinsic motivation provides an explanation for the idea implementation to idea generation linkage.

Hypothesis 7-2: Employee idea implementation predicts idea generation indirectly through intrinsic motivation

The direct effects of idea implementation to generation cannot be excluded. Although the mediation of intrinsic motivation on the effect that idea implementation has on idea generation, it is possible that other factors could lead to a renewal of tensions. For instance, Paulus (2002) documented that some time in idea implementation, new problems might give rise to renewed ideation. It, therefore, becomes logical to expect that although intrinsic

motivation mediates the effect of idea implementation on idea generation, this mediation is likely partial.

Hypothesis 7-3: Intrinsic motivation provides a partial mediation of the idea implementation prediction of idea generation

Ultimately, these hypotheses present the conceptual intrinsic motivation mediated recursive model of idea generation and implementation. These theory-driven hypotheses suggest that idea generation has a reciprocal relationship with their implementation, which is partially explained by intrinsic motivation, as presented in Figure 3.1.

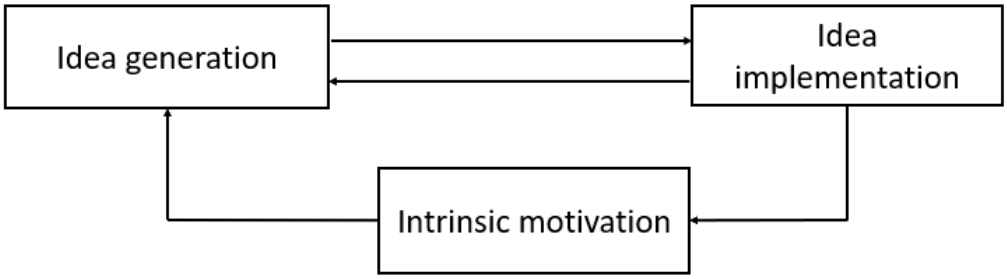


Figure 7.3: Conceptual model (Study A)

Methods

Data collection

As described in Chapter 2, the model of idea generation and implementation was tested with a sample of school teachers. Besides the importance of innovative teaching to socio-economic development, teachers as knowledge workers are innovative (Florida, 2005). Furthermore, the fixed-calendar nature of schools benefits this research given that the constructs under investigation relate to variables that are time-bound (Gorgievski & Hobfoll, 2008). So, such variables like holidays are naturally controlled for. The interplay over time was examined capitalising on the behavioural approach in evaluating life as it is lived, within the context of school teachers (see Bolger et al., 2003).

To test the three hypotheses, the first three waves of data collection for idea generation, implementation and intrinsic motivation were used. Data was collected by sending survey links via a teacher group on a professional online platform. The sample's mean age for the cohort across these three waves was 40.5 years old (SD = 5.8 years). 70% of

participants involved in this study were female, and their mean organisational tenure was 4.6 years (SD = 4.7 years). The mean teaching experience of the sample was 14 years (SD = 7 years). Of all participants, 23% had their highest qualification as a bachelor's degree while less than 1% were yet to complete a bachelor's degree, 32% had completed a postgraduate qualification with 36 achieving a master's degree, and 5% had doctoral-level qualifications. Some 612 teachers responded to the online diary during T1[3], and of those, another 531 made all entries at T2, with 525 (86%) making all entries during T3. Drop-out analyses were conducted using logistic regression. These analyses demonstrated that no demographic information predicted drop-out, nor did drop-out predict either creativity or implementation. In addition, as Little and Rubin (2014) advised, a missing completely at random test was conducted and its results showed that missing data was likely at random. Therefore, the full sample size was included, taking an advance of the Mplus 8.1 Full Information Maximum Likelihood estimation for analysis as it supports multiple imputations.

Except for control variables, there are three variables in this study: creativity, implementation, and intrinsic motivation - all three measured as latent variables using established scales. These scales were discussed extensively on page 24. Idea implementation and generation were measured using five items, each adapted from Janssen (2003). Sample items for idea generation included *'In the past week, how many new teaching ideas for difficult issues have you generated?'*. Items like *'In the past week, how many new teaching ideas did you put into practice?'* were used to measure idea implementation. Seven-point scales with number range indicators were used in responding to idea generation and implementation items. Intrinsic motivation was measured using three items from Amabile (1985). With items like *'In the past week, I enjoyed work because I found solutions to complex problems'*, seven-point agreement scales were used to measure the construct. In addition, age, professional tenure, organisational tenure, education, subject taught, and gender were controlled for.

[3] As with T2 and T3, T1 reference to time point 1 or week 1 for brevity

Data analysis

Prior analysis

Prior to testing hypothesised model, construct validity tests were conducted, using confirmatory factor analysis (CFA) to ensure that the scales are valid and unique (Kline, 2014). During this test, the hypothesised model, a three-factor model of idea generation, implementation and intrinsic motivation, was compared with two- and one-factor alternatives. The two-factor model assumed both aspects of innovation, idea generation and implementation loaded on the same factor. The single factor model also offers information on common method bias. In all, the CFA established that the hypothesised factor structure was consistent with underlining patterns within the data. Elsewhere, the discriminant validity was conducted using the average variance extracted (AVE) set against maximum share variance (MSV) test (Farrell, 2010). As Hair et al. (2014) advised, square root value of AVE was compared to the corresponding MSV, as a result of AVE's sensitivity to overestimate item loading (*cf.* Lohmöller 1989). This demonstrates that latent variables were distinct.

Longitudinal factorial invariance tests were also carried out to ensure that changes in implementation and creativity were due to actual changes, in contrast to changes in the measurement model (Brown, 2006). An unconstrained model was first constructed with data from the three-time points. This unconstrained model was then compared with alternative models with weak invariance (with all factor loadings constrained) and strong invariance (with factor loadings and intercepts constrained), while freeing up latent means (Byrne, 2001). As discussed on page 30, the CFI, TLI, SRMR, RMSEA were employed in testing model fitness (Bentler, 1990; Kline, 1989), whilst the chi-square (χ^2) and CFI difference were used to compare nested models.

Hypothesis testing

The reciprocity of creativity and implementation was tested, together with the explanation of intrinsic motivation, using the full three-wave, cross-lagged model within the structural equation model (SEM) framework. In addition, as earlier acknowledged, because the potential effect intrinsic motivation has on idea generation appears almost concurrently, a direct path between intrinsic motivation and idea generation at all time points were included. The cross-lagged analysis procedure compared models based on the strengths of their

relationships (Berrington, 2006). The cross-lagged panel model is noted for its ability to examine for temporal stability, yet it has established limitations with constructs that are considered as person-specific (Hamaker, Kuiper & Grasman, 2015). Idea generation and implementation appear to be person-specific constructs as they differ considerably between individuals (Rosing et al., 2018). That is, some individuals tend to generate or implement more ideas in comparison to others. Although the cross-lagged panel model corrects for temporal stability (i.e. stability across time), by including autoregressive parameters, its ability to control for trait-like stability is limited (Rogosa, 1980). With trait-like stability, stability across individuals, the basic cross-lagged panel model may incorrectly label variable as causally dominant. Even worse, it could detect spurious relationships or fail to detect a relationship (for further discussion, see Hamaker, Kuiper & Grasman, 2015). In response, following Usami, Murayama and Hamaker (2018), the random intercept cross-lagged panel model which effectively corrects for trait-like stability (Bear, 2010; Bear & Oldham, 2006; Raja & John, 2010) was adopted (see Figure 3.2).

In the analytic model (Figure 3.2), latent constructs (generation, motivation, implementation) were decomposed into *between parts* (person-specific of generation, motivation, implementation) and *within part* (temporal deviation from the person-specific). The between aspects of measures account for the trait-like or person-specific aspect of the construct that is time-variant, whilst the within captures the changes across time. These changes formed the basis for the cross-lagged analysis.

For all mediation analysis, significant paths between latent variables were investigated (Mackinnon, 2013). Additionally, a thorough analysis of indirect effects was conducted using multiplication of direct effects and bootstrapping. Bootstrapping involved randomly examining drawn, replaceable, subsamples of the population (Preacher & Hayes, 2008). As such, the bootstrapped confidence intervals from 1000 iterations was included, as part of the mediational results for indirect effects. Still, misalignments between the sample and bootstrap distribution potentially lead to inaccurate confidence interval estimation. This possibility was mitigated against using the bias-corrected bootstrapping, which adjust for bias in the bootstrap distribution.

There was no evidence of non-normality. Thus, the Full Information Maximum Likelihood estimation procedure was adopted because there were missing observations in the data. This estimator ensures that there are multiple imputations for missing observations (Asparouhov & Muthen, 2010).

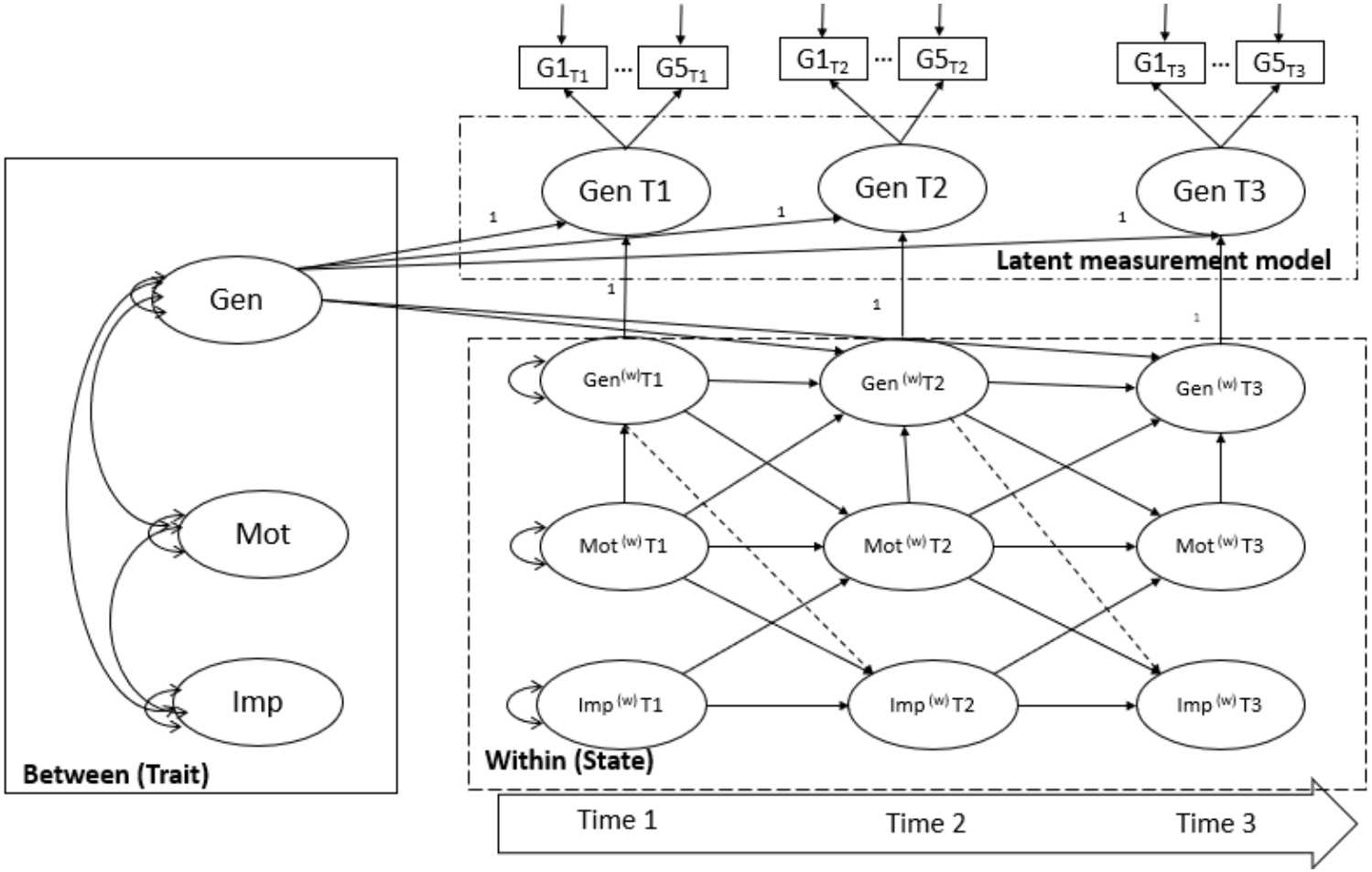


Diagram key based on idea generation at T1 - Measured idea generation at T1 Gen T1; Response score for Idea generation Item 1 at T1 $G1_{T1}$. $Gen^{(w)}T1$ state measurement of idea generation at T1. Note that all variables were measured as latent variables. The idea implementation and intrinsic motivation variables were estimated like that of idea generation, but not presented in this figure for ease of comprehension. ---- specified direct effects.

Figure 7.4: Analytic model (Study A)

Results

Descriptive statistics

Measurement model. The CFA report highlights that the hypothesised factor structure seems to accord with patterns in the data and that latent variables are distinct. Firstly, the hypothesised model of three latent variables (creativity, implementation and intrinsic motivation) across all time points, with fit statistics, $\chi^2(666) = 1035.32$, CFI = .97, TLI = .96, RMSEA =.033, SRMR = .035, had exceptional fit to the data (Cohen, 1988). Further, this model yields significantly better fit than the alternative two-factor models ($\Delta\chi^2(21) = 3588$, $p < .001$, ΔCFI = .31) and the single model ($\Delta\chi^2(33) = 5164$, $p < .001$, ΔCFI = .45). These are indicative that the data aligns with the hypothesised model. The result underlines idea generation and implementation being unique yet with related constructs.

On the final note, the measurement (of creativity and implementation) across the three waves failed to achieve strong factorial invariance across the three time points. Having achieved weak measurement invariance across the three time points ($\Delta\chi^2(16) = 19.98$, $p > .2$, ΔCFI < .01), strong factorial invariance was tested for. Results show that there were significant differences between the simpler strong constraint model and the weak model ($\Delta\chi^2(26) = 54.23$, $p < .0001$, ΔCFI > .01). By freeing the intercept of two implementation items, the model achieved strong measurement invariance ($\Delta\chi^2(16) = 31.2$, $p = .092$, ΔCFI < .00).

Table 7.4: CFA and invariance testing results (Study A)

Model	Specifics	χ^2 (df)	CFI	TLI	RMSEA	SRMR	Δ Model	$\Delta\chi^2$ (Δdf)	ΔCFI
time 1,2,3									
M1) Full model	IG, II, IM	1035 (666)	0.97	0.96	0.03	0.04			
M2) Two-factor model	(IG+II), IM	4623 (687)	0.65	0.63	0.10	0.10	M2-M1	3588 (41)**	0.31
M3) One-factor model	All	6199 (699)	0.52	0.49	0.12	0.18	M3-M1	1576 (12)**	0.14
measurement invariance									
M1) Configural invariance	Configural	1035 (666)	0.97	0.96	0.03	0.04			
M2) Weak invariance	Metric	1049 (686)	0.96	0.96	0.03	0.04	M2-M1	14 (20) ns	0.01
M3) Strong invariance	Scalar	1103 (712)	0.95	0.94	0.04	0.05	M3-M2	54 (26) *	0.01
M4) Partial invariance		1080 (708)	0.96	0.95	0.03	0.04	M4-M2	31.2 (20)†	0.00

Note: n = 612. * $p < 0.01$, ** $p < 0.001$, † $P = 0.092$. IG Idea Generation II Idea Implementation IM Intrinsic Motivation

Prior analysis confirms that the measurement model not only retained the hypothesised expectation but also was valid and reliable, in addition to achieving a partially strong measurement invariance. Given that this study interest lies in the exploration of relationships and covariances, this level of invariance is acceptable (Liu, Millsap, West, Tein, Tanaka & Grimm, 2017).

In addition to the CFA, Table 3.1 reports the descriptive statistics, scale reliability information (within the three waves) and bivariate correlations for variables across both time points. Latent constructs at all measurement points had Cronbach alphas exceeding 0.75. With all items having at least .51 standardised loading on their factor, most items had very good or excellent loading (Fidell, Tabachnick & Ullman, 2007). Importantly, the square root and the AVE were always more than the MSV of 0.36. This outcome supports the discriminant and convergent validity as well as their reliability (Cohen, 1988; John & Benet-Martinez, 2000; Peterson & Kim, 2013).

As anticipated, there are significant and positive snapshot associations between intrinsic motivation, creativity and implementation at time one. However, during subsequent weeks, the linkage between implementation and creativity progressively lost its significance (T2: $r = 0.13$, $p < .001$; T3: $r = .07$, $p = .16$), while other associations sustained their significant relationships (see Table 3.2 for details). Importantly, as Auger and Woodman (2016) alluded to, the association between intrinsic motivation and idea generation was considerably greater within the same week than across weeks. This supports the assumption that the influence of intrinsic motivation on idea generation is occurs within the same timeframe. The centrality of intrinsic motivation in the innovation process, consistent with Amabile's (1996) argument, was clear as its association with idea generation and implementation was mostly strong at all time points.

Of the three constructs under investigation, only idea generation lacked inertia as its correlation between times was consistently insignificant. Intrinsic motivation and idea implementation had significant carryover correlations through three weeks of this study. Inconsistent relationship between creativity and implementation, although surprising at first, could parallel findings of irregularity in results of studies as eloquently illustrated by Sarooghi et al. (2015). Furthermore, the limited stability of implementation and creativity has been empirically demonstrated elsewhere (Daniels et al., 2011).

Table 7.5: Descriptive statistics (Study A)

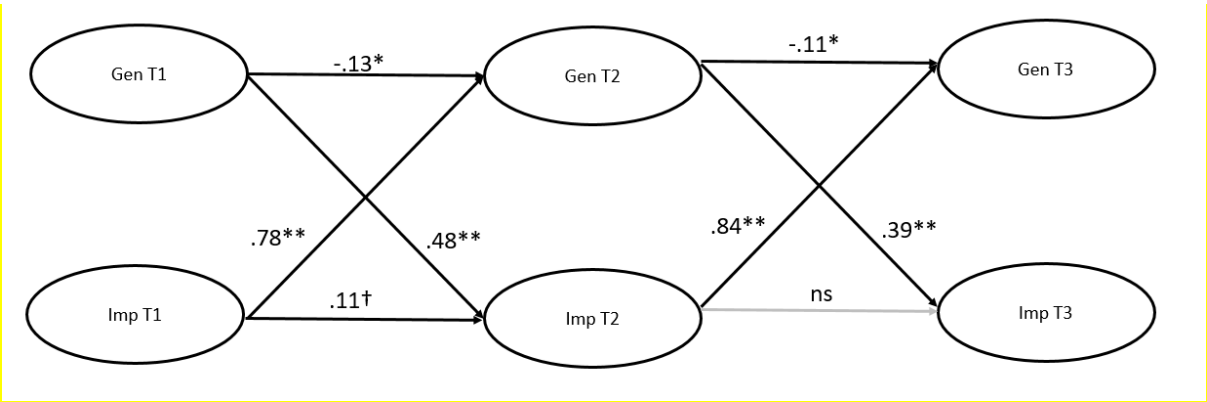
	Mean (SD)	1	2	3	4	5	6	7	8	9
1. Gen1	3.02 (1.42)	(0.84)								
2. Imp1	2.91 (1.27)	0.28**	(0.83)							
3. Mot1	2.46 (0.96)	0.57**	0.18**	(0.87)						
4. Gen2	1.90 (1.08)	0.14*	0.73**	0.08*	(0.81)					
5. Imp2	2.92 (1.32)	0.54**	0.23**	0.33**	0.13**	(0.79)				
6. Mot2	2.68 (1.78)	0.30**	0.67**	0.16**	0.72**	0.21**	(0.81)			
7. Gen3	2.64 (0.87)	0.44**	0.14**	0.26**	0.04	0.80**	0.14**	(0.83)		
8. Imp3	2.43 (1.07)	0.12*	0.41**	0.07*	0.53**	0.11*	0.46**	0.07	(0.80)	
9. Mot3	1.91 (1.37)	0.48**	0.25**	0.28**	0.18**	0.85**	0.26**	0.83**	0.13*	(0.89)

Notes * p <0.05; ** p < 0.001, Gen Idea Generation, Imp Idea Implementation Mot Intrinsic Motivation alpha in diagonal parenthesis

Hypothesis testing

As earlier noted, an integral examination of all the hypotheses was conducted adopting the SEM perspective. Because of trait-like nature of some of the variables under investigation (Hackman & Oldham, 1980; Raja & John, 2010), the random intercept cross-lagged model was utilised to test the hypothesised process. Overall, the full model achieved a good fit (χ^2 (889) = 1661.35, CFI = .95, TLI = .95, RMSEA = 0.041 [90% CI 0.036, 0.047], SRMR = 0.049).

In view of examining the relative strengths of the linkages under investigation, the standardised coefficient of all parameters was reported (Figure 3.3). The model accounts for a considerable proportion of variation of dependent variables (Generation T3 R^2= .74; Implementation at T3 R^2 = .36). As evident in Figure 3.3, after controlling for construct stability and person specificity across time points, idea generation at prior time points significantly predicted implementation.



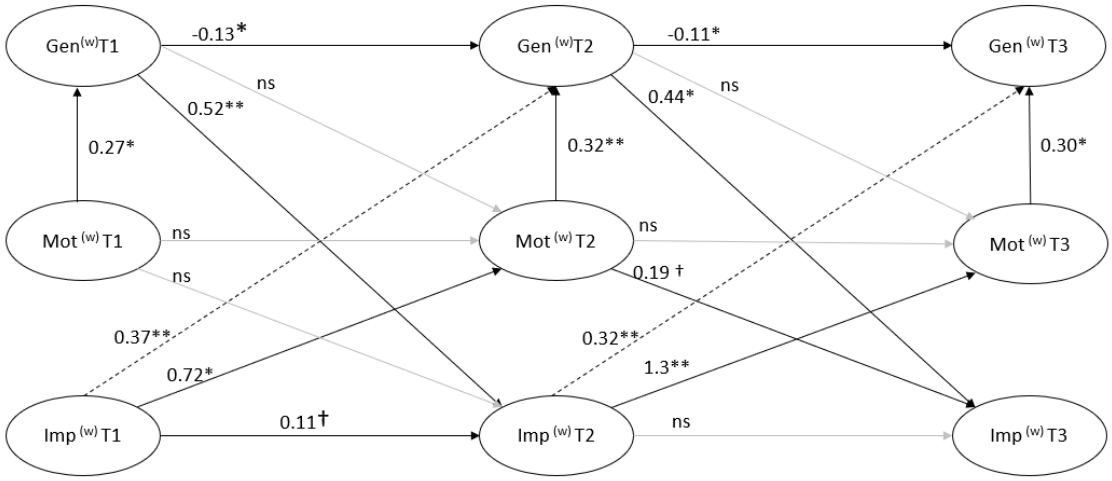
Note: n = 612. † p < .1; * p < .05, ** p < .01. Note that all variables were estimated as latent variables but observed indicators and state variables are not presented in this figure for ease of comprehension

Figure 7.5: Outcomes of the cross-lagged analysis (standardised coefficients; Study A)

This was analogous to the total effect that implementation in the preceding period had on idea generation (implementation T1 to generation T2, β = .78, p < 0.001; implementation T2 to generation T3, β = .72, p < 0.001). These effects suggest a reciprocal relationship between idea generation and implementation, supporting Hypotheses 1 and 2. In addition to clarifying this underlining relationship structure, these findings are also indicative that the

relative effect of idea implementation on generation is stronger than idea generation on implementation.

As illustrated in Figure 3.4, it was found that intrinsic motivation partially mediates the relationship between implementation at T1 and idea generation at T2. This was such that there was a significant indirect effect (β = .463, p < 0.001, 95% percentile bootstrap CI [.239, .699]). Despite this, the direct effect of idea implementation on idea generation was still significant (β = .375, p < 0.001, 95% percentile bootstrap CI [.056, .672]). On a similar account, during the next phase, indirect effects (β = .296, p < 0.001, 95% percentile bootstrap CI [.189, .403]) and the direct effects (β = .484, p < 0.001, 95% percentile bootstrap CI [.343, .637]) were again significant. Thus, Hypothesis 3-2 that intrinsic motivation partially explained the idea implementation's influence on idea generation was supported.



Note: n = 612. * p < 0.01, ** p < 0.001. --- Direct effect. For ease of comprehension, in this figure all variables were estimated as latent variables, but observed indicators and state variables are not presented. Insignificant paths are also omitted.

Figure 7.6: Mediation analysis (Study A)

Ad-hoc analysis

Further analysis presented somewhat surprising results, as idea generation had significant negative carryovers (e.g. Generation T1 to Generation T2, β = -.135, p = .013; Generation T2 to Generation T3, β = -.111, p = 0.041). Despite this inverse relationship, the idea generation and implementation still seem to reinforce themselves over time, as total effects show. The mediation analysis of the self-reinforcement of generation and implementation revealed that while there was a significant total effect between generation T1

and generation T3 (β = .407, p < 0.001, 95% percentile bootstrap CI [.309, .521]), only the indirect path through implementation T2 was significant (β = 0.222, p = 0.011, 95% percentile bootstrap CI [.122, .406]). The case argument could be held for idea implementation, as its first-order auto-regression was insignificant. Yet there was significant total effect between implementation T1 and implementation T3 through idea generation T2. In this way, it appears that the effect of idea generation on subsequent idea generation is likely through idea implementation. So, in all, it was found that idea implementation seems to provide full meditation of idea generation reinforcing itself over time, and vice-versa.

Discussion

This study set out to explore the association of idea generation and idea implementation by testing the nature of the relationship and the psychological explanation for it. In so doing, a full panel analysis on the innovation process was conducted, with intrinsic motivation taking a central role. There was a significant association between the spill over of creativity on implementation and implementation on creativity, which has implications for the innovation process. Elsewhere, intrinsic motivation provided partial psychological rationalisation for the feedback idea implementation to idea generation causal linkage.

Research implications

This evidence is supportive of the hypothesis that there is a reciprocal relationship between creativity and implementation (otherwise an interplay). In addition to the earlier proposed influence that people's creativity has on their innovative behaviour, grounded in the effectance theory (White, 1959), this study results demonstrate that individuals' idea implementability could also predict their creativity. Implementation, being new and delivering value, has positive effects on the individual and their social context. This generates intrinsic motivation according to the effectance theory (Harter, 1978), which is central to creativity (Amabile, 1996; Woodman et al., 2003). This confirms the argument that the innovative process is recursive.

Consequently, the study lends support in some ways to the overarching reciprocal propositions of the dynamic componential model of creativity and innovation (Amabile & Pratt, 2016). Still, it presents evidence that individual idea generation is reciprocally related to their implementation. This supports Amabile and Pratt's proposition as they argue over the association between individuals' creativity and their organisational implementations;

evidence in this chapter shows that this is the case, at least, when the person implements the ideas. This finding had significant bearings on how the process connects with antecedents and outcomes. Because it is established that the association of idea generation and implementation is reciprocal, strengthening the synergy could enable both sub-processes, which resonates with the core goal of the paradox approach to ambidexterity. Though other studies have presented the direct effect of leadership on either of idea generation or implementation, this reciprocal understanding enables further investigation as to how leadership could shape the innovation synergy as considered in Study C.

The results included both direct and indirect support for the proposition that intrinsic motivation explained this reverse causal link (implementation to creativity). The indirect effect could be because a successful solution generates intrinsic motivation (Harter, 1978), which in turn supports subsequent creativity (Amabile, 1983). However, unbeneficial or partially beneficial implementation of ideas leads to further creativity as it potentiates the ideation of new ways to generate value. Indeed, as Paulus (2002) argued, idea implementation leads to further problems requiring idea generation. This underscores the dialectic resolution of tension leading to a new tension phenomenon, within ambidexterity research (Smith & Lewis, 2011; Lewis & Smith, 2014). When this occurs, although the context problem remains or is partially solved, yet because the idea journey from idea generation to implementation is complete, the tensions between idea generation and implementation are resolved within that iteration of the innovation process (Lewis & Smith, 2014). This potentiates another idea being generated for the same problem, renewing tensions in the system (Lewis, 2000).

Another explanation lies within the Amabile (1983) framework, which demonstrates that while intrinsic motivation is a fundamental building component of creativity, creative potential is also critical. In successfully implementing ideas, it is possible that an individual's creative self-efficacy could have been enhanced (Bandura, 1977). The person becomes more confident about their ability to implement ideas, thereby reducing uncertainty. Although this is still motivation, it seemingly contributes to individuals' creative potential (Amabile, 1983). As such, further research would be needed to elucidate the psychological mechanisms that underpin this effect that idea implementation has on generation.

Elsewhere, this chapter's findings suggest that, after accounting for the roles of idea generation and intrinsic motivation, the paths between idea implementations across time were insignificant. In other words, idea implementation's prediction of subsequent idea

implementations is always mediated by idea generation and intrinsic motivation. This is indicative of the centrality of idea implementation in the continual generation of ideas. It becomes conceivable that, on the one hand, this novel contribution confirms Amabile and Pratt's propositions that "creativity is not really the fuzzy front end of innovation; rather the fuzzy middle part" (Amabile & Pratt, 2016, p.166). Yet this finding also suggests that idea implementation could also be a middle part, thereby completing the interplay of both constructs. These contributions enrich the theoretical understanding of the innovation process, as they provide empirical backing for the process being reciprocal and explained by motivation. Moreover, because of the reciprocal nature of this innovation interplay, it becomes logical that in looking for ways to boost employee innovativeness, research attention needs to be turned to the linkages between idea generation and implementation (Papachroni et al., 2015). In this way, both constructs are enhanced over time.

Theoretical implications

As highlighted earlier, this chapter's findings have both theoretical and practical implications. Previously, based on the innovation process, the relationship between creativity and implementation was simplified because it assumes that the more creative individuals are, the more innovative they will be. The outcomes of this study illustrate that the association of these constructs is indeed an interplay. By establishing the reciprocity of this relationship, this study improves the theoretical understanding of the innovation process. Furthermore, it advances the process being paradoxical and bears important conceptual implications. For instance, efforts to improve the innovation process need to enable systems that simultaneously enhance both idea generation and their implementation. Such efforts should also aim to improve the synergy between both constructs. On another account, the cost and benefit of the process should not be limited to either subsystem, but researchers need to consider the effect of the actual interplay between both idea generation and implementation. Moreover, mediation analysis show that this reverse relationship is partially centred on the motivation psychological mechanism drawing on the effectance theory.

The initial idea generation to idea implementation conceptualisation of the innovation process could be aligned with the contingency approach to ambidexterity (Smith & Lewis, 2011). Under this proposition, the resolution of tension could be achieved by adopting a frame such that individuals could either focus on idea generation or implementation. Yet to deliver value through their idea generation, employees need to implement their ideas,

particularly knowledge works (Dul et al., 2011). Establishing the paradoxical nature of the innovation calls for people to both generate and implement their ideas. Thus, in the resolution of ambidexterity within the innovation process, this study advances the both-of approach instead of the either/or approach. By so doing, in agreement with Lewis and Smith (2014), this approach to tension resolution requires the availability of resource and the right type of leadership.

Managerial implications

On a practical level, organisations looking for new ideas can, through the implementation of current ideas, generate new ideas. The reciprocal relationship between idea generation and implementation suggests that people do not initiate innovation by generating ideas; it is possible that innovativeness could commence by implementing ideas. It is important to highlight that idea generation does not sustainably exist in complete isolation of idea implementation, each of them "needs the other to sustain its presence" (Clegg, 2002, p.29). So, being that idea generation and implementation consist of differing activities, firms need to look forward beyond their employees being creative, and instead implement the employees' own ideas (Tushmand & O'Reilly, 1996).

The outcomes of the tests carried out in this chapter suggest that intrinsic motivation is the core of the interplay of idea generation and implementation. Managers are looking for ways to ensure that their employees are intrinsically motivated. The findings further highlight that implementing ideas could generate intrinsic motivation, which provides an opportunity for organisations. This raises the need for establishments to drive initiatives that enable idea implementation. Moreover, according to the paradoxical field of study, idea generation and implementation have differing activities. So, firms need to look forward, not only to engage their employees in generating and implementing ideas (Tushmand & O'Reilly, 1996), but also in implementing the employees' own ideas.

Research recommendations

This study had capitalised on a shortitudinal research design in establishing the interplay of creativity and implementation. Although it improves the potential of successfully examining temporal order of relationships between constructs, this method is not without limitation. Firstly, the assumption of a time lag of a week is suitable for the study based on the typical weekly work cycle of teachers. Whilst the one-week lag seems justified (e.g. see

Daniels et al., 2011), I am not convinced that this puts to rest all concerns on the external validity of results. The fact that these findings were hypothesised lends credence to their validity, but studies exploring another context in similar studies might need to adopt a differing time frame.

Additionally, this full mediation of a cross-lagged model offers further insights. It furthers the criticality of the role of the time frame in the association of implementation and creativity being theorised. The outcomes point to the construct's first-order autoregressions being inconsistent, whilst their second-order appears significant. Whilst this is not conclusive, it is suggestive of an underlining mechanism that is time- or event-dependent. Though the choice was justified based on previous research (Daniels et al., 2011), this actual time frame accorded with schools' typical work cycles. One wonders how the results would have changed if the time frame was two weeks. It is likely that the first-order autocorrelation would be significant. These understandings raise questions on the nature of the oscillation between creativity and implementation. As such, theoretical understanding of the innovation process would benefit from further research in understanding if this oscillation is time or episodically bound (for example work cycle, cf. Beal, Weiss, Barros, & MacDermid, 2005). Moreover, it would be useful to understand if there are factors that could accelerate or slow down the process.

On a similar account, it was seen that there were initial correlations between creativity and implementation (during waves 1 and 2), but the significance of this association disappeared subsequently. Given this inconsistency, a further understanding of the interplay of both constructs at a more detailed level over time is needed. This research joins voices with Dormann and Griffin (2015) in arguing proposing time as a critical factor on the phenomenon of this nature, "and we call for more 'shortitudinal' studies in the future" (p.489). Precisely, a carefully planned intensive analysis exploring both the short- and long-term effects of factors on this interplay could further elucidate the innovation process.

This study explored the interplay of individuals' idea generation and implementation as important factors for organisational benefits. Given the centrality of motivation to both constructs (Amabile, 1983), it will be useful to consider the effect of these constructs to the individuals (Anderson et al., 2014). This is because motivation can be generated when needs are satisfied (e.g. Herzberg, Maunser, & Snyderman, 1959; Maslow, 1943; Ryan & Deci, 2001), so understanding how these factors are beneficial to the individual would be critical to achieving sustainability of the innovation processes. Future research in exploring the effects

of creativity and implementation on individuals, especially, the effect of their interplay over a long time, is highly encouraged (cf. Anderson et al., 2014).

Limitation

The convenient nature of the sample and its context, and also the singular data collection approach, could limit this research. Although studies of this nature are not uncommon within the psychological and organisational research fields, there is a need to validate these findings elsewhere. For instance, the strength of the association between creativity and implementation might not be as strong in a more risk-averse society (Sagoohi et al., 2015). Therefore, future research is required to validate or set conditions for the proceeds of this chapter in other cultural and professional settings.

The limitations of re-test effects and recall bias in research designs of these nature are acknowledged. It is possible that participants over the course of the three waves might be getting used to the items on the scale and they might not recall all the ideas they have generated within the week. Whilst actions were taken to mitigate these possibilities (e.g. using response intervals), given that most of these findings accorded with the hypothesised theoretical expectations, there is motivation to consider the design as vigorous enough for testing the suppositions.

Thirdly, the study was based on single-source, self-reported measures. Although this is theoretically justifiable given the nature of constructs under investigation, for instance, creativity being ideas-generated, it would be difficult to measure the ideas an individual generated within a time frame without asking the individual. But implementation could be measured more objectively by adopting observational techniques. An interesting extension or validation of these findings could be to adopt a more observational or triangulated approach in measuring idea implementation, whilst interviewing participants on their creativity. This approach promises to further unveil latent contextual mechanisms of this interplay, particularly considering the partial mediation of intrinsic motivation.

Conclusions

The importance of creativity and implementation are well established (see Anderson et al., 2014). However, the effect of creativity on an organisation's performances can only be realised when the creativity of employees is implemented (West, 2002), thus raising the profile of an integrated approach in studying the constructs. Until now, creativity is assumed

to influence implementation, according to the innovation process model (Amabile, 1988). This simplistic proposition has been challenged as motivational theories (e.g. Harter, 1978) present bases to challenge the theory that there is a one-way causal creativity–implementation linkage. This study advances an interplay between creativity and implementation over time by presenting evidence of a reciprocal relationship between both constructs, which improves theoretical understanding of the innovation process as a unit. The newly introduced implementation to creativity causal linkage was partially explained by intrinsic motivation.

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As highlighted in the research implication, Chapter 4 focuses on understanding benefits that the innovation process offers employees. Following this thought line, I advance well-being as a potential outcome of innovation. However, research considering the association of idea implementation and well-being has presented differing, sometimes contradictory, results. During the subsequent chapter, I discuss the role of servant leadership in ensuring idea implementation has a beneficial influence on well-being through the provision of personal and job resources.

Chapter 4. Innovation and well-being: Servant Leadership resolving competing theoretical perspectives – Study B

Background

Innovation is characteristically assumed to be beneficial (Engelbrecht, 2014). There is theoretical and empirical support for the organisational and group benefits of innovation (see Anderson et al., 2014). This is because innovation ensures that organisations are agile and competitive within an increasingly complex and dynamic business environment (Higgins, 1995). However, its effect on employees is less convincing as too little is known about the cost or benefit of innovation on employees (Anderson et al., 2014). In the few accounts exploring its costs or benefits to employees, the results were double-edged, contrasting and sometimes contradictory (Engelbrecht, 2014). This is particularly the case with well-being where there is supportive evidence of innovation both enhancing well-being (e.g. Dolan & Metcalfe, 2012) and adversely affecting it (e.g. Gonzalex-Roma & Hernandez, 2016). Well-being is considered to be the subjective assessment of life and/or job satisfaction, happiness and the relative absence of anxiety (Michalos, 2008; Waterman, 1993).

These inconsistencies highlight the field's limited understanding of *when* innovation positively affects well-being. It is surprising that research attention to the conditions required for innovation to be beneficial to employees is rare (Anderson et al., 2014). Because the dysfunctional effects of innovation are associated with increased work pressure and risk during the *idea implementation* aspect of the innovation process (Hughes et al., 2018; West, 2002), according to the Job Demand–Resource theory (Bakker & Demerouti, 2007), availability of resource could mitigate these effects. Since servant leaders, because they put their followers first, are likely to make resource available to employees (Greenleaf, 1977), mitigating the adverse and boosting the positive effect of innovation, the argument that servant leadership is a condition for the idea implementation-well-being linkage to be positive is presented.

Servant leaders are known to empower their employees by developing their self-efficacy and granting them autonomy (Graham, 1991), which could, at the least, relieve the negative effect of potential idea implementation on their well-being. These leaders emphasise employee development, through which they contribute to their employees' self-efficacy (Liden et al., 2008). With high self-efficacy, individuals' believe in their ability to meet given

levels of attainment (Bandura, 1998) and employees are less susceptible to adverse effects of demand. This is because they perceive demand to be less intensive (Salanova, Peiro & Schaufeli, 2002). Like the person resource, self-efficacy, servant leaders allow their followers to go about their work as they see fit, provided the outcome is for common good (Hoch et al., 2018). So, these employees have significant autonomy and could alter their work patterns in ways that the adverse effect of idea implementation is attenuated (Karasek, 1979). So, the regulation of servant leadership on the linkage between idea implementation and well-being could be occurring through the personal resource, self-efficacy and work resource, autonomy. It is therefore surprising to note that research into if and how leaders' behaviours could shape this association is scarce, given their crucial role in ensuring employees are happy and innovative at work (Hughes et al., 2018; Rosing et al., 2011; Rosing et al. 2011; Sarooghi et al., 2015).

In response, this study is grounded on the Job Demand–Resource theory, adopting the structural equation modelling with data drawn from the fourth and fifth data waves, resolving this theoretical tension by exploring under what condition innovation positively influences well-being and how that condition is enacted. Specifically, because servant leadership aims to support its followers by providing them with the resources necessary to meet their needs as a priority (Greenleaf, 1977; 1998), this study advances servant leadership as a moderator of the relationship between idea implementation and well-being. In addition, it highlights self-efficacy and autonomy as psychological explanations of the theoretical mechanism informing this conditionality. As such, this study contributes to knowledge in at least four ways. Firstly, it adds to the body of knowledge on understanding the effect of innovation by resolving the theoretical misalignment between health impairment and motivational lines of research. This is achieved by moderating the innovation-well-being relationship by servant leadership. As such, it not only responds to calls to consider the dysfunctional aspects of innovation (e.g. Anderson et al., 2014), but further presents evidence as to under what condition the dysfunctionality occurs. Secondly, the study tests the conceptual rationale for the leadership condition. By so doing, it accounts for the differential roles that perceived autonomy and self-efficacy play in alleviating work demand. This contributes to understanding the alignment of personal and job resource within the Job Demand–Resource theory and presents their relative effect. Therefore, it responds to research interest in the relative effectivity of work and personal resource within Job Demand–Resource theory (see Bakker & Demerouti, 2017; Schaufeli & Taris, 2014). Furthermore, by interfacing the Job Demand–Resource and servant

leadership theories, the present study has suggestions for the effectance theory. Within the study context, this study advances servant leadership as a condition necessary for happiness derived from an effect on the environment (Harter, 1978).

Theoretical framework

The relationship between idea implementation and well-being has presented contradictory findings empirically. These results seem to accord with differing theoretical perspectives. In response, in the development of hypotheses, a discussion of these perspectives is presented. Thereafter, how servant leadership regulates the effect of idea implementation on well-being is conceptualised. This section is concluded by theoretically grounding the rationalisation of the conditional process through which the regularisation effect of servant leadership occurs.

Idea implementation and well-being

The motivational fields of research present an argument for the association of idea implementation and well-being to be beneficial to employees. White (1959) argued that individuals derive subjective reward when they impose an effect on their environment. Because of this subjectively rewarding experience, people develop effectance motivation. White's ideas were further developed by Harter (1978) to include a desire to have an influence on the environment, successfully dealing with the environment, and a feeling of efficacy. Although similar to self-efficacy, where the reward is situated before the effect, this effectance theory positions reward motivation after the action. This theory provides a framework to understand the positive influence idea implementation could have on well-being.

Innovation, by the beneficial changes or products introduced, generates improvements in work outcomes (e.g. Anderson et al., 2014). Because those outcomes affect the external environment, according to the effectance theory (Harter, 1979; White, 1959), these outcomes generate a sense of achievement, fulfilment and self-actualisation (cf. Herzberg, 1966). Considering well-being is the subjective assessment of individuals, these could ultimately stimulate a state of satisfaction and happiness. Taken together, we therefore expect that idea implementation will predict well-being; however, the direction of this is unclear.

Conversely, the health impairment line of research presents an alternative (Caplan et al., 1975; Selye, 1976; Theorell, 1976, Bakker et al., 2003), yet contradictory, proposition.

Job demand is the limited or potential loss of personal resources to cope with a work-related expectation. Work demands are stressful if individuals perceive that they have limited time or capacity to execute a set of activities (Hobfoll, 2002), resulting in employees increasing their personal effort expenditure to address demands (Schaufeli & Taris, 2014). This depletes employees' resources in turn, leading to adverse effects on motivation, energy and health (Bakker & Demerouti, 2007). Innovation's implementation of ideas aspect could induce changes to the work process (Gonzalez-Roma & Hernandez, 2016; Klein & Knight, 2005). Further, there are additional expectations associated with idea implementation. For instance, implementation is seen to improve a situation or deliver value suggests (Amabile, 1998), which could lead to increased uncertainty and anxiety (Engelbrecht, 2014). Changes in work process and expectation increase work demand, as individuals need to adjust to new ways of working (Karasek & Theorek, 1990). Because idea implementation increases uncertainty and anxiety, in addition to work demand, idea implementation should have an adverse effect on well-being.

Hypothesis 7-4: Employee idea implementation is related to well-being

Servant leadership

This differing theoretical position on the effect of idea implementation on subjective well-being unveils the possibility of the conditions necessary for this relationship to be positive. The servant leadership theoretical perspective – leadership that emphasises the serving of followers (Greenleaf, 1970; Greenleaf, 1977) – offers an understanding and resolution of the theoretical tension between the stress and effectance theories. Servant leadership, in contrast to other leadership behaviours, has its core in the deep-rooted desire to meet followers' needs. Servant leadership is "an understanding and practice of leadership that places the good of those led over the self-interest of the leader" (Hale & Fields, 2007, p.397). As such, servant leaders provide their followers with support, thereby enabling them to achieve the followers' objectives.

The Job Demand–Resource theory has a fundamental proposition that resources moderate the relationship between demand and well-being (Bakker et al. 2005; cf. Karasek 1979); therefore, it follows that, even when idea implementation generates increased work demand, servant leaders enhance employees' coping resources through their support, and this ensures that employees are able to meet the needs of idea implementation. Following this line

of argument, servant leadership is positioned as a factor that shapes the relationship between idea implementation and well-being.

Hypothesis 7-5: Servant leadership moderates the relationship between idea implementation and well-being in such a way that when servant leadership is high, the relationship is positive, and when servant leadership is low, the relationship is negative

The conditions of autonomy and self-efficacy

This conditional effect of servant leadership is explained by its provision of personal and work resource. Still drawing on the Job Demand–Resource theory, resources could be personal or work-related (Schaufeli & Taris, 2014). Servant leadership is seen to enhance employee self-efficacy, a personal resource (Chen, Zhu & Zhou, 2015), and their autonomy, a job resource (Chiniara & Bentein, 2016; Graham, 1991). Because self-efficacy and perceived autonomy are arguably moderators of the idea implementation and well-being linkage, a dual mediated moderating process involving the effect of servant leadership occurring through the conditional effects of self-efficacy and autonomy on the relationship between idea implementation and well-being is proposed (Baron & Kenny, 1986; Morgan-Lopez & MacKinnon, 2006). In simple terms, servant leadership affects employee self-efficacy and autonomy, and all three constructs shape the association of idea implementation and well-being.

Servant leadership, by ensuring employees are more autonomous in how they go about their jobs (Graham, 1991), could buffer the negative effect of innovation on well-being. Autonomy within this context involves the delegation of responsibility from leadership to followers, which increases their decision-making ability in completing their jobs (Leach et al., 2003). Because of autonomy, employees are better positioned to access information, support and resource necessary to influence how they go about their jobs (Kanter, 1997). Greenleaf (1977) was emphatic in proposing that servant leaders empower their followers by promoting an environment that ensures that people are liberated. Consequently, followers can make critical decisions about their work. These leaders ensure that their employees have important responsibilities and engage in their work in the best way that the employees perceive (Chiniara & Bentein, 2016). Further, servant leaders through supporting individuals in taking initiatives (Liden et al., 2008), encouraging learning from mistakes and offering responsibilities (Northouse, 2018) can generate employees' autonomy, a job resource that

buffers the undesirable effects of idea implementation on well-being. It is expected that servant leadership affect employee autonomy.

Hypothesis 4-3aii: Servant leadership is positively related to employee autonomy

The buffering effect of autonomy on well-being innovation linkage occurs as employees are liberated to choose their course of action at work, and as such, could alter their work demand in such a way that it minimises its effect on their well-being (Ryan & Deci, 2019). Therefore, job autonomy could be crucial for buffering the effect of idea implementation on employee well-being as it is associated with more opportunities to cope with stressful situations (see Jenkins, 1991; Karasek & Theorell, 1990).

Hypothesis 4-3aii: Autonomy moderates the idea implementation on well-being relationship

Pulling Hypotheses 4-3ai and 4-3aii, servant leadership affects employee autonomy, and employee autonomy in turn moderates the effect of idea implementation on employee well-being.

Hypothesis 7-6a: Servant leadership moderates the association of idea implementation on well-being through its role on employee autonomy

Servant leaders would enhance their followers' belief in the capabilities required for their job outcomes by developing their technical competences because the development of their followers is critical to servant leadership. As a result of these leaders' desire to understand the uniqueness of their followers (Greenleaf, 1998), they are aware of their followers' competencies, goals and developmental needs. Also, with leaders being experts in their fields (Northouse, 2018), it follows that servant leaders are then able to disseminate this knowledge to their followers. Furthermore, servant leaders are more likely to support their followers in developing new or improving current skills in order to boost their self-efficacy. Since improved self-efficacy ameliorates personal resources and servant leadership is likely to promote self-efficacy, it follows logically that servant leadership will moderate the association of idea implementation and well-being through employee self-efficacy.

Hypothesis 4-3bi: Servant leadership positively influences employee self-efficacy

Perceptually, self-efficacy, "belief in one's capabilities to organise and execute the courses of action required to produce given levels of attainments" (Bandura, 1998, p.624), influences the way individuals understand and interact with their environment (Bandura, 1997). Research outputs show evidence suggesting that self-efficacy shapes how people perceive demand in such a way that demand's effect on well-being is enhanced or diminished

(e.g. Salanova, Peiro & Schaufeli, 2002). This is because individuals with high self-efficacy would more easily perceive a work demand as reduced, while the reverse is the case for individuals with low self-efficacy, on whom demand has a psychological influence. It follows that self-efficacy potentially reduces the effect of work demand on employees' well-being. Therefore, self-efficacy could moderate the association of idea implementation and well-being.

Hypothesis 4-3bii: Self-efficacy moderates the idea implementation on well-being relationship

Hypotheses 4-3bi and 4-3bii suggests that servant leadership influences employee self-efficacy. Employee self-efficacy in turn moderates the effect of idea implementation on employee well-being.

Hypothesis 7-7b: Servant leadership moderates the association of idea implementation on well-being through its role on self-efficacy

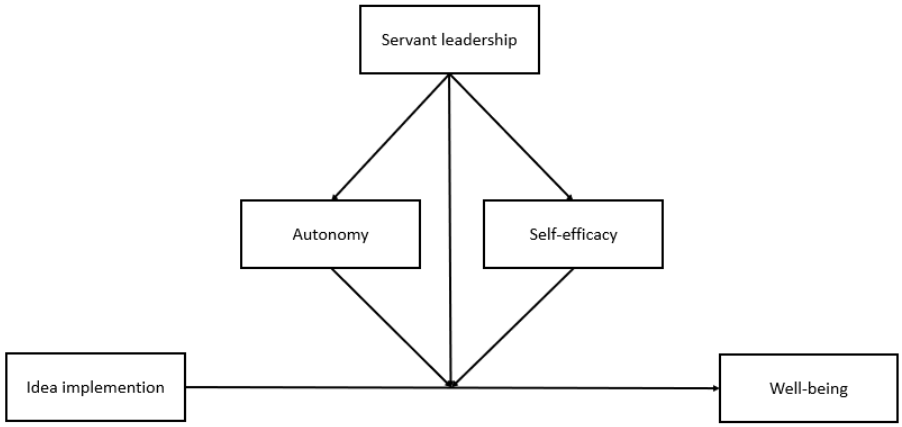


Figure 7.7: Theoretical Model (Study B)

Drawing on the Job Demand–Resource theory, therefore, the effect of idea implementation on well-being is dependent on servant leadership through improving employee self-efficacy and autonomy. This argument is summarised by the hypothetical model (Figure 1).

Methodology

Data collection

As discussed on page 22, this study is based on data collected from teachers in the United Kingdom. The data from waves four and five were utilised in this chapter. The sample in this study consists of 511 teachers (T2), with 525 teachers responding to the survey at T1 (retention rate = 97%). Drop analysis demonstrated that no demographic factor significantly predicted non-completion or the dependent variables. The participants' average age, workplace tenure and professional experience were 40.5 years (SD = 5.9 years), 4.78 years (SD = 4.8 years) and 13.9 years (SD = 7.1 years) respectively. 71% of the final respondents were female, with 31% of the cohort having their highest qualification as a bachelor's degree, and less than 1% yet to complete a bachelor's degree. 33% had earned postgraduate degrees, with 35% and 5% having completed master's and doctoral-level qualifications respectively.

As presented on page 24, idea implementation was captured using five items adapted from the idea implementation items from Janssen (2000), framed, for example: '*In the past week, how many new teaching ideas for difficult issues have you implemented*?'. Self-efficacy and autonomy were measured using scales from the empowerment scale (Spreitzer, 1995), with typical items of *'In the past week, I was self-assured about my ability to do my job*' and *'In the past week, I decided on my own how to go about doing my work*'. Four items of putting subordinates first, for instance '*In the last week, my direct leader seemed to care more about my success than their own*', were used to measure servant leaders (Liden, Wayne, Zhao & Henderson, 2008). Well-being was captured with four items drawn from the pleasure subscale of the quality of life questionnaire (Hyde, Wiggins, Higgs & Blane, 2003). A sample item used to capture well-being was '*In the past week, I enjoyed the things I did at work*'. Scales were responded to using a seven-point scale of either agreement or a number range (in the case of idea implementation). In addition to these, co-variates that could have effects on well-being: gender, age, professional tenure, organisational tenure and subject area taught, were measured and controlled for.

Data analysis

The hypothesised relationships were tested using SEM. Because the conceptual model parallels some mediated moderation models, this study followed longitudinal moderation and

mediation literature (e.g. MacKinnon, 2013) in measuring idea implementation, self-efficacy, autonomy and servant leadership at T1 (wave 4), and well-being at T2 (wave 5). The analysis was conducted using Mplus version 8.1 with the Maximum Likelihood estimator (Muthen & Muthen, 2017) since there was no evidence of skewness. The analysis was carried out in two phases. Prior to hypothesis testing, descriptive analysis and confirmatory factor analysis were carried out. Then model was tested in accordance with strategies suggested by Aiken and West (1991).

Results

In summary, the goal of this study is to understand under what conditions the idea implementation aspect has favourable influence on well-being. Specifically, because servant leaders understand and meet the needs of their followers (Patterson, 2003), the study aims to test servant leadership as a necessary condition for idea implementation to positively predict well-being. Furthermore, it examines the psychological mechanism underpinning this moderation. This section outlines the key findings in these regards.

Table 7.6: Descriptive statistics (Study B)

	Mean	SD	1	2	3	4	5
1. Idea implementation	2.40	1.13	(0.81)				
2. Well-being	2.63	0.61	0.46***	(0.91)			
3. Servant leadership	2.70	1.50	0.33***	0.6***	(0.83)		
4. Autonomy	2.44	1.42	0.34***	0.35***	0.39***	(0.90)	
5. Self-efficacy	2.91	1.36	0.53***	0.39***	0.29***	0.16***	(0.88)
AVE	-	-	0.7	0.79	0.75	0.77	0.80

Note: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. Latent variables Cronbach α in parenthesis

Evidence from Table 1 suggests that the idea implementation, well-being, servant leadership, autonomy and self-efficacy, as expected, are reasonably associated and had no less than good reliability (Cohen, 1988). Importantly, the AVE of all five constructs exceeded the MSV of 0.38, demonstrating discriminant validity (Fornell & Laracker, 1981). Elsewhere, compared to other model configurations, the hypothesised five-factor models significantly had best fit (Byrne, 2001). Considering confirmatory factor analysis results in Table 4.2, the measurement model had very good fit ($\chi^2(142) = 249$, CFI = 0.99, TLI = .98, RMSEA = .038 [90% CI 0.032, 0.043], RMSR = .041; Cohen, 1988; Hu & Bentler, 1999). It had significantly better fit than the four-factor model with combined latent factor of servant leadership and autonomy ($\Delta\chi^2(4) = 1549$, $p < .001$, ΔCFI> .17). In all, the measurement of idea generation, implementation, servant leadership, autonomy and self-efficacy is reliable with constructs being unique yet related as expected.

Table 7.7: Confirmatory Factor Analysis (Study B)

	Specifics	χ^2 (df)	CFI	TLI	RMSEA	SRMR	Δmodel	Δχ2 (Δdf)	ΔCFI
1) Hypothesised Model	All	249 (142)	0.99	0.98	0.04	0.041			
2) 4-Factor Model	WB IM SE (SL + AU)	1549 (146)	0.81	0.78	0.14	0.147	1	1299.792	0.17
3) 3-Factor Model	WB IM (SE SL + AU)	2431 (149)	0.7	0.65	0.17	0.15	2	882.026	0.12
4) 2-Factor Model	WB (IM SE SL AU)	3328 (151)	0.58	0.52	0.2	0.176	3	897.537	0.12
5) 1-Factor Model	One factor	6469 (257)	0.35	0.3	0.22	0.25	4	3141.388	0.23

With the final model accounting for 49% of the variance in well-being, it was found that idea implementation positively predicted well-being. This supports the first hypothesis, yet clarifying the effect is favourable. Though this finding is in line with the motivational

argument that idea implementation positively associates with well-being, it only accounts for 20% of the variance in well-being. As such, it warrants further investigation in this association.

Table 7.8: Summary of hypothesis testing (Study B)

Hypothesis	Model 1 Linkage Est. (S/Error)	Model 2 SL moderation Est. (S/Error)	Model 3 Model 2 and mediation Est. (S/Error)
II → WB	0.433*** (0.04)	0.134** (0.043)	0.089 (0.047)
SL → WB		0.557*** (0.031)	0.501*** (0.036)
SL*II → WB		0.434*** (0.037)	0.185*** (0.038)
SL → AU			0.394*** (0.04)
AU → WB			0.081* (0.041)
AU*II → WB			0.084* (0.041)
SL → SE			0.29*** (0.043)
SE → WB			0.141** (0.041)
SE*II → WB			0.141*** (0.039)
R^2 for WB	0.200 (0.035)	0.586 (0.037)	0.583 (0.037)
ΔR^2 for WB		0.386***	0.383***
Compared model		Model 1	Model 1

Note: Variables were all estimated as latent constructs. II idea implementation, AU Autonomy, SE Self-efficacy. The effects of co-variates on WB were also controlled for. Standardised effects reported.

The inclusion of servant leadership as a moderator on this idea implementation–well-being linkage improved the model's predictability (ΔR^2 = .386, = p < 0.001). Within the scope of this research, servant leadership showed complete moderation of the relationship, in that the effect of idea implementation on well-being (positive or negative) was completely shaped by servant leadership.

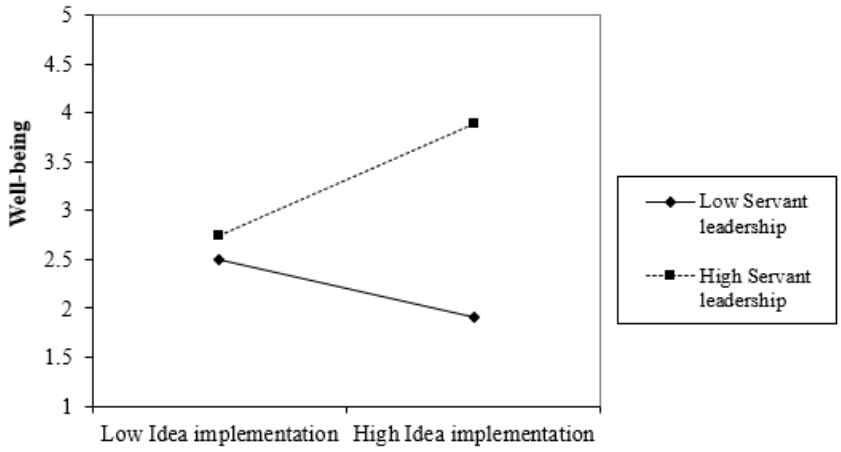
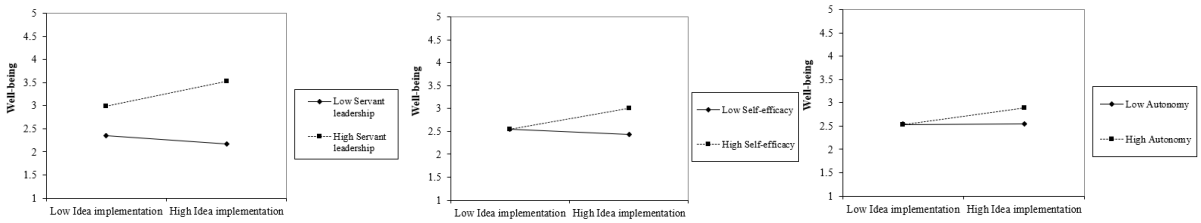


Figure 7.8: Slope analysis of Model 2 (Study B)

Slope analysis (Figure 4.2) suggested that with a significantly higher level of servant leadership, there was a strong positive effect of idea implementation on well-being (β = .306, p < .001); yet, with typical servant leadership, the effect was rather weaker (β = .096, p = .02). However, at considerably lower values of servant leadership, idea implementation had a negative effect (β = -.113, p = .007). This finding, aligning with the Job Demand-Resource theory, lends support to this chapter's second hypothesis.



Note: Self-efficacy, Autonomy and Servant leadership respectively

Figure 7.9: Simple slope analysis for model 3 (Study B)

Further slope analysis (Figure 4.3) suggests that the effects of direct moderation of servant leadership and its indirect moderation through autonomy and self-efficacy on the implementation–well-being association were insignificant at low levels. They become significant at higher levels: servant leadership (β = .102, p <.001), autonomy (β = .072, p = .01) and self-efficacy (β = .093, p < .001). Although most of these unstandardised interactive effects could be classified as small (Cohen, 1988), bearing in mind that Aguinis and his colleagues (2005) suggested that if the typical effect sizes of this nature are in the neighbourhood of β = 0.009, then these are comparatively strong moderation results.

Theoretical discussion

This study aimed to establish the conditional role of servant leadership on the idea implementation–well-being linkage, and the psychological mechanisms underlining this condition. In support of this chapter's first hypothesis, idea implementation had a positive effect on well-being. However, the introduction of servant leadership as a moderator considerably improved idea implementation's predictability of well-being: for lower levels of servant leadership, the relationship between idea implementation and well-being was negative, yet for higher levels, their association was positive. This finding supported the second hypothesis presenting servant leadership as a condition necessary for idea implementation to be positively associated with well-being. This study further demonstrated that the effect of servant leadership occurs partially through two psychological channels.

Servant leaders enhance the perceived autonomy and self-efficacy of their employees, which in turn are necessary for innovation to influence well-being favourably. The understanding of how leadership shapes the type of effect innovation has on well-being makes vital contributions to the innovation literature as it shows that innovation could have a beneficial effect on employees. Previously, knowledge pertaining to the potential cost or benefit of innovation to employees was contentious, as established earlier. The study advances knowledge in this area by presenting servant leadership as necessary for innovation to be beneficial to well-being. This fundamentally answers questions pertaining to when innovation could be helpful to employees (Anderson et al., 2014).

By applying the Job Demand–Resource theory in demonstrating the servant leadership moderation of idea implementation and well-being, the study contributes to current knowledge in four ways.

Firstly, outcomes of this chapter show that when servant leadership is high, the relationship is positive. In this case, the influence of innovation on well-being could be aligned with the motivational expectation (e.g. Harter, 1979). As such, the more innovative individuals are, the more likely they are to have higher levels of well-being. This result could be explained by considering resources that servant leaders provide to their employees (Rivkin, Diestel, & Schmidt, 2014), which alleviates the increased work demand associated with idea implementation, ensuring that the motivation is indeed derived from idea implementations (Bakker & Demerouti, 2014). When servant leadership is low, the association is inverse and is therefore in agreement with stress orientation (e.g. Karasek & Theorek, 1990). Under this leadership condition, the result positioning idea implementation as health impairing is not new to research (cf. Caplan et al., 1975). With low levels of servant leadership, the increased work demand induced by idea implementation has clearly adverse impact on employee well-being. This result presents a case "where innovation attempts have negative but unintended consequent" (Anderson et al., 2014, p.41). The moderating role of servant leadership demonstrates that both competing theoretical fields are two sides of the same coin, thereby adding to the potential resolution of the theoretical misalignment. In isolation, both the motivation and health impairment lines of argument seem valid. But these aspects do not exist in isolation, so should be considered as integrated in this same process. This is because servant leadership provides resources that diminish the counter-beneficial effects of innovation on well-being, thereby enabling its positive motivational effects.

Secondly, self-efficacy and perceived job autonomy provided a partial explanation of the necessity of servant leadership for the favourable influence of idea implementation on well-being. Servant leadership appears to weaken the undesirable effects of innovation on well-being through its enhancement of employee self-efficacy, a personal resource. Because servant leaders enhance their followers' self-efficacy by developing their ability and skills (Greenleaf, 1998), employees are more confident and see the demand associated with idea implementation as reduced (Salanova et al., 2002). This reduction provides an explanation of how servant leadership mitigates the adverse effect of innovation on well-being. The regulation of servant leadership was also rationalised by a job resource. With higher levels of servant leadership, there was evidence that employees appeared to perceive they had greater control of how and when to do their jobs. This flexibility seems to regulate the influence that idea implementation had on their well-being in such a way that it reduced the adverse effect of idea implementation on well-being. Yet, the moderation of servant leadership on the association work demand and well-being bears considerable importance for the effectance theory.

Thirdly, exploring the mechanism behind the moderation of servant leadership provides support for the integration of the Job Demand–Control–Support and Job Demand–Resource theories. Because autonomy is a work resource and control-related, and self-efficacy is a personal resource (Schaufeli & Taris, 2014), presenting evidence surrounding the nature of their interaction with job demand and well-being is posed to demonstrate the resemblance of these models. The results point to the role of support (servant leadership) as providing other resources (e.g. control) in shaping the effect of work demand on well-being. Elsewhere, it was demonstrated that comparatively, self-efficacy had more significant effect than perceived autonomy in mitigating the impact work demand had on well-being. This result makes an important contribution to the job demand resource theory as it shows that, within the context of leadership support and innovation, personal resource might be more effective than job resource. In this way, it is logical that efforts to improve the effectiveness of innovation on well-being could pay greater attention to personal resource. Further, it underlines the nature of the interactions as additive. In other words, personal resource or work resource could shape the effect work demand had on well-being, in contrast to a multiplicative personal and work resource having the same effect. Although this finding makes considerable contributions, it raises further questions. It would be useful to understand why personal resource is more effective in reducing the impact of demand on well-being. In

all, social support potentially affects both personal and work resources in modulating the association of demand and well-being is therefore proposed.

Furthermore, it is essential to further discuss the role of servant leadership within the context of the effectance motivation literature. The effectance theory explained that individuals have a desire to influence their environment through the expression of competence and such effects are enjoyable (White, 1959). As such, employees are motivated because of implementing those ideas having a beneficial impact on the environment (Harter, 1978). Yet, this study shows that this is not always the case. Evidence presented in this chapter shows that when employees have low resource availability, despite effects on the environment, their well-being is adversely affected. This advances the need to consider the conditions necessary for the effectance theory to hold. On the one hand, a related construct self-efficacy is seen as necessary. Within the context of this study, self-efficacy appears to control the association of idea implementation and well-being. Self-efficacy was developed from the effectance motivation (Bandura, Freemand & Lightsey, 1999). Whilst effectance motivation considers the effect of action on an agent occurrence, self-efficacy describes motivation prior to the action (Klimmt, Hartmann, & Frey, 2007). As such, the moderation of self-efficacy should be expected, as an individual would likely feel motivated to take action being confident of the ability to execute it. Self-efficacy is, therefore, necessary for effectance motivation.

On another account, perceived autonomy suggests employees feel they can control attributes of their work (Bandura, 1977). As Klimmt et al. (2007) argued, to be effective, individuals must first feel in control of their actions to achieve desired outcomes. The role of servant leadership in the moderation of this association after controlling for the indirect effect through self-efficacy and autonomy appears novel. Not only does this link leadership to effectance in the workplace context, but these findings also offer new light into the conditions necessary for the effectance theory to hold.

Finally, after correcting the effects of perceived autonomy and self-efficacy, the direct moderation effect of servant leadership was still significant. This finding cannot be left unacknowledged. Servant leadership significantly, yet partially, moderates the relationship of innovation and well-being through enhancing employee self-efficacy and autonomy. Because of the strong relationship between followers and servant leadership (Van Dierendonck, 2011), employees can approach their leaders for additional resources in implementing their ideas, which might be crucial to mitigating its adverse effect on well-being. For instance, in

implementing a teaching idea, due to increased work demand for teachers, they could approach their leaders and request more time to achieve certain targets or ask for a teaching assistant to support idea implementation. These could go a long way to alleviate the adverse effect demand has on the employees' well-being. Moreover, individuals are less worried about the long-term effects of potential failures of idea implements. This is subsequent on mutual trust established (Parker, Williams & Turner, 2006; Liden Panaccio, Meuser, Hu, & Wayne, 2014), so the long-term effect of implementation failures is minimised. As such, employees perceive innovation as less risky. These relationship-based mechanisms could provide explanations for the direct moderation effects of servant leadership.

Still, these findings present some practical implications. Servant leadership behaviour is advanced as a way in which leaders could ensure that their employees' idea implementation does not adversely affect their well-being. Because of the increased complexity and dynamism in today's work environment, employees in most industries are becoming highly innovative. Yet, due to the increasing rate at which employees struggle with stress, there is a new call for leaders to ensure the well-being of their employees is of high priority (Van Dierendonck; Haynes, Borrill & Stride, 2004)). The study brings with it indications on how this goal of both enhancing employee well-being and supporting innovativeness can be achieved. Leaders need to ensure that their employees' needs are continually met and becomes of key importance. Leadership training on leaders' discipleship should be provided for organisational leaders. Furthermore, for organisations with high innovative expectations aiming to improve employee well-being, greater attention needs to be paid to personal resource, as through these resources more effects could be achieved for reducing the undesirable impact innovation has on well-being. Enhanced self-efficacy could be through perhaps employee development training (Bandura et al., 1999).

Limitation and future research

This study, because of its design, was able to account for the regulatory effect of multiple resource variables on the linkage between idea implementation and well-being. In this analysis, although causal language was used, the causality of those relationships cannot be confirmed by this research, due to its design. Future attention could aim to establish the reciprocal relationship between idea implementation and well-being. Furthermore, the subjective measure of constructs under investigation could be limited; more objective measures, e.g. actual counts of innovative outcomes and observation of leadership behaviour,

could be critical in grounding these findings. Finally, while the findings of this study clarify the moderation of servant leadership on the idea implementation–well-being association, other cultural, organisational and/or group-level factors could also influence this linkage. In substantiating this possibility, a further examination, adopting the multilevel perspective, would be better suited.

Conclusion

This work has built on previous research on the role of resource in alleviating work demand's adverse effect on well-being in theorising and empirically testing the servant leadership's shaping the impact of idea implementation on well-being through employee autonomy and self-efficacy. Refraining from making too strong assertions, and acknowledging the limitations of this research, its findings are indicative of innovation as being helpful or detrimental to well-being and are two sides of the same coin. Servant leadership provides moderation for this linkage in such a way that individuals who are experiencing high servant leadership and idea implementation are more likely to have high levels of well-being. Yet those with low servant leadership and high innovation are reported to have lower levels of well-being. In addition to the indication that this result has for the theoretical understanding of the benefits and costs of innovation to employees, it adds to the effectance theory as it is suggestive of the necessity of support for individuals' effects on their environment to generate intrinsic motivation and positive affect.

Elsewhere, servant leadership was found to be a key determinant on the effect of innovation on whether well-being is good or otherwise, as was explained by the boost servant offers self-efficacy and autonomy. By so doing, evidence was presented that personal and job resource might jointly moderate the effect of demand on well-being with the Job Demand–Resource theory. Furthermore, within the context of this study, evidence show that personal resource appears more effective than job resource in demand alleviation.

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In sum, this study shows the crucial role of servant leadership in determining how employees' innovativeness could affect their well-being. In addition to other limitations, this study considers the conditions when and how individuals' innovativeness (operationalised by idea implementation) positively relates to their well-being across individuals. Though its findings present strong theoretical contributions, however, it fails to answer questions pertaining to how the innovation process induces changes in individuals' well-being. Chapter

5 carries this discussion forward. This chapter, drawing on Study A's result suggesting the ambidextrous nature of the innovation process, presents servant leadership as a condition enhancing the interplay of idea generation and implementation. Further, drawing from the Conservation of Resource theory, it tests the effect of this servant leadership-controlled innovation process over time in inducing changes in well-being.

Chapter 5. Innovation process, the "missing link" connecting servant leadership and well-being – Study C

Background

Employee innovativeness has become an essential requirement for business success today (Anderson et al., 2014). This is not only because business environments are more dynamic and complex, but also because work processes are evolving at an increasingly rapid pace (Potocnik & Anderson, 2016). As part of their jobs, more than ever before, employees are now required to be more innovative, quick-thinking and able to act on their feet. This criticality of individuals' innovativeness is more prominent in industries where individuals generate and implement their ideas on their own, than where these subprocesses are kept separate. Despite the importance attributed to it, the theoretical understanding of how to enhance the innovation process for employees lacks clarity (Bledow, Frese, Anderson, Erez & Farr, 2009a; O'Reilly & Tushman, 2013; Rosing & Zacher, 2017). Furthermore, whereas research has established the organisational benefits of innovation, the story is less encouraging for the potential benefits or costs of innovation to individuals (for exceptions, see Amabile et al., 2005; Tavares, 2016). Indeed, Chapter 4 presents evidence that idea implementation, under certain conditions, could adversely affect well-being.

Chapter 4 highlights that with high levels of servant leadership, the idea implementation aspect of the innovation process is positively associated with well-being. Whilst this result contributes to the resolution of strong theoretical tensions, it brings to the fore the importance of servant leadership for the association of well-being and innovation. Yet in Chapter 3, in the supporting arguments by scholars (Paulus, 2002; Amabile & Pratt, 2016), it was seen that the association of idea generation and implementation, both subprocesses of innovation, was reciprocal. Since individuals both generate and implement ideas, the recursive association of idea generation and implementation occurs not only across individuals, but also within individuals. Researchers have called for research considering how the innovation process connects with other constructs occur to focus on the linkages between idea generation and implementation (Bledow et al., 2009a; Bledow et al., 2009b; Papachroni et al. 2014; Lewis & Smith, 2014). In this chapter, an argument is put forward that servant leadership boosts the idea generation to implementation linkage. This implies that this servant leadership synergic boost improves both aspects of innovation over time, considering this is a

recursive process. This also holds significance to altering outcomes of both subprocesses, for instance, employee well-being. The study reported in this chapter furthers theoretical understanding of the association of innovation and well-being by considering the well-being changes as an outcome of the servant leadership-regulated synergy between idea generation and implementation.

People differ in the degree to which they implement their ideas (Tempelaar & Rosenkranz, 2017). Within the innovation process, the uncertainty and work process changes accompanying the implementation of ideas bear psychological costs or *demands* (Bakker & Demerouti, 2017). Also, *resource* availability is essential in meeting the needs associated with translating generated ideas to implementation. This is because the transition from idea generation to implementation would require resources, such as confidence, flexibility, and freedom (Good & Michel, 2013), whose availability also differ between individuals or are person-specific (Tempelaar & Rosenkranz, 2017). It becomes arguable that the linkages between idea generation and implementation are person-specific. Leaders looking for ways to improve their follower's innovativeness could, by putting them first, ensure they are supported and encouraged to implement their ideas. Following this line of argument, the effect of the innovation *synergy* – the effect strength amongst the innovation sub-processes – over time would differ between individuals and leadership could contribute to this variability. Theoretical accounts of this variability and its effects are lacking. Neither are its enablers nor deterrents clearly understood. The importance of this knowledge might not be limited to individual innovation, in line with prior research, but understanding ways to improve individual innovation would ultimately contribute to group and organisational innovation (Cao, Gedajlovic, & Zhang, 2009; Raisch & Birkinshaw, 2008; Junni, Sarala, Taras, & Tarba, 2013; Rosing & Zacher, 2017).

In response, the present study, adopting a shortitudinal design, is unique in that it accounts for how people's dynamic processes differ as they unfold over time (Hamaker, Asparouhov, Brose, Schmiedek, Muthén, 2018, p.1), and set out to achieve two key goals. It seeks to understand if servant leadership improves the person-specific synergy between idea generation and implementation and explores how this process induces well-being changes. Premised on the findings in Study A, this chapter considers idea generation and implementation as interrelated (Lewis & Smith, 2014), in such a way that they reinforce themselves. The paradox approach to resolving ambidexterity maintains that there is persistent tension between idea generation and implementation. Since the innovation process

involves aspects with contrasting demands and activities, stimulating synergy and interdependence of poles would require resources. In an organisational setting, leaders are in the position of providing resource for employees to meeting demands as those associated with innovation (Liden et al., 2014). Servant leadership prioritises the development, growth and functioning of their followers and sees meeting those objectives as key goals (Greenleaf, 1970). In contrast to other leadership perspectives, servant leadership is well-positioned to support employees in resolving the tensions associated with innovation and enabling synergy, as proposed by the paradox theory. When tensions are resolved, with the associated uncertainties mitigated, as servant leadership promises, idea generation and implementation become resources. This is because idea generation and implementation improve work-related performance and functioning, so they could be classified as resources (Schaufeli & Taris, 2014). So, consistent with the Conservation of Resource theory (Hobfoll, 1989), the idea generation–implementation synergy over time changes well-being.

This study contributes to knowledge in at least four ways. Firstly, its presentation of a theoretical model with servant leadership considerably shaping how individuals differ in the implementation of their ideas makes important additions to the innovation literature, with broader indications for the broader ambidexterity fields of research. Although others have suggested leadership affects either idea generation or implementation, the effect of servant leadership in shaping their interplay, drawing on the paradox theory (Smith & Lewis, 2011), highlights the importance of support in this process, thereby ensuring the process persistence. Secondly, this finding also holds important implications for the conservation theory. Because servant leadership, a supportive resource, boosts the resource accumulation, it could be considered a resource caravan passage. As such, the study reported in this chapter adds to the Conservation of Resource theory by proposing that supportive leadership enables accumulation at the least when resources have conflicting demands. Thirdly, by highlighting that the idea generation and implementation interplay influences changes in well-being, the results bring to the fore the often-ignored importance of the interrelation between poles of paradoxical processes, which could be responsible for changes that ambidextrous processes aim to achieve. Finally, by positioning innovation as an explanation for the association of servant leadership and well-being changes, findings of this research offer insight into an alternative way that leaders could affect the well-being of their employees.

Theory and hypothesis

Employee innovativeness has become critical in the increasingly complex, dynamic and evolving workplace. Yet little is known about how to enable the synergy integrating the subprocesses of innovation, together with the cost and rewards it offers employees, so would benefit from further theorisation. In this section, the motivation and resolution of the ambidexterity line of enquiry are drawn on in building the conceptual framework for the study at hand. Because of their contradictory demands, yet same objectives (Papachroni et al., 2015), by tapping into the paradox theory (Lewis & Smith, 2011), the already developed understanding of the temporal order between idea generation and implementation is furthered. The integration of the Job Demand–Resource (Bakker & Demerouti, 2007) and Conservation of Resource (Hobfoll 1989) theories provides a framework for understanding how servant leadership regulates this association of idea generation and implementation. It also demonstrates, by resource accumulation, how this regulation over time influences well-being changes.

Innovation process

Individuals' innovativeness (or innovation process) comprises at least two aspects: idea generation, sometimes seen as creativity, and idea implementation (Kanter, 1988; Perry-Smith & Mannucci, 2017). This process has previously been considered as being consistent with the idea journey that idea generation directly predicts implementation (e.g. Amabile, 1988). Idea generation involves searching for novel ideas through recombination and experimentation which ultimately expands knowledge about potentially new value propositions (March, 1991; Perry-Smith & Mannucci, 2017). Idea implementation describes processes with a central focus on refining and exploring exciting ideas. During implementation, the emphasis is on selecting and capitalising on generated ideas (March, 1991; Janssen et al., 2008). Thus, generation processes are explorative and open (Gebert et al., 2010), implying that the variability of employee behaviour is intensified (Gupta, Smith, & Shalley, 2006). Yet implementation involves exploitative and closed or convergent processes (Paulus, Coursey & Kenworth, 2019), so changes in employee behaviour are limited, with a key focus on the adaption of existing knowledge.

The balance of, and linkages between, both activities or *synergy* are critical to value delivery (Gupta et al., 2006). This is because when individuals generate considerably more

ideas than they implement, it could lead to confusion, while an excessive focus on implementation leads to the rigidity (Gebert et al., 2010). This problem raises the need for individuals to embrace both aspects of the innovation process to yield desired outcomes. Indeed, as Birkinsaw and Gupta (2013) explain, it could be impossible to isolate both elements in some contexts. Therefore, in contrast to separatist approaches to ambidexterity, it makes logical sense that idea generation and implementation "need not always be competing activities but can and should be complementary" (Chen & Katila, 2008, p.208). Taking this integrated paradoxical approach, researchers have emphatically stressed the need to consider linkages and synergy between the ends of dualities.

In terms of linkages, conceptualisations of the innovation process paint idea generation as the first stage in the innovation process, with idea implementation being the second stage (e.g. Amabile, 1996; Janssen, 2003; Perry-Smith & Mannucci, 2017). Following this logic, Woodman et al. (2003) see idea implementation as a function of idea generation and other factors (cf. Amabile, 1996). So, a significant group of scholars see idea generation as a precursor and predictor of idea implementation. Yet a growing number of theorists acknowledge the over-simplicity of this view of innovation (e.g. Amabile & Pratt, 2016; Rosing et al., 2018). For instance, Paulus (2002) argues that because of idea implementation, there might be the need to generate new ideas. Moreover, March (1991) maintained that though idea generation and implementation comprise different activities and demands, competing for resources, they are interrelated and contribute to the same goals.

Building on these arguments, Bledow et al. (2009a) was one of the first to present compelling arguments suggesting that the two aspects of the innovation process are interrelated. Further, they argued that the innovation process is ambidextrous. The forward idea generation to implementation argument aligns with ideas generation presenting new knowledge that is exploited during the implementation phase. It is this linkage that creates a new business or individual capabilities. In reverse, idea implementation influencing generation is based on the motivation generation from the first phase, because when ideas are successfully implemented, they are likely to be beneficial, and are positioned to contribute to employees becoming motivated (Harter, 1978).

Moreover, in implementing ideas, individuals could achieve important development and growth goals (Herzberg, 1966) and will attain self-actualisation, thus becoming motivated (Maslow, 1943). Since motivation is essential for idea generation (Amabile, 1983; Auger & Woodman, 2016), it follows that idea implementation would influence idea

generation. Amabile and Pratt (2016) recently adopted a similar motivation viewpoint in rationalising the interplay of idea generation and organisational idea implementation.

However, in contrast to the reverse, this forward relationship is noted for its variability across individuals, in that the rates at which individuals implement their ideas differ between persons (Sarooghi, 2015; Tempelaar & Rosenkranz, 2017). The strength of this linkage not only depends on the individual's flexibility to switch between activities (Tempelaar & Rosenkranz, 2017) but also their ability and confidence to implement their ideas (Liden et al., 2014). Moreover, because the risk associated with the innovation process is typically associated with idea implementation (Hülsheger et al., 2009), it is expected that risk consideration could also affect this linkage. Individuals varying in their capacity to implement their ideas typifies the innovation interplay as it forms a key connection in the process. For instance, if an individual cannot implement their ideas, the influence of idea generation on implementation is weak, so the overall interplay becomes weak. Therefore, people's variability in their idea generation to implementation characterises how they differ from others in terms of their innovation synergy. Acknowledging these differences in individuals' innovation synergy, the role of organisational context in strengthening the idea generation to implementation linkage (Gibson & Birkinshaw, 2004; Lubatkin et al., 2006) becomes critical. Because leaders are the custodians of resources in an organisational setting, they become crucial enablers of innovation interplay. As such, the conceptual grounding of the role of leadership in enhancing the interplay of idea generation and implementation is now presented.

Servant leadership and the innovation process

Job demands are sustained physical and/or psychological efforts needed to cope with a work-related expectation (Karasek & Theorek, 1990). Demands are stressful as individuals perceive that they have insufficient time or capacity to execute a set of activities (Hobfoll, 2001). Because of this inadequate resource, work demands result in the stimulation of the sympathetic nervous system (Fox et al., 1993), resulting in employees increasing their expenditure of physiological or psychological effort in addressing demands (Lundberg & Frankenhauser, 1980). With time, these deplete employees' resources, causing loss of motivation, energy and health (Bakker & Demerouti, 2007). Aspects of the work setting that allow employees to address these demands are generally referred to as work resources (Demerouti et al., 2001).

When there is an imbalance between the job demand and resources, there is a loss in well-being. Idea implementation increases work demand because of the heightened uncertainty and increased work pressures (Neubert, Kacmar, Carlson, Chonko & Roberts, 2008). Yet, when ideas are successfully implemented, they are likely to yield beneficial effects on the environment (Amabile & Pratt, 2016) and offer opportunities for employee growth and development (Herzberg, 1966). Therefore, although the process poses a threat to employee well-being, when these threats are mitigated, because of its job functioning and personal improvement potential, the innovation process becomes a resource (Schaufeli & Taris, 2014). A key factor is that because of the threat of losing resource due to implementation failures and increased work demand, individuals are unlikely to implement the ideas they have generated (Hobfoll et al., 2018). Servant leaders would potentially support their followers in alleviating these demands necessary to enhance their innovativeness, which by so doing becomes a resource. This is because, compared to other leadership approaches, servant leadership is noted for its concern for providing support for employee growth and functioning for the common good (Liden et al., 2014).

Servant leadership behaviour, whose central proposition is the understanding and fulfilment of follower needs and improving their outcomes (Liden et al., 2014), is best positioned to shape followers implementing their creativity. Servant leaders instil into their followers a sense of self-confidence, liberating their proactive behaviours, and providing them with a sense of power (Conger, 2000; Greenleaf, 1998). Fundamental to the servant leadership perspective is the goal of satisfying the development needs of followers, so they encourage personal development (Laub, 1999). These behaviours engender more self-directed followers (Konczak, Stelly & Trusty, 2000). As such, servant leaders allow their followers to go about their work as they think best. So, these followers can, on the one hand, regulate their work in such a way that they are better able to choose when to enact their creativity without seeking approval, which should enhance idea implementation. Additionally, because these leaders instil a high degree of self-confidence into their followers, these subordinates have the belief that they can successfully implement their ideas (Axtell et at., 2000). It is therefore logical that followers are better positioned for the implementing of their creative ideas.

Servant leadership diminishes the risk associated with implementing ideas. These leaders understand their followers, are attentive to their feelings and radiate their ability to let go of employee mistakes after they have been addressed (George, 2000). The empathy-driven

behaviour enables employees, creates trust and makes people feel more accepted (Patterson, 2003), and hence more willing to enact their ideas. This is because they are convinced that since the ideas are for the general good, their leader is likely to support them. Even in the event of a failed implementation or a mistake, the longer-term effect is minimised (Ferch, 2005; Hülsheger, Anderson, & Salgado, 2009; McCullough, Hoyt, & Rachal, 2000). Therefore, it is expected that servant leadership enhances the ability of individuals to enact their creativity, and thus enhances their individual innovation process.

Hypothesis 7-8: Servant leadership behaviour strengthens the idea generation–implementation relationship in such a way that with higher levels of servant leadership, the relationship is stronger

Innovation process and well-being

The servant leadership-regulated idea generation and implementation interplay, in reinforcing itself, over time contributes to well-being consistent with the Conservation of Resource theory (Hobfoll, 1989). The resource conservation theory proposes that individuals strive to accumulate resources, in addition to protecting against resource loss, to enable people to respond to demand (Hobfoll et al., 2018). An extensive body of research acknowledges that resource accumulation has a positive effect on individual employee well-being over time (Llorens, Schaufeli, Bakker & Salanova, 2007; Browne-Yung, Ziersch & Baum, 2013; Demerouti, Bakker & Gevers, 2015). This is because, as people continue to accumulate resources, they become less vulnerable to resource losses (Hobfoll, 1989).

The extent of the creative enactment differs from idea implementation as it is the relative degree to which an individual's generated ideas are implemented, in contrast to ideas that are implemented. Also, it is only when it is implemented that the value can be realised, as ideas on their own are limited in delivering business value (Weisberg, 2015; West, 2002). So, implementing ideas that one generates is a "means to obtain centrally valued ends" (Hobfoll, 2002, p.307). Therefore, since value realised from successful innovation potentially enables improved outcomes, work functioning, individuals' positive affect, personal fulfilment and growth, individuals implementing their ideas become a resource (Hobfoll, 1989). The Conservation of Resource theory provides a framework for considering the influence of innovation process on improving well-being over time.

Aligned with the accumulation of resource corollary, individuals seeing the implementation of their ideas gain further resource and will continue to look for new ideas

and implement them (Hobfoll, 2011). As the association of idea generation and implementation are reciprocal, it follows that as these resources are generated as one's ideas are implemented, the process becomes a recursive loop of resource accumulation or a positive spiral (Gorgievski et al., 2008). This process clearly accords with the Conservation of Resource theory (Hobfoll, 1989). However this accumulation is conditioned on the servant leadership levels, as earlier discussed. This is because the leadership behaviour shapes the idea generation and implementation interplay. Moreover, being that servant leadership is an external resource, it could accelerate resource reinforcement (Hobfoll et al., 2018).

Furthermore, although the implementation of an idea is crucial for the associated benefit to be realised, as Paulus argues, ideas being generated does not necessarily imply that they will be implemented (Paulus, 2002). On a contrasting, yet a related account, not all implemented ideas originate from individuals' creativity (West, 2002). It is possible that the implemented idea originated from other individuals. Since the effect of innovation on well-being is anchored in the positive impact on the society of individuals' ideas, it becomes arguable that this effect would improve well-being if the idea is generated by the individual. This is because the psychological costs generated by the increased complexities, risk and the limited intrinsic motivation associated with idea enactment are mitigated. The rationale behind this argument is that the positive effect of value generated when the ideas originate from the implementing individual, helps individuals in protecting against and recovering from implementation losses (Halbesleben, Paustian-Underdal, & Westman 2014). Consequently, the extent to which individuals implement their own ideas, in contrast to merely implementing ideas, could be crucial to well-being improvements. Because the extent to which individuals implement their ideas characterises their innovative interplay, it follows that changes in well-being will be influenced by this idea generation implementation interplay.

Hypothesis 7-9: The strength of individuals' idea generation to implementation relationship over time is associated with well-being changes, in such a way that the stronger the relationship, the more positive the well-being change.

The innovation process is seen as the process associating idea generation and implementation. Taking both Hypotheses 1 and 2 together, an argument that the innovation synergy at the least provides some explanation for the relationship between servant leadership and well-being changes could be put forward.

Hypothesis 7-10: The strength of idea generation to implementation interplay mediates the relationship between servant leadership and employee well-being changes.

Elsewhere, there have been other propositions concerning the association between the innovation process, well-being and servant leadership. These include the effects of servant leadership on idea generation (Jaiswal & Dhar, 2015; Yoshida, Sendjaya, Hirst & Cooper, 2014) and implementation (Hughes et al., 2018; Krog & Govender, 2015; Yoshida et al., 2014). Also included are the effects on well-being that idea generation (Wright & Pascoe, 2015) and implementation (Dolan & Metcalfe, 2012) have. In ensuring robust hypothesis testing, these effects were corrected for in a model integrating earlier propositions and the current hypotheses as represented in Figure 5.1.

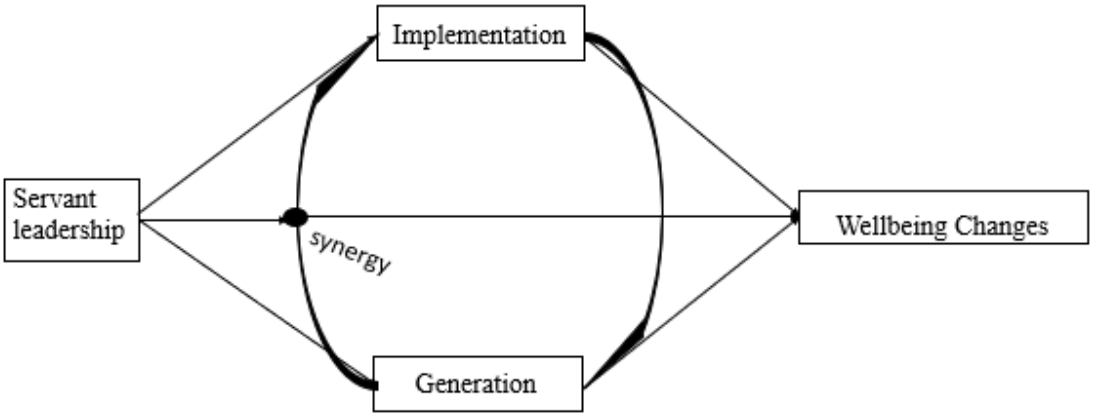


Figure 7.10: Conceptual model (Study C)

Methods

Research design and participants

As discussed extensively on page 21, this study was conducted among secondary school teachers in England. Teachers took part in this term-long data collection (12 weeks in total). Although participants received weekly notifications to complete the surveys, their completion days differed, and as such, the collection of creativity and innovation items occurred across 77 days, with missingness. During the first week, 612 participants completed the survey, with 388 completing it at least 11 further times (retention rate 63%). Logistic regression analysis demonstrated that not only did drop-out not significantly predict well-being at time 2 (T2), well-being at time 1 (T1) and other demographic information failed to predict it. Additionally, the 388 participants were considered enough for the analytic method (Schultzberg & Muthén, 2018), and together with the need to reduce sparsity and further

errors generated by multiple imputations (Hamaker et al., 2018), participants who did not complete the survey at least 12 times were removed. Amongst participants retained in the final analysis, there were 388 (30%) men. Their average age was 40.7 years old (SD 5.7 years). Five of the participants, (just over 1%), had completed a doctoral level qualification, 20 (5%) had a master's degree, and 142 (37%) had postgraduate level as their highest qualification. The sample also included 131 (34%) and 87 (22%) who had a bachelor's level or a lesser qualification respectively. The sample mean of professional tenure was 14 years (SD = 6.7 years), with that of organisational tenure being 4.4 years (SD = 4.5 years).

Measures

As highlighted on page 24, idea generation implementation was assessed using items adapted from Janssen (2003). Items like, "*In the past week, how many new teaching ideas did you put into practice?*" were used to assess idea implementation, whilst *"In the past week, how many new teaching ideas for difficult issues have you generated?"* assessed idea generation. All waves of the participants' responses to idea generation and implementation were used for this empirical study. The four items on the putting-subordinates-first scale were used to measure servant leadership (Liden, Wayne, Zhao & Henderson, 2008). A typical item was *"In the last week, my direct leader seemed to care more about my success than their own"*. Because servant leadership demonstrated very high stability, it was assumed to be time-invariant, and adopted its first measure. Well-being was measured using the five items of quality-of-life scale (Hyde, Wiggins, Higgs & Blane, 2003). A sample item used to capture this construct was *"I enjoy the things I do at work"*. Well-being items were responded to at the first and last of the occasions only. Apart from idea generation and implementation which were responded to using a seven-point number range scale, other constructs were responded to using a seven-point agreement scale of *completely disagree* to *completely agree*. Scale assessment showed that scales were reliable as demonstrated on pages 24 and 25. In addition to these variables, measurements of synergy and well-being changes are discussed as part of the analysis. Also, gender, age, professional tenure, organisational tenure and subject area taught were controlled for in the model.

Analysis

Preliminary analysis

Before hypothesis testing, as with earlier empirical studies, extensive analysis was conducted to ensure measurements of constructs were valid, consistent and invariable across time. The validity of constructs was tested using confirmatory factor analysis (CFA), compared nested models and confirmed discriminant validity (Bentler, 1990; Farrell, 2010, Kline, 1989). Because idea generation and implementation were measured at least 12 times for each participant, it was ensured that the measurement model was invariance across time. This was crucial because of the assurance that changes in variables were as a result of the actual difference in the measured variable in contrast to changes in the measurement model (Brown, 2006). Against this backdrop, three measurement invariance steps were carried out: configural, metric and scalar factorial invariance. Satisfying configural invariance suggests that the factor structure is the same across time points. The metric (sometimes referred to as weak) invariance testing involves the constraining of factor loadings across time, and as such, implies that not only are factor structures consistent across time, but the loadings are similar as well. The scalar (or strong) invariance in addition to the metric involves constraining the intercepts across groups whilst freeing latent means. In addition to idea implementation and generation, similar tests were carried out for well-being, which was measured pre and post-period.

Hypothesis testing strategy

The hypotheses were tested using an integration of the dynamic structural equation and latent change score models. In contrast to other methods (e.g. (Random Intercept) Cross-Lagged Panel Modelling and traditional multi-level modelling), dynamic structural equation not only corrects for temporal and trait-like stability (Rogosa, 1980; Hamaker et al., 2015), it also has the capacity to model relationships for each participant (Asparouhov et al., 2018). In other words, it can more robustly model person-specific differences in estimating parameters. As such, it accounts for and presents participants' variability in the natural idea generation and implementation capacities. Furthermore, compared with other multi-level approaches, dynamic structural equation accounts for how person-specific variability (e.g. with the extent to which creative ideas are implemented) can be used to explain other between-person

variables, (e.g. changes in well-being), as well as predicted by other features, (e.g. servant leadership), within the same analytic model. The significance of these point estimates within credible intervals would confirm if the relationship between these variables is cyclical across time.

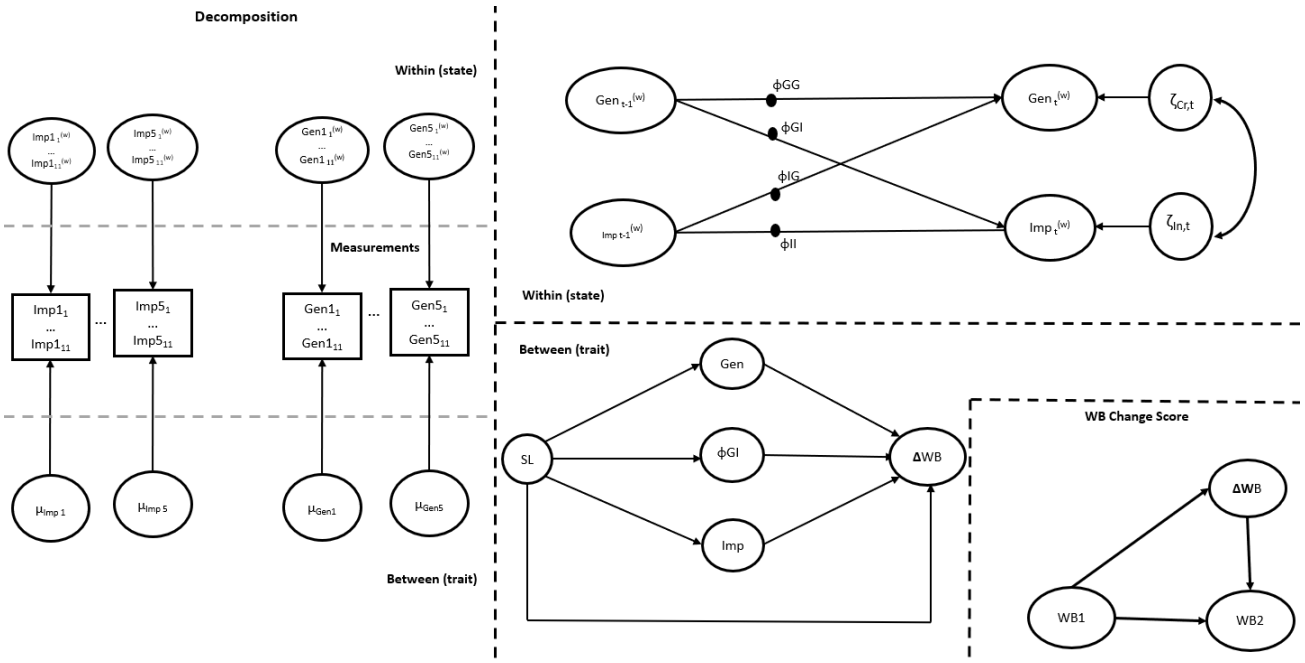


Figure 7.11: Analytic model (Study C)

For each participant, each item measure of implementation (e.g. for item 1, $Imp1_1$...$Imp1_{11}$) and idea generation (e.g. for item 1, $Gen1_1$ …$Gen1_{11}$) at each time t were decomposed into mean (μ_{Imp1} and μ_{gen1}) and their variation or difference from the mean across time (e.g. generation at T1, $Gen1^{(w)}_t$). The mean value, remaining constant across time, reflects the between-level or the trait representation of the construct, whilst the variation from the mean across time is seen as the within level or state representation of the variables (Asparouhov et al., 2018). For the within level, as Figure 5.2 shows, these variations were used to create latent variables for generation and implementation (e.g. $Gen_t^{(w)}$ for generation), together with their lagged version (e.g. $Gen_{t-1}^{(w)}$ for generation). Between successive time points, the parameters ØGG and ØII were the within person autoregression of idea generation and implementation, whilst ØIG and ØGI were the lagged effects of idea generation on implementation and vice versa respectively. This allowed for measurement of individual difference in the relationship between idea generation and implementation, together with their randomness (Hamaker et al., 2018) at the between level. By so doing, this operationalised the extent to which individuals' ideas were implemented as the random slope (ØGI), which describes individual variability in the innovation process. For each participant, their item

mean levels, reflecting means across time, were used to create latent variables at the between level (e.g. Gen for generation).

In other words, the measurement of the synergy involved first extracting the typical levels for idea generation and implementation. After that, for each time point, the extent to which each participant varied from their typical value for idea generation was used to predict their deviation from their idea implementation level for the next week, and vice-versa. For each participant, the effect variations of their idea generation had on their idea implementation was seen to characterise the synergy (ØGI). Because every individual had differing effect sizes, ØGI parameter was then introduced as another dimension for each participant.

This approach appears to better account for individuals' ability to engage in both contradictory ambidextrous poles. Compared to the multiplicative and subtraction approach seen elsewhere (e.g. Gibson & Birkinshaw, 2004; Mom et al., 2009; Nemanich & Vera, 2009; Tempelaar & Rosenkranz, 2017; Koryak et al., 2018), the random slope measure demonstrates the interrelationship between both poles, yet better captures their joint effect. Rosing and Zacher (2017), following acknowledgement of the multiplicative and subtraction measurement issues, eloquently put forward a regression-based solution, drawing the interaction of ambidextrous poles. This approach builds on this using regression slopes, yet capitalises on intensive shortitudinal design to describe how individuals' slopes differ, the effect of contextual factors on slopes and consequence of slopes, within the same analytic framework. More importantly, the dynamic structural equation model's between-level variables account for the magnitude or joint effect, as well as the differential effect, of the idea generation and implementation on well-being changes, whilst the slopes present information regarding the effects of imbalance. As such, the dynamic structural equation approach accounts for the interrelationship between both aspects, which is crucial to paradoxical processes (Papachroni et al., 2015; Smith & Lewis, 2011).

Elsewhere, well-being changes were assessed using the latent change score (latent change score) model (see Selig & Preacher, 2009). Latent change score models allow changes in variables to be modelled as latent variables, in such a way that the change slope differs between individuals. As presented in Figure 5.2, the changes in well-being (ΔWB) were measured at the between level, with the intercept (WB1) being the latent well-being measure at T1. The parameter between both measurements of well-being is constant (fixed at

1.0), thereby allowing the extracted latent variable to be the changes in well-being (see Ferrer & McArdle, 2010).

The extraction of the measures of the innovation synergic strength and changes in well-being afforded the leverage to test the hypothesised relationships at the between aspects of the dynamic structural equation. The dynamic structural equation model goes some steps further than just estimating relationship at the individual level as Hamaker and her colleagues (2018) advised (see Asparouhov et al., 2018 for technical details); it has the capacity to integrate these individuals' parameters for modelling relationship across individuals. This makes it possible to test the strength of interplay within the innovation process to explain the relationship between servant leadership and improved well-being. In so doing, the innovation synergic strength (typicalised by the effect of idea generation on implementation parameter (ØGI)) was measured and tested as a mediator of servant leadership and changes in well-being. Still, this research accounted for the potential mediation of idea generation and idea implementation (see Figure 5.2).

As emphasised earlier, in ensuring that the outcome of the relationship hypothesised is not influenced by other theoretical established linkages, in addition to the two hypothesised relationship, at the between level, the following effects were also controlled for on the model. These included the association of servant leadership and creativity, servant leadership and idea implementation, creativity to well-being and idea implementation to well-being. By so doing, it was ensured that the explanation effect of employee idea enactment is a truism, contrary to other established relationships in the innovation process. In totality, the mediation was approached following Mackinnon's (2013) advice including a direct effect. The path significance was used to assess explanation paths. This explanation role of the strength of idea generation and implementation interplay on the servant leadership and well-being changes was tested by the integration of a dynamic structural equation and latent change score model (Figure 5.2).

Findings

Preliminary results

Table 7.9: Confirmatory Factor Analysis on first wave (Study C)

Model	Specifics	X^2 (df)	CFI	TLI	RMSEA	SRMR	BIC	Δ Model	$\Delta\chi^2$ (Δdf)	ΔCFI
time 1										
M1	4 Factors	246.688 (146)	0.98	0.98	0.04	0.03	33,950.941			
M2	3 Factors SL, WB, (IG + II)	1380.337 (149)	0.76	0.72	0.13	0.12	35,065.86	M2-M1	1133.649 (3)**	0.22
M3	2 Factors SL, (WB + IG + II)	1807.361 (151)	0.67	0.63	0.15	0.14	35,480.393	M3-M1	427.024 (2)**	0.09
M4	1 Factor	2735.806(152)	0.49	0.43	0.18	0.16	36,402.594	M4-M1	928.445 (1) **	0.2

Note Servant Leadership SL, Idea generation IG, Idea implementation II, Well-being WB.

The CFA reported on Table 5.1 shows that the hypothesised factor structure appears similar to data patterns and that latent variables are distinct. Firstly, the hypothesised model of four latent variables (creativity, implementation, servant leadership and well-being), with fit statistics, χ^2 (146) = 246.69, CFI = .98, TLI = .98, RMSEA =.04 [90% CI 0.034, 0.046], SRMR = .03, had exceptional fit to the data (Cohen, 1988). Further, this model yields significantly better fit than other alternatives.

Descriptive statistics

Mean, standard deviations and intercorrelations between variables in the study reported are presented in Table 5.2. As expected, study variables were significantly related. Elsewhere, in comparison to other alternatives, the four-factor model of servant leadership, well-being, idea generation and implementation demonstrated better fit to the data, with indices demonstrating exceptional fit (Cohen, 1988). This shows that the data aligns well with theoretical expectations. Despite the relationship amongst variables under investigation, the constructs demonstrated their uniqueness since average variance extracted (see page 24) for all variables was greater than the mean shared variance of .22.

Table 7.10: Descriptive statistics (Study C)

		Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Idea generation	-0.11	0.28	1													
2	Idea implementation	-0.12	0.36	0.03	1												
3	Idea gen. (previous time)	-0.13	0.34	0.08	0.47*	1											
4	Idea imp. (previous time)	-0.13	0.4	0.64*	0.06	0.03	1										
5	Trait idea gen. (Gen.)	-0.00	0.09	-0.05	-0.07	-0.07	-0.04	1									
6	Trait idea imp. (Imp.)	-0.00	0.06	-0.05	-0.06	-0.07	-0.04	0.97*	1								
7	Pre-well-being (WB2)	0.02	0.12	-0.01	-0.05	-0.06	-0.01	0.59*	0.48*	1							
8	Post well-being (WB1)	-0.64	0.10	-0.02	-0.03	-0.05	-0.02	0.69*	0.64*	0.73*	1						
9	Servant leadership (SL)	-0.02	0.30	-0.06	-0.06	-0.06	-0.04	0.93*	0.97*	0.28*	0.50*	1					
10	Well-being change (**Δ**WB)	-0.66	0.40	-0.01	0.02	0.01	-0.01	0.16*	0.26*	-0.39*	0.27*	0.34*	1				
11	Idea gen. to gen. (φGG)	0.06	0.05	-0.01	0.00	-0.01	0.00	0.01	0.01	-0.01	0.01	0.01	0.03	1			
12	Idea gen. to imp. (φGI)	0.57	0.13	-0.05	-0.06	-0.07	-0.03	0.92*	0.90*	0.62*	0.66*	0.85*	0.07	-0.02	1		
13	Idea imp. to gen. (φIG)	0.49	0.05	-0.03	-0.02	-0.02	-0.03	0.17*	0.18*	0.04	0.17*	0.19*	0.16*	-0.00	0.15*	1	
14	Idea imp. to imp. (φII)	0.05	0.13	-0.02	-0.03	-0.03	-0.02	-0.06	-0.06	-0.02	-0.07	-0.06	-0.06	-0.01	-0.05	0.04	1

In terms of measurement model stability across time, the model of idea generation and implementation achieved weak factorial invariance across time. This is because the configural model (χ^2 (1130) = 1377.62, p < .05, CFI = .99, TLI = .99, RMSEA = 0.02 [CI = 0.01, 0.02], SRMR = 0.03) did not differ significantly from the weak factorial model ($\Delta\chi^2$ (1166) = 1445.27, p = .11, ΔCFI < .01). However, the weak factorial model differed significantly from the strong model ($\Delta\chi^2$ (1807) = 5245.25, p < .01, ΔCFI > .01). This suggests that whilst the factor loadings were consistent across time, factor means appear to be changing. Still, independent examination of either of idea generation, implementation and well-being measurement invariance demonstrated at least strong invariance across the twelve weeks. Since this study's goals were to test relationships across time, weak factorial invariance would suffice for it (Liu et al., 2017).

Hypothesis testing

In estimating the dynamic structural equation model, the Markov Chain Monte Carlo Bayes estimator via the Gibbs sampler on Mplus 8.1 (Muthen & Muthen, 2017) was used. Bearing in mind Asparouhov and Muthen's (2010) advice, convergence was confirmed by running at least 5000 iterations on two parallel chains with random seeds and 15 iterations thinning (Asparouhov et al., 2018; Gelman et al., 2014). Model convergence was verified seeing the Potential Scale Reduction Measure tend towards 1.0 (Hamaker et al., 2018).

Table 7.11: Unstandardised parameter estimates and confidence interval (Study C)

Variable	Fixed effects [means]	Random effects [variances]
Trait idea imp. (Imp)		0.002 [0.000, 0.007]
Trait idea gen. (Gen)		0.006 [0.001, 0.017]
Idea gen. to gen. (ØGG)	0.07 [0.04, 0.98]	0.002 [0.001, 0.008]
Idea impl. to gen. (ØIG)	0.48 [0.43, 0.52]	0.001 [0.000, 0.007]
Idea gen. to impl. (ØGI)	0.57 [0.54, 0.60]	0.022 [0.005, 0.044]
Idea impl to impl (ØII)	0.05 [0.02, 0.09]	0.019 [0.006, 0.036]

Parameters estimated for the fixed and random effects, together with their 95% credible intervals, are presented in Table 5.3. A quick inspection of these parameters suggests that some credible intervals for random effects contain zero. Because no fixed effect has zero in its credible interval, random effects' credible intervals containing zeros do not imply the parameter is not relevant. As such, there is evidence that the fixed effects differ significantly from zero.

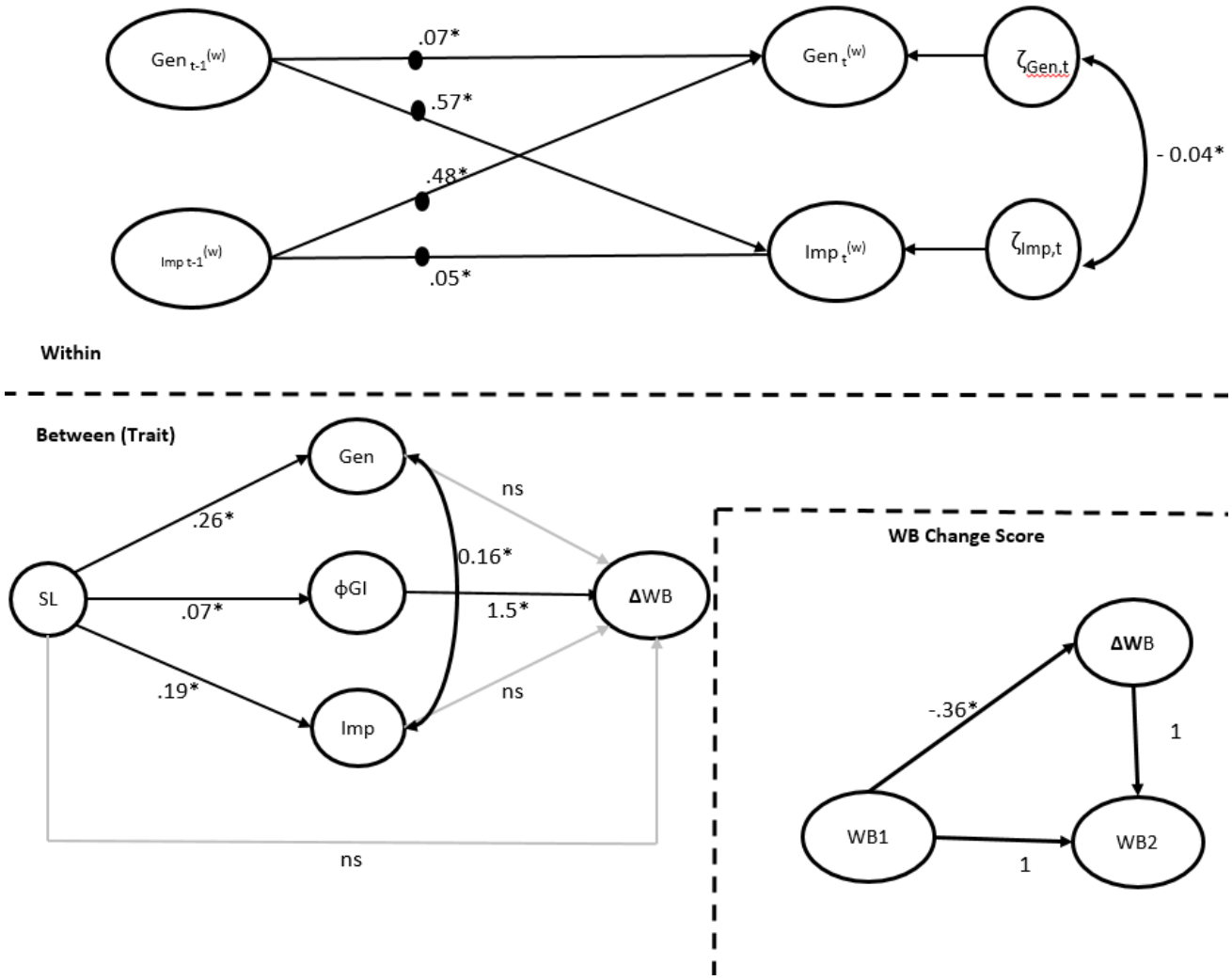


Figure 7.12: Unstandardised model outputs (Study C)

This theorised model (Figure 5.3) accounted for the average within-person proportion of the explained variance. The model accounted for average between-person proportion of explained variance for idea generation changes (CI = [37.3%, 43.1%]) and 25% for idea implementation changes (CI = [21.6%, 27.6%]). At the between level, it explained 81.4% for well-being changes (CI = [40.6%, 98.7%]) and 90% of ØGI parameter (CI = [56.4%, 99.6%]). To better appreciate the relationships between idea generation and implementation across time, the standardised parameter for the within model is presented in subsequent discussions. With Mplus 8.1 (Muthén & Muthén, 2017), the standardised values are averaged participants' standardised parameters (Schuurman et al., 2016). This standardisation method, as Hamaker et al. (2018) argue, considers individuals' variability in their parameters as well as the difference in their variances. Although the effect of generation on implementation

(ØGI =.61 (CI = [.56, 0.67])) appears significantly higher than that of the reverse (ØIG =.44 (CI = [.41, 0.46])), it is safe to say the relationship between both constructs is reciprocal. Whilst there appears to be greater consistencies in the idea implementation on generation (random effect = .001 (CI = [.01, .04])), as expected, individuals differ more on their implementation of generated ideas (random effect = .02 (CI = [.01, .04])). This finding is supportive of the hypothesis that the relationship between idea generation and implementation is cyclical across time in such a way that both constructs are interrelated across time, forming a synergy. Also, it supports the notion that individuals differ in their innovative synergy, especially in the effect of the idea generation on implementation.

At the within-person level, there are a couple of other notable outcomes that bear mentioning. The carryover between successive idea generation (ØGG) was 0.07 (CI = [0.00, 0.01]), with that of implementation (ØII) being 0.05 (CI = [0.02, 0.09]). Whilst these parameters were significant, their strengths were considerably smaller than those of the cross-lagged relationship. Moreover, the relationship between idea generation and implementation at this level was negative. These results, consistent with small or insignificant parameters found elsewhere (e.g. Daniels et al., 2011; Sarooghi et al., 2015), might be indicative of the switch-hat phenomenon associated with ambidexterity (Tempelaar & Rosenkranz, 2017).

The between-level aspect of the model (Figure 5.3) presents unstandardised fixed effects of parameters responding to Hypotheses 2 and 3. As expected, the servant leadership significantly predicted trait-like idea generation (CI = [.95, .99]), implementation (CI = [.96, .99]) and individuals' idea translation of their ideas (CI = [.75, .99]). Furthermore, individuals' abilities to implement their ideas predicted well-being change (CI = [.09, .37]). However, after accounting for this effect, surprisingly, it was seen that trait-like idea generation and implementation failed to account for improved well-being. Furthermore, the direct effect of servant leadership on well-being was insignificant. Though with some other interesting findings, these results lend credence to the initial hypotheses because the extent to which individuals implement their creative ideas fully mediated the relationship between servant leadership and improved well-being.

Additionally, in contrast to their negative association at the within level, an average individually standardised positive relationship between idea generation and implementation between individuals was observed (see Hamaker, 2012; Hamaker & Grasman, 2014) which highlights that when individuals implement ideas, they are unlikely to concurrently generate more. Still, people that see themselves to generate more ideas are likely to be those that

would perceive themselves to implement more ideas. The findings in this study seem to support both hypotheses that servant leadership influence the synergy of idea generation and implementation (typically the effect of idea generation on implementation, ØGI), which in turn predicts changes in well-being.

Discussion

The present study has two objectives: testing the influence of servant leadership on the interplay between idea generation and implementation, and examining the effect the process has on well-being. After controlling for individual variability associated with innovativeness, the innovation process was found to be reciprocal. In addition to servant leadership significant predicting idea generation and implementation as observed elsewhere (see Hughes et al., 2018 for review), the leadership construct also moderated the effect of idea generation on implementation. This thereby controlled the reciprocal interplay of idea generation and implementation. Furthermore, there was evidence that the strength of the idea generation and implementation interplay was related to changes in well-being.

Scholarly contributions

By highlighting the role of servant leadership in the innovation process, this study advances knowledge in the innovation and the contextual ambidexterity fields of research. Because idea generation and implementation require differing activities (March, 1991; Tempelaar & Rosenkranz, 2017), it follows that resource availability is crucial (Bledow et al., 2009b). Prior work highlights that people differ in their ability to switch between such differing activities (Tempelaar & Rosenkranz, 2017), suggesting that the strength of the interplay of idea generation and implementation varies between individuals. The study shows that servant leadership appears to be partly responsible for this variability, by regulating the extent to which individuals implement their ideas. In support of Hypothesis 5-1, servant leaders seem to provide resource needs for the different activities associated with idea generation and implementation. As such, the effect of idea generation on their implementation would be more significant with high levels of servant leadership. This argument might provide an indicative explanation of the substantial variability in the effect of idea generation on implementation as reported by Sarooghi et al. (2015).

Before now, researchers have pointed out the impact of contextual variables on the innovation process (e.g. Perry-Smith & Mannucci, 2017; Sarooghi et al., 2015), and most

have demonstrated the direct effect of the context variables on either idea generation (e.g. Jaiswal & Dhar, 2015) or implementation (e.g. Krog & Govender, 2015; Yoshida et al., 2014). For instance, some scholars have proposed the contingency approach to leading innovation or ambidexterity in general (e.g. Rosing et al., 2011; Zacher & Rosing, 2015; Mueller et al., 2018). Underpinning this argument is the need for leadership to change in ways that are consistent with the activities[4] of employees (Rosing et al., 2011). This argument remains valid, taking on the either/or approach to the resolution of ambidexterity, particularly when groups and organisations innovate (Lewis & Smith, 2014). This is because such management of innovation involves either temporal or structural separation of differing activities, so directly leading the resolution of tensions is possible. Yet, in response to Mueller at al.'s call for research on how leadership influences employee innovative behaviour, servant leadership is arguably critical to situations involving employees having to innovate more rapidly. Indeed, sometimes such innovativeness occurs without the direct involvement of leadership. In such cases, innovation is typically when the same individual is generating and implementing the ideas. This finding adds to knowledge pertaining to leadership interfacing with innovation and other ambidextrous processes that could occur at micro-organisational levels.

Another promising finding was the way that individuals varied in their idea implementation, which induced changes in their well-being in such a way that others that had a higher implementation of their generated ideas appeared to improve their well-being over time. Such a difference extends to the entire interplay as the influence of idea generation on its implementation affects the idea generation on subsequent times. This draws attention to individual variability in people's accumulation of resource. Considering the role of servant leadership in explaining part of this variability, arguments that resource accumulation could be dependent on other resources is supported (Hobfoll, 2011; Hobfoll et al., 2018). Van Woerkom et al. (2016) present evidence indicating that differing job demands could interact to intensify health impairment. These outcomes viewed in another way would suggest that the interaction of resource could improve well-being. This study adds to this background by considering individual variability in their resource reinforcement. Further, its results show that servant leadership considerably shapes this reinforcement. As such, conservation of resource could be regulated by a supportive resource.

[4] Either of explorative or exploitative

According to Hobfoll (2011), resources do not exist in isolation; rather they travel in caravans of associated resources. As Hobfoll et al. (2018) indicate, most co-travelling resources are related, as they emerge from similar environments (e.g. self-esteem, optimism and self-efficacy). As they maintain, "conditions that either treat, foster and nurture or limit and block resource creation and sustenance" (Hobfoll et al., 2018, p.107) are resource caravan passages. In this light, considering the moderating effect servant leadership has on idea generation and implementation, servant leadership could be a resource caravan passage (Hobfoll et al., 2018). However, contrary to Hobfoll and his colleagues' expectation that co-travelling resources within a resource caravan are alike, although idea generation and implementation have consistent aims, they differ considerably (March, 1991). Servant leadership's resource mechanism appears more support-oriented (Karasek et al., 1982). This is because it offers helpful social interaction that helps buffer the impact of work demand on well-being (Karasek & Theorell, 1990). Therefore, these research outcomes support the positive gain spiral within the Conservation of Resource theory, yet bring decisive additions to it. The findings on the moderation of servant leadership at least hint at support-oriented resource as a modulator of resource accumulation when the resources have different needs, as with paradoxical processes.

Together, the present finding, which positions the innovation process as an explanation of the effect of servant leadership in changing employee well-being, is novel. Earlier studies have shown that the spiritual values of servant leaders influenced their well-being through autonomy (Chen et al., 2015). This result cast new light on the research intercept of servant leadership and well-being by showing that servant leadership changes employee well-being through its effect on the interplay between idea generation and implementation. This suggests that the core effect of servant leadership on well-being changes occurs only through their interplay, compared to either idea generation or implementation as proposed elsewhere (see Rosing et al., 2011; Hughes et al., 2018). This result also holds promise for leaders looking for ways to enable the innovativeness of their followers whilst also ensuring their well-being is maintained.

Also, the explanation of servant leadership's moderation on the effect of idea generation on implementation could be understood by drawing on the Job Demand–Resource framework. Servant leaders make employees seek out how to best manage their work (Liden et al., 2014) so they can make decisions relating to when and how to implement their ideas. As a result, employees are better able to manage their innovation demands in such a way that

it affects their environment and offers them growth opportunities. In this way, their generation and implementation of ideas become resources as well (Schaufeli & Taris, 2014). This whole process of servant leadership shaping the association of idea generation and implementation agrees with the Job Demand–Resource framework. Resource generated from the process was seen to accumulate over time in ways consistent with the Conservation of Resource theory. This points out that both theories might be integrated in that the Job Demand–Resource theory describes a process that occurs at a point, whilst the Conservation of Resource theory frames the reinforcing processes over time. Moreover, the Job Demand–Resource theory captures how individuals' well-being differ, whilst the Conservation of Resource theory outlines how individuals' well-being change over time. By so doing, the study supports the integration of both these theories in a more complementary way. In joining the pioneering group, this study took advantage of the uniqueness of the dynamic structural equation modelling in achieving this goal. This analytic method distinctively models by considering both the individual specific relationships between constructs and could interface other variables that differ between individuals. As such, accommodating both conceptualisations of well-being changes within this same framework was possible. This presents a call on other researchers to adopt more innovative ways in undertaking complex research aims.

Managerial implications

As well as academic contributions, this research work has inferences that could be beneficial for managers. For leaders to encourage innovation in such a way that employee well-being is not compromised has always been a challenge. This provides practical insight for leaders aiming to achieve this goal. Leaders serving their followers by putting them first, seeking to be aware of their needs and providing the resource to support them, could enable innovation. By so doing, increasing employee innovation could foster improved well-being. Indeed, by supporting and encouraging employees to become innovative, implementing their ideas, they are likely to improve their well-being over time. Considering the importance placed on employee innovation and their well-being, this implication becomes very timely.

The importance of servant leadership on employee innovation and well-being suggests that the development of leaders' serving behaviours should be an important goal of industries where individuals' innovations are key to success. Considering the importance of innovation, servant leadership development programmes would be beneficial to fostering

innovative employee behaviour, yet improve followers' well-being over time. Importantly, because the interrelationship between idea generation and implementation is critical to their existence (Lewis & Smith, 2014), servant leadership behaviour enables sustainable innovation.

Rewarding innovation becomes another source of well-being. Some scholars have suggested that some extrinsic motivators could contribute to innovation (Amabile, 2017). So by introducing schemes that reward innovation, employees might become more innovative. Since innovativeness could change well-being over time, it follows that rewards for innovation could strategically improve well-being.

Limitations

An important strength of this study is its capitalisation of servant leadership to understand the role of leadership in engendering innovation and well-being. It is not clear if other positive leadership perspectives could shed further light on this research intercept. Although most positive conceptualisations of leadership (e.g. transformational, authentic, ethical) are related, they still maintain their uniqueness (Hoch et al., 2018). Therefore, testing the effect of other leadership perspectives on the interplay of idea generation and implementation could yield further insight into this area of research. Indeed, the theory would be advanced should there be a more comprehensive understanding of the effect of differing leadership perspective in enhancing the interplay of idea generation and its implementation. Moreover, this could answer questions like what leadership style is best situated for innovation and for which context or industry.

In a related account, this study drew on motivation research to understand the association of leadership and innovation. Yet it is acknowledgeable that relationship fields of research could complement and enrich findings. For instance, servant leadership provides the resource necessary to enable the interplay between idea generation and implementation. This moderation effect could be shaped by the relationship between the leader and follower (Martinaityte & Sacramento, 2012). This is because it is possible that when the connection is weak, the moderation effect might be less effective. Thus, further research is needed to understand the role of the leader-follower relationship in this interplay.

This leads to the next area that could benefit from further investigation. The data collection method ensures that data is not nested as such. However, followers are nested in their work groups in such a way that they have a leader for several employees. Therefore,

applying this multi-level perspective will bring critical additions to the findings presented in this chapter. Moreover, such design enables the investigation of the role of other group and organisational level factors such as organisational culture and participatory safety. These could hold real implications for advancing research interfacing leadership, employee innovation and their well-being. Moreover, since individual innovativeness contributes to organisational innovation, exploring how this occurs using a carefully planned multi-levelled analysis has the potential to provide knowledge pertaining to how innovation permeates organisation levels.

Conclusion

This study set out to understand the process of enabling individuals' innovativeness through the synergy of idea generation and implementation and its consequence for employees. Acknowledging the limitations of this study, hence the advice that its results be interpreted cautiously, it was found that individual differences in the interplay of both aspects of the process were explained by servant leadership. Furthermore, these differences, through reinforcement over time, resulted in employee well-being changes. Stated in another way, higher levels of servant leadership presented stronger interplays of idea generation and implementation which resulted in improved well-being. These results contributed to the theoretical understanding of the innovation process as they demonstrated the contextual role of leaders in the enablement of innovation through enhanced synergy. This study also presented evidence in support of the Conservation of Resource theory yet highlighting that supportive resource could enrich or hinder the quality of resource accumulation, at least when resource needs are contradictory. Moreover, the investigation's outcomes highlighted the need for servant leadership in enhancing individuals' ambidexterity, particularly when considering the integrated, both-of approach to ambidexterity.

Chapter 6. Integration and conclusions

To advance the innovation literature (Anderson et al., 2014), the impetus for this dissertation was to examine the innovation process, the interplay of idea generation and implementation, paying attention to the often-overlooked interrelationships between them (Bledow et al., 2009b; Lewis & Smith, 2014; Papachroni et al., 2015; Sarooghi et al., 2015). Furthermore, it aimed to investigate how the process interfaces a crucial enhancer of the interplay, servant leadership (Greenleaf, 1970), and how this process over time changes employee well-being. Servant leadership was advanced as an essential condition necessary for both the interplay of the innovation process and the linkage between idea implementation and well-being.

To systematically investigate the nature of the innovation process and its interface with other constructs, three empirical studies were conducted drawing on the sample pool of participants. These empirical studies were elaboratively discussed in the preceding chapters, and in this, their synopses were first presented. By so doing, the aim, results and implications for each empirical study were presented. Next, an integrated discussion was presented, advancing the theoretical and practical implications. Thereafter, an appraisal the strengths and weaknesses of this dissertation is put forward. This naturally leads to suggestions for further research. The chapter ends with some concluding remarks.

Findings

The key finding of this investigation is that the association between idea generation and implementation is reciprocal. Further, it saw the interplay being regulated by servant leadership in such a way that it not only explains how well-being differs between individuals, but also how it changes individuals' well-being over time. The findings support the notion that individual innovativeness is ambidextrous with its idea generation and implementation poles interrelated. This relationship was partly explained during the discussion on the motivational theories. Before discussing enhancer and effects of the process, the summary of Study A are presented.

Chapters synopsis

Is the relationship between idea generation and implementation reciprocal? What is the role of intrinsic motivation?

Until now, creativity or idea generation has been considered as the predictor of idea implementation (Amabile, 1996). This straightforward, seemingly simplistic idea generation primarily predicting implementation has been questioned (Paulus, 2002), whilst the motivational fields of study present the reverse implementation–generation possibility (Harter, 1978). Drawing on the componential creativity (Amabile, 1983) and effectance theories (White, 1959; Harter, 1978), it was expected that idea implementation would predict idea generation. This is because individuals derive intrinsic motivation by having a positive effect on their environment (Harter, 1978). Furthermore, intrinsic motivation is a key factor in idea generation (Amabile, 1983; 1996). Taken together, it was anticipated that the relationship between idea generation and implementation are reciprocal, with intrinsic motivation explaining the idea implementation to generation causal connection.

Results from Study A largely supported the initial propositions. It was observed that not only was idea generation related to implementation, the reverse was also the case, in line with the motivational argument. Importantly, supporting Amabile and Pratt's (2016) reciprocal conjecture, it was only through idea implementation that idea generation reinforced itself over time and vice-versa. Consistent with the reciprocal rationality, outcomes of Study A showed some support for intrinsic motivation, explaining the reverse idea implementation to generation linkage (Harter, 1978; Amabile, 1983). This is because intrinsic motivation was found to partially mediate the idea implementation to generation association. The presence of other explanations for the linkage becomes arguable. For instance, unsuccessful idea implementation might not generate intrinsic motivation, yet could still engender more idea generation as it potentially raises new problems (Paulus, 2002).

Overall, the results of this study indicated that the relationship between idea generation and implementation is reciprocal, with intrinsic motivation as an explanation of feedback idea implementation to generation loop. Previous research has conceptualised the innovation process as an idea generation to implementation process (Amabile, 1983; Perry-Smith & Mannucci, 2017). The first study, by clarifying the feedback loop, presents evidence that this relationship is reciprocal. This accords with Paulus (2002) and Amabile and Pratt's (2016) recursive position. Also, considering both elements' differing activities and demands,

the reciprocal association of idea generation and implementation, consistent with other researchers, suggests that the innovation could be ambidextrous (Bledow et al., 2009a; Rosing et al.; 2011). Ultimately, these findings underscore idea implementation as a crucial predictor of idea generation, so by implementing ideas, individuals could generate more ideas.

Is idea implementation beneficial or harmful to well-being? How does servant leadership shape their relationship?

Study A enhanced the theoretical understanding of the individuals' innovativeness. It is well established that groups and organisations derive significant value from innovation. As innovation involves employees, it is surprising that the benefits or costs that innovation presents to employees is not well-documented (Anderson & King, 2003; Anderson et al., 2014). Backed by competing theoretical grounding, prior research has presented differing evidence and inconclusive evidence regarding the association of innovation and well-being. As such, scholars appeared divided on if that innovation is beneficial or detrimental to well-being (e.g. Dolan & Metcalfe, 2012; Gonzalez-Roma & Hernandez, 2016). In Study B, framed drawing on the Job Demand–Resource theory, seeing servant leaders meet their followers' needs as a priority (Ferch, 2005), examined if servant leadership shapes the idea implementation and well-being relationship. Also, the study sought to understand how this conditionality occurred, by exploring the mediated moderation through employee perceived autonomy and their self-efficacy.

In realigning this theoretical tension, a theory-driven model of the relationship between well-being, innovation, self-efficacy, autonomy and servant leadership was tested using structural equation modelling. The study's results highlight that the relationship between innovation and well-being was positive for higher levels of servant leadership and negative when the reverse was the case. It was also found that this moderation was explained partially by self-efficacy (a personal control factor (Bandura, 1998; Bakker & Demerouti, 2014)) and autonomy (a job control factor (De Rijk, Blanc, Schaufeli & De Jonge, 1998)).

These findings situate servant leadership as a condition for idea implementation to positively influence well-being; it contributes to the resolution of the theoretical tension between stress and motivational theories in the linkage between innovation and well-being. Moreover, these form a basis to consider if some motivational theories, at least effectance theory, are conditional (Harter, 1978; White, 1959). The role servant leadership played in the

model suggests that for an effect to be considered beneficial to well-being, it needs to occur when there is servant leadership. Similar arguments have been put forward with the two-factor motivation theory, where Herzberg and their colleagues (1959) argued that certain factors were necessary before job satisfaction could be realised from motivating factors. Elsewhere, the stress field of study have similar moderation effects, for instance, the Job Demand–Resource and the Job Demand–Control–Support theories (Karasek, 1979; Häusser, 2010). Importantly, these results responded to calls for the alignment of elements of the Job Demand–Control and Support model. It was noticed that control, whether personal or job-related, mediated the effect that servant leadership (a supporting social resource) had on the relationship between demand and well-being. This suggests that control potentially mediates the moderation of support on the job demand and well-being linkage.

How does the servant leadership regulation of individuals' innovativeness over time explain alterations to their well-being?

In Study B, it was established that the effect of idea implementation on well-being is dependent on the presence of servant leadership. That is, with high levels of servant leadership, idea implementation is beneficial to well-being, and at lower levels, it adversely affects well-being. Yet, Study A showed that idea generation and implementation have a reciprocal relationship. Because of this reciprocal relationship, bearing in mind the Conservation of Resource theory, the effect of idea implementation on well-being would be reinforced over time. Moreover, the strength of the linkage between idea generation and implementation varies between individuals, as individuals vary in their ability to implement ideas. Furthermore, servant leadership also offers individuals the resources necessary for them to enact their ideas. Therefore, this person specificity in the innovation process, servant leadership controlled, would be critical to the reinforcement of idea generation and implementation over time and well-being. So, over and beyond what is known in Studies A and B, Study C theorises the centrality of individuals' innovation synergies as an explanation for the effect of servant leadership on changes in well-being.

In Study C, following the previous arguments and drawing on the paradox theory, it was expected that servant leadership would strengthen the idea generation to implementation forward relationship in such a way that this association is stronger with servant leadership and weaker without servant leadership. Further, as this relationship differs amongst individuals, it was expected that it contributes to changes in well-being over time, drawing on

the Conservation of Resource theory (Hobfoll, 1989). As anticipated, evidence suggests that servant leadership significantly predicted individuals' variability in their idea generation to implement relationship strengths, yet the reverse relationship had limited variability. As such, the forward relationship typicalised the synergy within the innovation process. This synergy over time accounted for the changes in well-being. It was also noted that after considering the effect of the synergy, the effect of either of idea generation or implementation on well-being changes were insignificant. As such, though the innovation process explained the association between servant leadership and well-being, the effects of idea implementation and generation on changes in well-being were insignificant.

Before now, studies have highlighted how leadership accounts for the individual difference in either of idea generation (e.g. Jaiswal & Dhar, 2015) or implementation (e.g. Krog & Govender, 2015; Liden et al., 2014). Taking a more integrated approach, by highlighting the role of servant leadership in shaping the extent to which individuals implement ideas they generate, answering Mueller et al. (2018), this study presents insight on how leadership interfaces innovation. This supports theoretical understanding of the interface between leadership and the innovation process. Also, this is indicative of a potential role of servant leadership in enhancing synergy between activities that appear competing. On another, yet similar account, the servant leadership-controlled, innovative process over time's influence on well-being change has implications for the Conservation of Resource theory. Idea implementation is associated with intrinsic motivation (Auger & Woodman, 2016), personal growth (Wallace et al., 2016)) and self-actualisation (Maslow, 1943), which are considered resources (Schaufeli & Taris, 2014). Because of the synergy between idea generation and implementation, these resources are accumulated over time. However, this accumulative effect differs between individuals as the strength of the linkages varies between people. The establishment that servant leadership accounts for some of this variability shows that the build-up of resources depends on servant leadership. As such, this lends support to the positive spiral proposition with the Conservation of Resource theory (Hobfoll, 2011).

From the three empirical chapters, this dissertation answered three fundamental questions in relation to innovation and how it connects to other constructs. These include establishing and rationalising the reciprocity of the idea generation implementation relationship. Further, the research demonstrated that the effect of idea implementation on well-being was shaped by servant leadership in such a way that it was positive, with high levels of servant leadership and vice-versa. Taking a more integrated approach, servant

leadership was seen to control the strength of the interplay between idea generation and implementation, and this process induced changes to well-being over time. In the next section, an integral discussion of the implications of these findings is carried out.

Overall results

Earlier conceptualisation of the innovation process saw idea generation as the predictor of idea implementation (Amabile, 1983). Whilst others have considered this relationship to be more complex and reciprocal, this research appears to be amongst the first to present some empirical tests of the true nature of this relationship. The findings in Studies A and C showed consistent evidence supportive of the reciprocal interplay of idea generation and implementation, constituting the innovation process at the least. As such, in adding to the innovation literature, this research project included the reverse idea implementation to generation linkage. This means that innovation does not necessarily need to commence with idea generation.

Elsewhere, results documented in this dissertation demonstrated that servant leadership was necessary for the innovation process to be beneficial to well-being. A linear conceptualisation of the innovation process and well-being association will likely be contentious, as differing research lines see this relationship differently. Innovation is related to demand as it is risk-associated and increases work pressure and expectation (Anderson et al., 2014). Increased work demand is known to affect well-being adversely (Caplan et al., 1975; Theorell, 1976). However, because innovation presents employee self-improvement opportunities (Cropley & Cropley, 2015) and effectively improves the employee's environment (Anderson et al., 2014), it is positioned to better well-being (Harter, 1979). Until now, this misalignment has remained unresolved. Across Chapters 2 and 3, it was evident how servant leadership shapes the innovation process in such a way that it has a beneficial effect on well-being. As such, servant leadership is necessary for innovation to be helpful to well-being, a challenging type of work demand (Bakker & Demerouti, 2017).

A challenging demand is a demand type which, with the availability of resources, its effects become beneficial. Because servant leadership is seen to enhance employee resource, evidence that supports employees in circumventing the negative effects of innovation is put forward, thereby promoting the well-being on two accounts. First, by moderating the relationship between idea implementation and well-being, when employees have leaders that take their needs and development as core priorities when they have high levels of idea

implementation, they are likely to report higher levels of well-being. Secondly, servant leadership, by controlling the innovation process, changes individuals' well-being over time. Idea implementation is associated with well-being and the strength of the idea generation implementation synergy differing between individuals. As such, the resource accumulation, which changes individuals' well-being over time (Hobfoll, 1989), would be dependent on the innovation synergy, which in turn relies on servant leadership, as servant leadership is positioned to regulate this synergy.

Not all results were consistent across this dissertation. In Study B, it was found that servant leadership moderated the relationship between idea implementation and well-being. However, this relationship appeared not to be significant in Study C. There are a number of possible explanations for this inconsistency. The seemingly obvious one is because, Study B conceptualises well-being as a construct of interest, whilst Study C focuses on well-being changes. As such, Study B examined individuals' variability in the effect of implementation on well-being. Study C, on the other hand, explored the effect of idea implementation on individuals' differing well-being trajectories over time. Differing results of this nature are not new to research. Similar results have been discussed extensively by Hamaker (2012). In addition, Study C, in considering the synergy of idea generation and implementation, could show that the extent to which idea generation was implemented was critical to well-being changes. Given that Study B examined idea implementation in isolation, it is possible that in taking an integrated approach in Study C, the innovative synergy accounted for most of the variance attributable to idea implementation in Study B. Still, it is fair to say that the presence of servant leadership is key to employee innovation being beneficial to their well-being. However, further research could shed light on the actual moderation location of servant leadership.

Elsewhere during the first three weeks of the term, there appeared to be greater effect of individuals implementing their ideas on generation, whilst taking 12 weeks to account, the more significant effect changed to the reverse. On the one hand, it could imply that this change of relative effect might be theoretical. This is because as the term progressed, consistent with Rosing et al.'s (2018) proposition, teachers appeared to refine their focus on implementing more. As such, any idea generated would most likely be implemented. On the other hand, the change might be more methodological. As Hamaker and Grasman (2015) illustrated, because Study A estimated its slopes using regressions estimated across individuals, as such, it fails to account for individuals' difference in the effects idea

generation could have on implementation and vice-versa. However, the within-person estimation of slopes in Study C controls for this. Moreover, this dissertation is not able to provide further explanation as to which of these two possibilities captures the change of comparative effect. Importantly, the significance of the comparative effect was not tested. Yet, as was set out, the association of idea generation and implementation is reciprocal. In the following section, how these findings contribute or speaks to scholarly discussions is outlined.

Key scholarly contributions

The findings of this research project make vital contributions to the innovation process and provide an alternative approach to conceptualisation as it connects to other constructs. Furthermore, it speaks to resource, ambidexterity, and paradox theories. This section outlines how these results add to scholarly bodies of knowledge.

Innovation process

Following Anderson et al. (2014), individual innovativeness at work, or simply innovation process, was conceptualised as the process involved in the development and introduction of new and improved ways of doing things. This process involves at least two aspects: idea generation and implementation (Hughes et al., 2018). Because of the growing need for individuals to be innovative, a clearer understanding of the process forms an initial stage in knowing how to enhance it. Previously, the process is seen as riddled with contradictions and tensions. Until recently, many researchers considered the relationship between both aspects of innovation as purely idea generation influencing idea implementation (e.g. Amabile, 1983; Perry-Smith & Mannucci, 2017). By introducing the feedback idea implementation to generation linkage, this dissertation adds to the theoretical understanding of this process. By so doing, it presents evidence supportive of the process being reciprocal, with intrinsic motivation providing some explanation for this connection. This finding lends credence to Amabile and Pratt's (2016) proposition that creativity might not always be the first aspect of the innovative process, but neither is idea implementation always the concluding part.

Further, because the demands of idea generation and implementation are contrasting, it follows that the process could be a paradox. So, careful attention needs to be paid to the strength of linkages or synergy between both poles. Following Lewis and Smith's (2014)

advice, enhancing linkages requires the availability of resource and the right type of leadership. So, by interfacing servant leadership with innovation, outcomes of the empirical studies showed that servant leadership enhances the interplay between idea generation and implementation. This implies that with servant leaders, employees are more likely first to implement more of their ideas and generate more ideas, which holds promise for knowledge regarding how leadership relates to innovation as Anderson et al. (2014) called for. Although early studies have shown the effect of different leadership styles on either of idea generation or implementation (see Hughes et al., 2018), this dissertation remains one of the first to test how leadership shapes the association of both constructs. Compared to other direct effect approaches, the leadership moderation effect alters both constructs over time, since their connection is reciprocal. So, it forms an important addition to insight concerning how leadership and employee innovation link up.

Moreover, linking the servant leadership-shaped innovation process predicting well-being changes shows that the innovation offers an alternative explanation of the effect servant leadership has on well-being. Others have demonstrated that servant leadership and well-being are mainly connected through organisational fit (Caplan, 1983) and social identity (Tajfel & Turner, 1979). For instance, concurring with the social identity field of research, Rivkin et al. (2014) argued that that servant leadership and well-being are connected because servant leadership promotes an atmosphere of trust, support and justice. They further promote servant leadership as a leadership stance aiming to create work environments that meet employees' individual needs, thereby enhancing their well-being. Whilst these arguments are well rounded, this research project's results show that servant leadership enhances the interplay within the innovation process, which, in turn, changes well-being over time, which shows another rationalisation of the effect of servant leadership on well-being.

Further, within the context of how innovation connects to other constructs, clarifying the conditions necessary for innovation to favourably contribute to well-being as a meaningful addition to knowledge was considered as part of the empirical investigations. Until now, studies have shown that innovation can be beneficial or harmful to employee well-being. Understanding that servant leadership provides resources necessary for employees to circumvent the negative effect of innovation and enhance the positive ones, servant leadership was positioned as a useful condition necessary for well-being to be a positive outcome for innovation. This answer calls for researchers to consider the effect of innovation on individuals (Engelbrecht, 2014), particularly researchers interested in understanding when

this effect is beneficial (e.g. Anderson et al., 2014). This argument could be extended to the resource fields of research and the effectance theory.

Resource fields of research

The dissertation speaks to the Job Demand–Resource (Bakker & Demerouti, 2007), Job Demand–Control–Support (Karasek, 1979; Johnson & Hall, 1988) and Conservation of Resource theories (Hobfoll, 1989). Firstly, in the case of the Job Demand-Control-Support theory, an imbalance theory primarily aims to explain work-related stress. Before now, although there was evidence that controls had an additive effect (Hausser et al., 2010), little was known about how these factors were aligned in this process. Indeed, the role of social support had been questioned in this process (cf. Semmer, Elfering, Jocobshagen, Perrot, Beehr, Boos, 2008). In the second study, servant leadership shaped the idea implementation well-being linkages occurs through the parallel interaction of self-efficacy and autonomy. Thus, showing that, at least within the context of this dissertation, the alignment of these constructs is such that social support predicts controls which additively interact with the connection between job demand and well-being as illustrated in Figure 6.1. In all, this research presents indicative evidence that social support perhaps acts as the source for control, which mitigates the effect of job demand on well-being, at least within the context of this research.

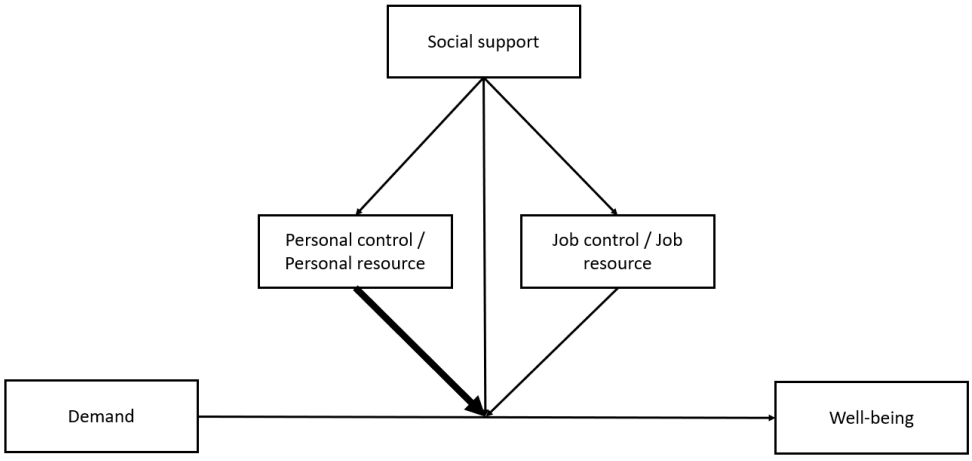


Figure 7.13: Implication for the Job demand resource and demand control support theories.

In this parallel moderation process, in comparison to autonomy, self-efficacy appeared to have a more significant effect on the linkage between idea implementation and well-being. Furthermore, this research responded to Bakker and Demerouti's (2017) call for

future studies to investigate the impact of servant leadership on job demands, resources, and employee well-being. It showed that leadership could directly mitigate, or indirectly through its impact on other resources, shape the effect of demand on well-being. The Job Demand and Resource theory present an imbalance outline, suggesting that when job demand exceeds resource, the well-being of employees is adversely affected (Bakker & Sanz-Vergel, 2013). The health impairment psychological mechanism of this proposition maintains that resource mitigates the effect of job demand on well-being (Bakker & Demerouti, 2017). Nonetheless, knowledge in this area is still in its infancy as to the effects of different resource types on this linkage. Bakker and Demerouti (2017) highlighted the importance of this knowledge in their recent review. Because self-efficacy is a personal control resource, while autonomy is job-control oriented, it is arguable that personal resource is more effective in shaping the demand well-being connection, at least within the context of self-imposed demands. This presents an indication of the job demand resource theory as the differential effect of the personal resource is greater than that of job resource.

The importance of social support presents additions to the Conservation of Resource theory as well-being. The Conservation of Resource theory is a resource adaption framework describing how people maintain, protect, and retain their resource in anticipation of stress (Hobfoll, 1989). The positive gain spiral occurs when resources are reinforced over time by contributing to themselves (Hobfoll et al., 2003). As Hobfoll later highlighted, resources do not exist in isolation as they travel in caravans (Hobfoll, 2011) and their sustainability is enhanced or derailed by resource caravan passages (Hobfoll et al., 2018). These results provide support to a number of these arguments. Being that idea implementation is valuable and offers employees growth opportunities (Cropley & Cropley, 2015) when the work demand associated with it is circumvented as this research shows with servant leadership, it reinforces itself through idea generation over time, changing well-being. This presents an important suggestion for Conservation of Resource theory because idea generation and implementation consist of different activities and demands; these outcomes suggest the role of social support (as servant leadership) in ensuring or accelerating resource accumulation over time. This, in some ways, integrates the Job Demand–Resource theory with the Conservation of Resource theory. This is because social support could be conceptualised as a resource. Therefore, within the context of well-being and the innovation process, the Job Demand–Resource theory appears to present a snapshot view of the conservation of resource (see van Woerkom et al. (2016) for a similar argument).

Effectance theory

The servant leadership moderation of the linkage between idea implementation and well-being, as found in Study B, has important implications for the effectance theory (White, 1959; Harter, 1978). The effectance theory advances motivation and positive affect as results of individuals influencing their environment positively. This motivation, according to this line of research, typically drives the individual to further engage in the skill bringing about the effect. This suggests that having a positive impact on the environment, idea implementation would unconditionally be expected to be positively related to well-being. Study B found that higher levels of servant leadership are necessary for this linkage to be true.

Similarly, at lower levels of servant leadership, the relationship is negative. It becomes logical to argue, at least within the context of innovation and well-being, that the effectance expectation only holds when there are higher levels of servant leadership.

Furthermore, the moderation of servant leadership occurs partially through self-efficacy and autonomy. This highlights that there are conditions necessary for the effectance theory to hold. This vital finding is seen in some motivation theories that maintain that certain conditions are required before benefits are realised (e.g., The two-factor theory (Herzberg, 1966)).

Paradox theory

The paradox perspective offers a framework for resolving ambidextrous activities. In comparison to other methods, this theory favours the both-of approach to resolving ambidexterity with attention paid to the synergy between activities (Parachroni et al., 2015). Before now, despite the theory emphasis on enhancing synergy, current knowledge about what factors could achieve this and how has been limited (Lewis & Smith, 2014). As with the Conservation of Resource theory, outcomes from Study C answer these questions. Servant leadership is seen to influence the interplay of idea generation and implementation - ambidextrous activities. Servant leadership ensures that individuals can switch between competing activities, as they are always looking for ways to challenge and grow their employees and resolve their requirements (Liden et al., 2014). By influencing the synergy between idea generation and implementation, servant leadership could contribute to both aspects over time. This argument could be extended to other ambidextrous processes, that

given social support, individuals are better able to translate between activities, with activities reinforcing themselves over time.

On the whole, this dissertation focused on understanding innovation and how it interfaces with other factors to advance a reciprocal association within the process. It also demonstrated how innovation connects with servant leadership and well-being. Additionally, this project's results presented vital indications to the Conservation of Resource, Job Demand–Resource, Job Demand–Control–Support, effectance, and paradox theories. The core implications are underlined in Table 6.1.

Table 7.12: Theoretical contributions

Theory (or research area)	Contrary findings / Gap in knowledge	Study (Chapter)	Findings / implications for theories / theoretical alterations
Innovation process	Temporal order of idea generation and implementation	Study A and C (Chapters 3 and 5)	The relationship between idea generation and idea implementation is reciprocal, which supports Amabile and Pratt's (2016) reciprocal proposition. It further complements initial forward idea generation to implementation propositions (e.g. Amabile, 2016; Perry-Smith & Mannucci, 2017) by including the feedback loop, in ways consistent with the paradox theory.
Innovation process	Rationalising the nature of the relationship between idea generation and implementation	Study A (Chapter 3)	Aligned with the effectance theory, the intrinsic motivation offers some explanation for the reverse idea implementation to generation causal linkage.
Innovation process	Factors shaping the association of idea generation and implementation	Study C (Chapter 5)	Interfacing the servant leadership and paradox theory, servant leadership enhanced the synergy between idea generation and implementation over time.
Innovation and well-being literature	The explanatory role of the innovation process on the association of servant leadership and well-being changes	Study C (Chapter 5)	Positioning the synergy of idea generation and implementation as a mediator of the effect of servant leadership on well-being shows an alternative approach to the association of servant leadership and well-being.

Innovation and well-being literature	Competing theories explain the effect of idea implementation on well-being	Study B (Chapter 4)	Servant leadership resolves competing theories on the effect of idea implementation on well-being. When servant leadership is high, the relationship is positive; else it is negative.

Methodological implications

The main methodological contribution of the results discussed in this project is the use of dynamic structural equation modelling in Study C's analysis. The research was able to examine the effect of servant leadership on the synergy between idea generation and implementation, together with the effect of the synergy on well-being changes. This is because the dynamic structural equation model allows the separation of person-specific aspects of variables from state-like temporal changes (Hamaker et al. 2018). As a result, testing the effect of those person-specific variables on associational strengths of other variables as well, the influence of relationships on other variables is possible (Asparouhov et al., 2018).

Until recently, acquiring the data for this kind of research was difficult; but now, taking advantage of technological advancements, data collection of this nature is obtainable (Hamaker et al. 2018; Watt, 1997). Advances such as digital data collection can be capitalised, as this enhances researchers' abilities to answer complex research questions. This becomes particularly useful when attempting to integrate theories with differing time orientation as was achieved with Job Demand–Resource (a snapshot) theory and Conservation of Resource (a more longitudinal based) theory. Whilst it appeared to be one of the first to test this analytic method within organisational psychology, it is hoped that more researchers will follow suit in testing core tenets and integrating more complex theories.

Methodological consideration and future research

The three studies contributing to the results of this dissertation draw data from the same pool of teachers in England. The use of teachers for this research comes with considerable advantages as these are knowledge workers, having similar work-rest patterns, and teachers generally generate and implement their ideas. Though results accord squarely with theoretical expectation and previous research, they should be interpreted cautiously, as there might be concerns limiting their generalisability. These limitations include uni-source data collection approach, non-consideration of organisational levels, and cultural factors could form the basis for future research.

As outlined as part of the empirical studies, self-reported online data collection survey allowed the collection a robust shortitudinal dataset, enabling the test of a complex longitudinal relationships over time. Although such designs are not uncommon in

organisational research, still, this method is not without limitation. The data collected method fails to account for the nested nature of teachers in departments and ultimately in schools. As research has shown, group and organisational level variables could have an influence on the innovation process (see Amabile & Pratt, 2016). As such, a carefully planned multi-levelled study would extend the scope of these findings by introducing cross-level relationship. Research would indeed benefit from understanding the role of differential servant leadership: which leaders' serving behaviours differ between employees, and on well-being and innovativeness. Multilevelled designs would be helpful in confirming Amabile and Pratt's (2016) model, which conceptualises idea implementation as a group level construct.

Along a similar line of argument, in conversations concerning idea generation and implementation, the role of culture should not go unmentioned. The respondents were teachers in the United Kingdom, a society that is less risk-averse and of low-power distance (Hofstede, 1991; Hofstede, Hofstede, & Minkov, Culture and Organizations, 2010; House, Hanges, Javidan, Dorfman, & Gupta, 2004). Individuals in less risk-averse societies are more inclined to engage in activities that involve uncertainty (Hofstede et al., 2010). Therefore, with societies that are more risk-averse, the extent to which ideas generated are implemented will likely be lower (see Sagoohi et al., 2015). A similar argument could be developed in the case of high-power distance countries, where the acceptance of high-power differential between leaders and followers is high (Hofstede, 1980). It is expected that the effect of servant leadership in such societies might be different, raising opportunities for future research to confirm this dissertation's findings cross-culturally or account for the potential impact of culture (cf. Hofstede, 1984). Importantly, culture within this context is not limited to national culture, but includes organisation and professional cultures as well.

An exciting avenue to further this research is that of leadership. In this research project, servant leadership and the resource perspective were justified and drown mainly on. It is possible that similar discussion could be based on differing leadership perspectives, for instance, relationships and trust perspective and the leader-member exchange theory (Zalesny & Graen, 1987). This is because when the relationship between leaders and followers is strong, employees feel more empowered to implement their ideas (Dansereau, Graen, & Haga, 1975). They are less worried about making mistakes as they know how their leaders would act (Graen & Uhl-Bien, 1995). As such, it is expected that similar results will emerge. The argument would not differ much, taking the justice and decision-making perspectives (Tatum et al., 2003), as positive leadership conceptualisations are related (Hoch et al., 2018).

That said, despite this relationship, these leadership perspectives still maintain their uniqueness in focus (Stone et al., 2004). Thus, exploring the relative effectivity of differing leadership perspectives would be critical to further enriching this theoretical intercept.

Integrating the results of Study A and C questions the positioning of intrinsic motivation with the paradox framework. Study A found that the intrinsic motivation provided some explanation for the effect idea implementation had on idea generation. However, advances in the paradox approach to ambidexterity highlight the possibility of more than two poles of ambidexterity (see Smith, Lewis, Jarzabkowski & Langley, 2017). It is unclear from this dissertation whether the innovation process is a triad or duality as it is conceptualised. Within the context of this study, though, it seems more like a duality, as intrinsic motivation only offers a partial explanation of the effect. Yet, the need to investigate this possibility further is hereby acknowledged.

Practical implication

This thesis presents evidence indicative of the reciprocity of the innovation process' idea generation and implementation. Further, the thesis illustrates the conditional role that servant leadership plays in ensuring employee innovativeness positively affects their well-being. Having highlighted how empirical findings contribute to different bodies of knowledge and how further research could build on and extend these findings, it is clear these present some practical implications. In this section, the managerial suggestions are discussed to enhance innovation and well-being and offer a sequential action framework which summarises them.

Because idea generation and implementation are reciprocally related, it follows that as a result of idea implementation, novel ideas could be generated. Since not all implemented ideas are generated by the individual (Paulus, 2002), by encouraging individuals to implement ideas, it is possible they will end up generating ideas. For instance, within the context of teaching, leaders could encourage their followers to search for ideas regarding a teaching-related problem on the internet. Should those teachers implement the ideas found and the problem is resolved, it is expected that the teacher would be intrinsically motivated, which in turn contributes to idea generation. Elsewhere, if the problem is partially resolved or unresolved, it might motivate the teacher to think outside the box, which again leads to idea generation. This could be extended to most professions.

Also, as suggested, intrinsic motivation also plays a key role in the potentiation of idea generation. Because other studies have shown that rewards and extrinsic motivation have a similar capability (Amabile & Gryskiewicz, 1987; Byron & Khazanchi, 2012; Hennessey & Amabile, 1998; Rickards, Chen, & Moger, 2001), it becomes fair to say that motivation is critical. This makes it essential to reward innovativeness as a means to creativity or idea generation. As such, organisations looking for ways to encourage innovation should consider encouraging employees to implement ideas in general. This could help them generate new ideas and offer reward for their innovativeness.

With respects to well-being, organisations with expectations of employee innovativeness need to ensure that their leaders serve their employees. Consistent with results recorded in the empirical studies, employee innovativeness can adversely affect well-being if this not the case. Moreover, evidence from Study C shows that without such leadership, the likelihood of innovation being long-term is limited. This is because, with low levels of servant leadership, the synergy between idea generation and implementation is weak. As such, sustainability of innovation over time is questionable. This raises the importance of organisation not only confirming their leaders demonstrate servant leadership behaviours but the need to make certain the employees perceive this to be the case. This brings to the fore the need for *anonymous* surveys or interviews to understand employee perceptions (Wiley, 2010) - such investigations gauge and track employee perception of leadership behaviour and employee well-being over time. Should leadership behaviour fall short of expectation, the organisation should put in place leadership development training, as this could unlock, not only employee innovativeness, but also promote well-being.

Therefore, this study brings to the fore five practical actions that organisations could take to ensure employee innovativeness and well-being. In summary, they are:

Monitoring of leadership perception

Leadership training

Innovativeness in performance management

Encouraging employees to test ideas

Monitor employee well-being.

A good approach to this could be to answer the following four questions leading to where to commence interventions from:

Are employee perceptions of leadership monitored?

Is leadership considered to be follower-serving?

Are employees seen as innovative?

Does the organisation reward innovation?

By responding to these questions 1 - 4, professionals based their intervention on theory-grounded, empirically supported actions A – E according to the needs in sequential order as illustrated by the chart (Figure 6.2).

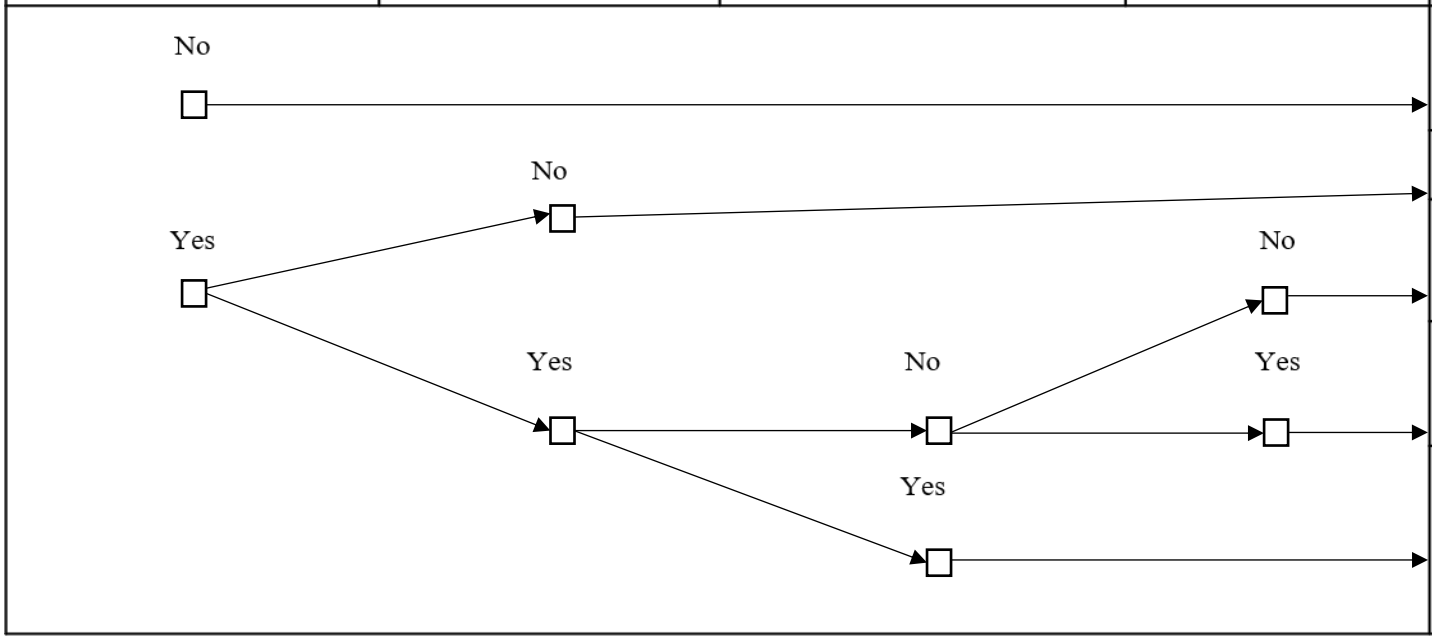
Question 1	Question 2	Question 3	Question 4	
Are employees' perceptions of leadership measured?	Is leadership considered to be follower serving?	Are employees seen to generate and implement their ideas?	Do you reward innovative behaviour?	Intervention Sequence
				1: Start monitoring by leadership perception surveys or interviews 2: Put in place leadership trainings 3: Include innovativeness in performance management 4: Encourage employees to implement any ideas they find / come up with 5: Commence monitoring employee well-being OR 6: No intervention needed

Figure 7.14: Intervention action framework

Concluding remarks

Employee innovativeness is considered as a critical factor to organisational success in today's work and business environment. The results of this dissertation present evidence for the nature of the interplay within individual innovativeness, as it shows that idea generation and implementation are reciprocally associated. The empirical findings also show that the strength of their scarcely investigated synergy is enhanced by servant leadership, in a process that ultimately enhances well-being. As such, results are indicative that servant leadership is crucial to innovation being beneficial to well-being. By examining factors that influence linkages between constructs within innovation, this dissertation shows that researchers can answer questions that can integrate a number of differing theoretical perspectives within the same analytic framework. This is typically the case as theorised phenomena hardly exist in isolation. Additionally, it is expected that these findings will present managers and organisational leaders with effective solutions aimed at enhancing employee innovativeness as well as their well-being. Considering this research as a starting point to research in this area, this dissertation highlights the need for additional research to focus on further understanding of the intercept of leadership, well-being and innovation in greater detail, especially in considering the role of organisation and team level variables, together with considering objective and multi-sourced measures.

Chapter 7. References

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Chapter 8. Appendices

Appendix 1: Survey items as questionnaire

Unique Identifiers

What are the first three letters in your mother's maiden name? (For example, if her maiden name is Johnson, then you can enter JOH):_____

What is your favorite color? _____

What are the last 3 digits on your mobile number? _____

Background

Gender:
Male ☐
Female ☐
Others ☐

Highest qualification:
Below Bachelors ☐
Bachelors or equivalent ☐
Post Graduate Qualification ☐
Master ☐
Doctorate ☐
Others ☐

Age (years): _____

How long have you been a teacher (years)? _____

How long have you taught in this school (years)? _____

What age group do you teach: _____

Survey Items

Key to agreement scales: Completely disagree (0), strongly agree (1), disagree (2), Neutral (3), Agree (4), Strongly agree (5), Completely agree (6)

At work, during the last week, to what extent do you think your leader:							
1. cared more about other team members' success than their own	**0**	**1**	**2**	**3**	**4**	**5**	**6**
2. put others' best interests above their own	**0**	**1**	**2**	**3**	**4**	**5**	**6**

3. did what they can to make others' job easier	**0**	**1**	**2**	**3**	**4**	**5**	**6**
4. sacrificed their own interests to meet the needs of team members.	**0**	**1**	**2**	**3**	**4**	**5**	**6**

Reflecting on the past week, use the scale to indicate your agreement of each statement

5. You felt quite confident that your leader will always treat you fairly.	**0**	**1**	**2**	**3**	**4**	**5**	**6**
6. Your leader didn't gain an advantage by deceiving team members.	**0**	**1**	**2**	**3**	**4**	**5**	**6**
7. You had complete faith in the integrity of your leader.	**0**	**1**	**2**	**3**	**4**	**5**	**6**

Thinking of your past week at work, using the numeric scale for frequency, indicate how many:	**0 - 1**	**2 – 3**	**4 - 5**	**6 - 7**	**8 - 9**	**10 - 11**	**Over 11**
8. new ideas for difficult issues have you generated?							
9. new teaching methods, techniques, or instruments have you developed?							
10. original solutions for teaching-related problems have you created?							
11. new ideas in solving department wide or school wide problems have you developed?							
12. new and practical ideas in improving performance did you come up with							

Reflecting on the past week, using the numeric scale for frequency, indicate how many:	**0 - 1**	**2 – 3**	**4 - 5**	**6 - 7**	**8 - 9**	**10 - 11**	**Over 11**
13. useful and novel teaching ideas did you implement in your instruction practice?							
14. innovative ideas did you introduce into your classroom practice in a systematic way?							
15. evaluations of the effectiveness of those ideas did you carry out?							
16. ideas were you successful in putting into practice?							
17. ideas that you came up with were implemented at your team or school?							

In the last week, please indicate the extent to which you:

18. had significant autonomy in determining how you did your job	0	1	2	3	4	5	6
19. could decide on your own how you went about doing your work	0	1	2	3	4	5	6
20. had considerable opportunity for independence and freedom in how you did your job	0	1	2	3	4	5	6
21. were confident about your ability to do your jobs	0	1	2	3	4	5	6
22. Were self-assured about your capabilities to perform your work activities	0	1	2	3	4	5	6
23. felt you had mastered the skills necessary for my job							

In the last week, please indicate the extent to which each of these items agree with the reasons motivating you to generate ideas at work:

24. You enjoyed finding solutions to complex problems	0	1	2	3	4	5	6
25. You enjoyed creating new procedures for teaching activities	0	1	2	3	4	5	6
26. You enjoyed improving existing instructional practices and processes	0	1	2	3	4	5	6

Now generally, for each of the following items, please indicate the extent to which you:

27. I enjoy the things that I do at work	0	1	2	3	4	5	6
28. I enjoy being in the company of others at work	0	1	2	3	4	5	6
29. On, balance, I look back on my life with a sense of happiness	0	1	2	3	4	5	6
30. I feel full of energy these day	0	1	2	3	4	5	6

Appendix 2: Factor analysis

	Loading	S.E.	Est./S.E.	P-Value
Idea generation				
Gen1	0.58	0.02	32.10	0.00
Gen2	0.90	0.01	128.16	0.00
Gen3	0.88	0.01	113.87	0.00
Gen4	0.66	0.02	42.12	0.00
Gen5	0.83	0.01	86.80	0.00
Intrinsic Motivation				
IMo1	0.75	0.01	61.639	0.00
IMo2	0.88	0.01	110.47	0.00
IMo3	0.93	0.01	132.37	0.00
Idea implementation				
Imp1	0.77	0.01	59.6	0.00
Imp2	0.78	0.01	62.73	0.00
Imp3	0.51	0.02	25.01	0.00
Imp4	0.87	0.01	86.74	0.00
Imp5	0.59	0.02	32.42	0.00
Servant leadership				
SLd1	0.95	0.004	220.68	0.00
SLd2	0.87	0.008	113.65	0.00
SLd3	0.92	0.005	190.55	0.00
SLd4	0.75	0.012	63.571	0.00
Well-being				
WB1	0.63	0.03	22.52	0.00
WB2	0.94	0.01	83.20	0.00
WB3	0.69	0.03	27.83	0.00
WB4	0.74	0.02	33.99	0.00
Autonomy				
Aut1	0.93	0.01	79.12	0.00
Aut2	0.88	0.01	64.23	0.00
Aut3	0.82	0.02	48.36	0.00
Self-efficacy				
SE1	0.88	0.01	67.43	0.00
SE2	0.92	0.01	85.58	0.00
SE3	0.88	0.01	66.83	0.00

Appendix 3: Rasch Model with illustration for the Self-efficacy scale

Drawing a Bayesian probabilistic model (Equation 5), the Rasch (1961) model places scale items and participants on the same scale demonstrating how they reflect the latent construct. In estimating respondent latent scores, responses from items are converted to probabilities, then to logits (Bejar, 1983). According to Andrich (2005), given that δ_i represents the difficulty of each item i, in comparison to other items on the scale, across participants with scale location threshold and maximum score for all statements of τ_k and m, the probability model for a participant with latent score, x, endorsing item i is presented in Equation 5 (cf. Rasch, 1961)

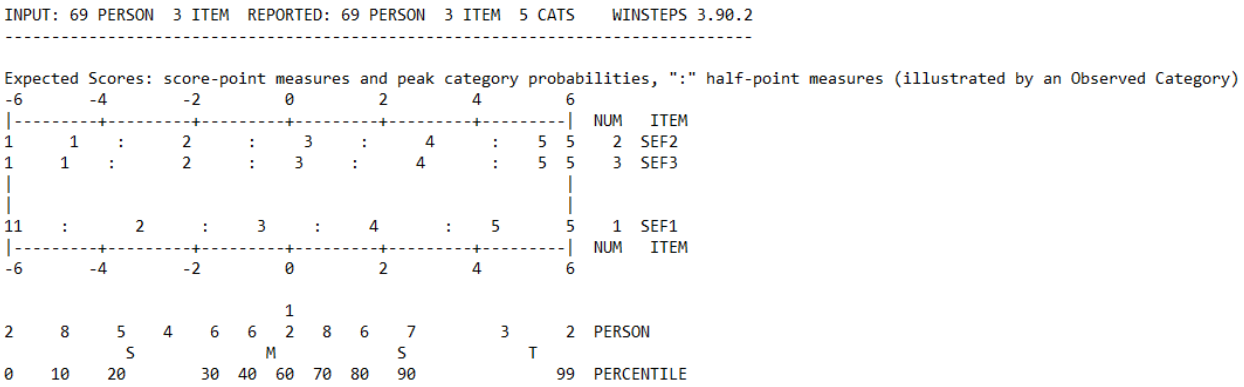
$$P(X_{ni} = x)\frac{\exp\sum_{k=0}^{x}(\beta n - (\beta_n - \tau_k))}{\sum_{j=0}^{m}\exp\sum_{k=0}^{j}(\beta n - (\beta_n - \tau_k))}$$

Equation 6: Rasch model

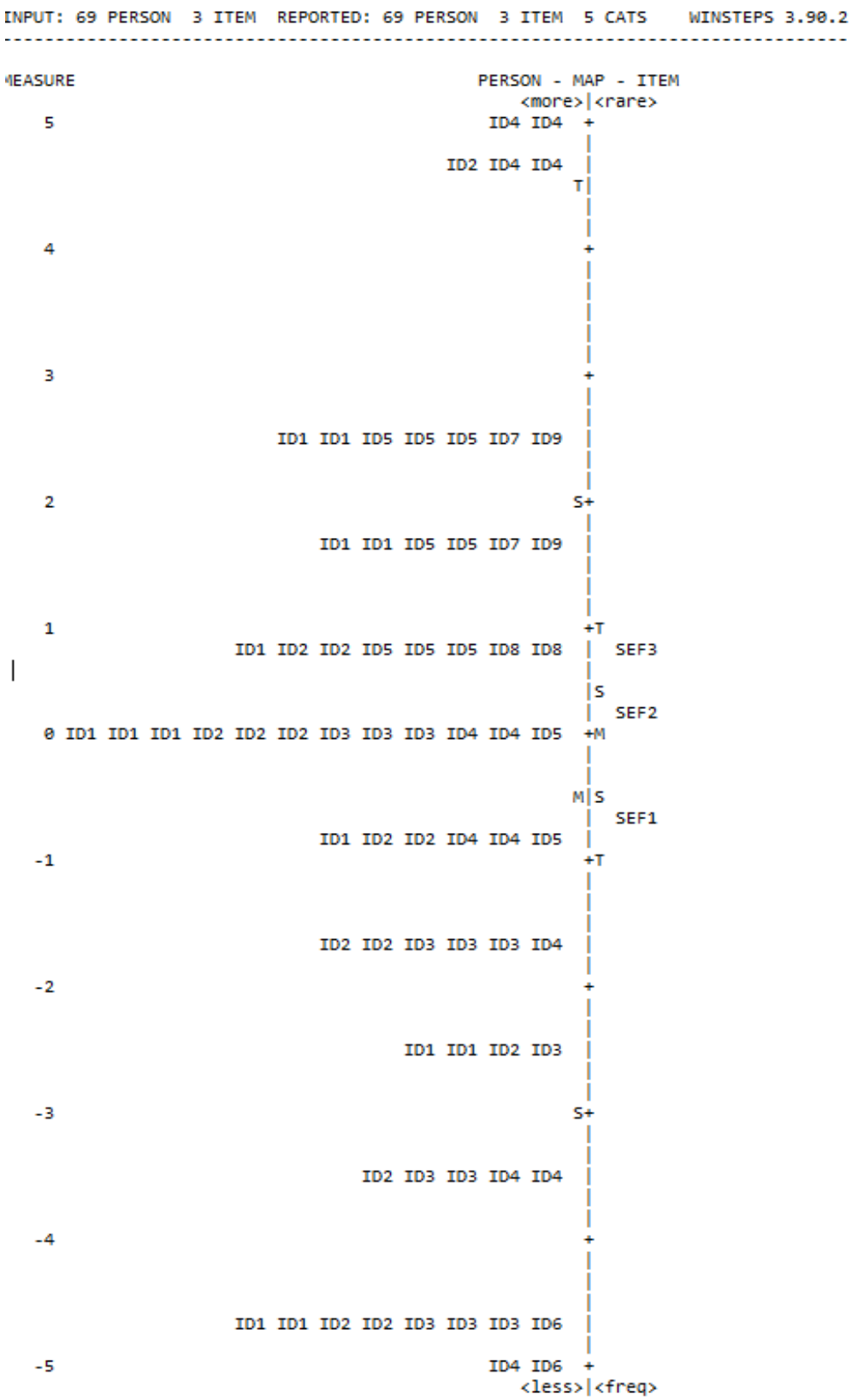
By so doing, in addition to other approaches to validity, this approach ensures that construct validity is more internal to the scale (Linacre, 2004). Also, it presents the response pattern for items on a scale on item ambiguity maps (see Appendix Figure 1). The item ambiguity map presents information pertaining to the extent to which scale responses are interval in nature. The importance of this information lies in the understanding that the factor analysis, forming foundation for the structural equation models (Loehlin, 1992), assumes that item responses are continuous in nature (Bond & Fox, 2015). In reality, because for instance the difference between "strongly agree" and "agree", and not equal to that of "strongly disagree" and "disagree", the response to Likert scales are categorical in nature (de Ayala, 2013; Norman, 2010). So, to ensure that response patterns for scales used in this research are to some extent interval in nature, examination of the ambiguity maps was carried for all scales. Also, the items difficulty map, which places items and participants on a scale according to how they reflect the latent construct, was used. This ensured that items are of differing difficulties and also mitigate the likelihood of ceiling or floor effects (Norman, 2010).

Figure 1 and 2 presents the item ambiguity and item difficulty maps for the self-efficacy constructs for Self-efficacy. As the item ambiguity map in this case indicates, response patterns might not necessarily be continuous but are ordinal, and differences between consecutive response points are fairly consistent. In the case of item maps, it was noticed that although items are seen to just span the range of participants' responses given the

five-point scale utilisation, to minimise the chance of a ceiling-and-floor effect in the measurement of constructs, seven-point scales were adopted in the full project.



Appendix figure 1: Item ambiguity map



Appendix Figure 2: Item difficulty maps

Appendix 4: Ethics Clearance

NBS-REC / E1

UNIVERSITY OF EAST ANGLIA
NORWICH BUSINESS SCHOOL
RESEARCH ETHICS COMMITTEE

RESEARCH ETHICS CHECKLIST

This form should be completed by all staff and students planning to conduct research that involves collecting data from human participants.

Before completing this form please read the University research ethics principles at:

http://www.uea.ac.uk/research/research_policies

Students should also discuss the ethical aspects of their proposed research with their supervisor before completing the form.

1. Applicant Details

Name: Sylvester Chukwuemeka Juwe

Student no. (if applicable): 100186134

Status (circle appropriate): PGT student / PGR student / Staff / Other

Course (if applicable): PhD in Management

Contact telephone number: [redacted]

E-mail address: [redacted]

Primary supervisor's name (if applicable): Roberta Fida

2. Project Details

Title of project: Leading Creativity and Innovation for Wellbeing: A comparative, multilevel and longitudinal study

3. Research Ethics Checklist

Please answer all questions by ticking the appropriate box:

	Yes	No
1. Does the study involve participants who are particularly vulnerable or unable to give informed consent? (e.g. people under 18; people with learning disabilities; students you teach/assess)		✓
2. Will it be necessary for participants to take part in the study without their informed consent at the time? (e.g. covert observation)		✓
3. Will any financial inducements (other than reasonable expenses / compensation for time) be offered to participants?		✓
4. Will the study involve discussion of sensitive topics in a personal, social, cultural, or commercial sense? (e.g. sexual activity, bereavement, drug use, illegal activities, whistleblowing)		✓
5. Could the study place participants at risk of physical or psychological harm, distress, or negative consequences beyond the risks encountered in normal life?		✓
6. Will the research involve any appreciable threat to the health and safety of the researcher(s)?		✓
7. Will the study involve any incitement to, encouragement of, or participation in, an illegal act? (by participant or researcher)		✓
8. Will the study involve recruitment of patients or staff through the NHS?		✓
9. Will participants be informed about the purpose of the research and the nature of the research procedures?	✓	
10. Will participants be debriefed after taking part in the research?	✓	
11. Will arrangements be made to ensure that data obtained from/about participants remains confidential?	✓	
12. Will participants be informed about the use to which the data will be put?	✓	
13. Will the consent of participants be obtained?	✓	
14. Will it be made clear to participants that they are free to withdraw from the research at any time, without negative consequences?	✓	

If you ticked a **WHITE** box for **ALL** questions in the checklist, further ethical approval from the NBS Research Ethics Committee is not required. Simply sign and return this form as indicated on page 3.

If you ticked a GREY (i.e. shaded) box for ANY question, you will also need to complete form E2: NBS ETHICAL APPROVAL FORM. The form asks you to provide more information about how you plan to deal with the 'grey area' ethical issues raised by your research. This does not mean that you cannot do the research but your proposal will have to be considered and approved by the NBS Research Ethics Committee.

Important: Please note that it is your responsibility to follow the University research ethics principles and any relevant academic or professional guidelines in the conduct of your study. **This includes providing participants with appropriate information sheets and consent forms, and ensuring confidentiality in the use and storage of data in accordance with the Data Protection Act.** Any significant change in the research question or design of the study may require completion of new E1 and/or E2 forms.

4. Signatures

Signature of Applicant: 

Date: 3-5-17

Supervisor declaration (for student research only)
Please tick as appropriate:

- ☐ I have discussed the checklist and ethical implications of the proposed research with the student and am satisfied that the study does not raise ethical problems that must be considered by the NBS Research Ethics Committee.
- ☐ I have discussed the checklist and ethical implications of the proposed research with the student. One or more potential ethical issues have been identified which require completion of form E2: Ethical Approval Form for consideration by the NBS Research Ethics Committee.

Signature of Supervisor: 

Date: 3-5-17

Submitting your Form(s)

PLEASE PHOTOCOPY THIS FORM FOR YOUR OWN RECORDS AND SUBMIT THE ORIGINAL

IF YOU ALSO NEED TO COMPLETE AN ETHICAL APPROVAL FORM (E2), PLEASE SUBMIT IT WITH THIS FORM (E1)

Please return your completed form(s) as follows:

PGT Students: NBS Teaching Office

PGR Students: SSF Postgraduate Research Office

NBS Staff: HoS Secretary

Appendix 5: Table of Definitions

Word / Phrase	**Definition**
Control	"Job control, which is sometimes called decision latitude, refers to the person's ability to control his or her work activities" (Van der Doef & Maes, 1999, p.88)
Demand	Work or personal aspects that need physical or psychological efforts, in other words, come with a psychological cost (Karasek, 1979)
Idea generation or creativity	Idea generation or creativity is the process of coming up with *useful intended* and novel ideas (Hughes et al., 2018)
Idea implementation	Idea implementation involves processes when enacting ideas (Hughes et al., 2018)
Innovation process or innovativeness	Processes involved in the development and introduction of new and improved ways of doing things (Anderson et al., 2014)
Interplay	Describes how two or more psychological constructs affect each other when they exist together.
Intrinsic motivation	Intrinsic motivation is seen as the extent to which employees are excited about and engage in their work activity for its own sake (Utman, 1997)
Leadership	The process of influencing people towards the achievement of common goals (Northouse, 2015)
Paradox	"Contradictory yet interrelated elements (dualities) that exist simultaneously and persist over time; such elements seem logical when considered in isolation, but irrational, inconsistent, and absurd when juxtaposed" (Smith & Lewis, 2011, p.387).
Personal / Job resource	Personal resources differ from job resources in the sense that they are employees' positive self-evaluations of their ability to control and impact their environment successfully (Hobfoll, Johnson, Ennis, & Jackson, 2003)

Resources	Personal or work-related aspects that are helpful in achieving goals, reducing demands and inducing personal growth (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2007)
Self-efficacy	Self-efficacy is seen as individuals' belief in their innate ability to meet work-related goals (Bandura, 1977)
Servant leadership	Leadership perspective that is about service to followers ensuring common good. Servant leaders see supporting their followers' development and achievement of their personal aspirations as the essence of leadership (Liden et al., 2008)
Social support or support	Social support is seen as the perception of being cared for by other people at work (Johnson & Hall, 1988)
Synergy	The strength of the linkages between contrasting or paradoxical activities (Koryak, Lockett, Hayton, Nicolaou, & & Mole, 2018)
Well-being	The extent to which individuals subjectively evaluate their lives (Diener, 1984).