

**Exploring social capital architectures enabling emergence
of business unit ambidexterity**

by

Kudakwashe Cletton Phairah

GIBS Student number: 11352002

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ABSTRACT

Attaining business unit ambidextrous capability is a desirable achievement. It is even more desirable now than ever before, owing to the increasingly complex environments with which firms must contend. The literature identified firm adaptability as a key strategic capability. Failure to adapt could lead to obsolescence. Ambidexterity has mostly been regarded as a firm-level capability that is normally developed from ambidextrous human capital. An alternative path was theorised, postulating that specialised human capital could also be a source of ambidextrous capability through social capital mechanisms. The literature, however, has identified the lack of research at the lower levels of the firm. This research, therefore, aims to explore how specialist human capital could be a source of business unit ambidexterity through social capital mechanisms. This knowledge will enable managers to have a good grasp of the mechanisms and design work systems that could build this capability. This study followed a qualitative case study design approach to get an in-depth understanding of the social mechanisms that enable the development of ambidexterity within the case context. Twelve interviews with specialist managers from the engineering and forestry business unit of the case firm were carried out. The managers represented the junior, middle and senior management levels. The interview transcripts were analysed using the directed content analysis with new codes inductively coded during the transcription analysis process. The study findings concluded that business unit ambidexterity is a complex construct to operationalise. The study identified the key processes that complemented each other and facilitated the development of business unit ambidextrous capabilities. A model that integrates the key processes emerged from the study. The model offers mechanisms at three firm levels that complement each other: individual human capital level, business unit social capital, firm-level organisational capital, and human resources practices that cut across all levels. A strong cooperative social climate underpinned by trust creates a supportive environment that facilitates knowledge sharing and exchange. The model integrates the key elements identified in the study as crucial to the development of business unit ambidexterity and managers could use it as a guideline when they are building business unit ambidextrous capabilities based on specialist human capital.

Keywords: Ambidexterity, ambidextrous, dynamic, adaptability, exploitation, exploration, knowledge resources, organisational learning, social capital

DECLARATION

I declare that this research is my work. It is submitted in partial fulfilment of the requirements for the degree of Business Admin at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other university. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Kudakwashe Cletton Phairah

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CHAPTER 1: PROBLEM DEFINITION AND PURPOSE

1.1 Introduction and Description of the Problem

Attaining business unit (BU) ambidextrous capability is a desirable achievement. It is more desirable now than ever before, owing to the increasingly complex environments with which firms must contend (Levinthal & March, 1993; Luger, Raisch, & Schimmer, 2018; Uhl-Bien & Arena, 2018). The literature has identified firm adaptability as a key strategic capability (Fu et al., 2017). Failure to adapt could lead to obsolescence (Uhl-Bien & Arena, 2018).

Contemporary literature on ambidexterity posits that neither firms that follow a one-sided exploration or exploitation approach nor ambidextrous firms that follow a balanced approach are guaranteed longevity in the face of complex change (Luger et al., 2018). Luger et al. (2018) argued ambidexterity could have self-reinforcement effects. They argued that maintaining ambidexterity could result in the firm benefitting or suffering as the environment changes. The authors challenged the static view of attempting to always achieve a balance between exploration and exploitation activities. They brought about a new perspective of dynamic response to the shift in the firm's context and reconceptualised the ambidexterity concept. The reconceptualised ambidexterity approach aims to dynamically balance the exploitation and exploration activities and shift these activities to align with the external environmental changes (Luger et al., 2018).

March (1991, p. 71) described exploitation to include “such things as refinement, choice, production, efficiency, selection, implementation, execution”, and exploration to include “things captured by terms such as search, variation, risk-taking, experimentation, play, flexibility, discovery, innovation”. Traditional ambidexterity approaches initially considered exploiting and exploring to be mutually exclusive (March, 1991), and this moved to a growing literature that both could be pursued simultaneously (Turner & Lee-Kelley, 2013) leading to the contemporary views of dynamic ambidexterity (Luger et al., 2018).

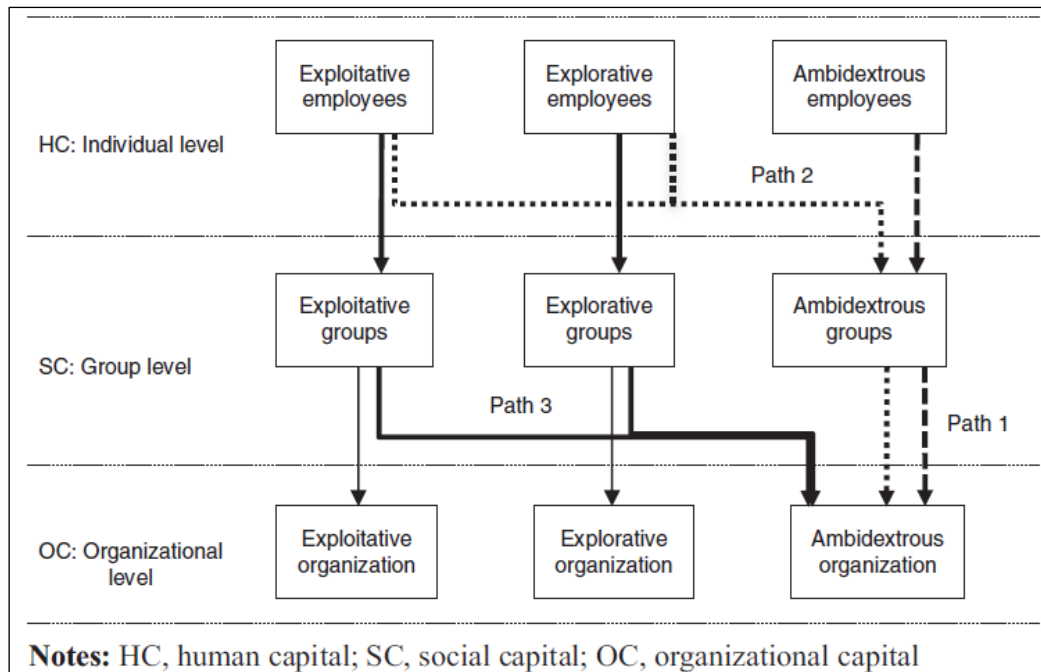
Managers have always faced the challenge of managing the paradoxical tensions to simultaneously host an exploitative efficiency-orientated process management, while still maintaining exploration and innovation (Benner & Tushman, 2015; Kostopoulos, Bozionelos, & Syrigos, 2015). The tensions, however, are increasing and are amplified by the rapid digitisation that has changed innovation production modes (Benner & Tushman, 2015) and contending with an increasingly complex and volatile environment (Luger et al., 2018; Uhl-Bien & Arena, 2018). Benner and Tushman (2015) cautioned that this might have implications on the accuracy, relevance, and assumptions of past research outcomes.

Although research on understanding ambidexterity is increasing, there is a gap in understanding how ambidextrous organisational capabilities are created (Cao, Gedajlovic, & Zhang, 2009; Fernández-Pérez de la Lastra, García-Carbonell, Martín-Alcázar, & Sánchez-Gardey, 2017; O'Reilly & Tushman, 2011; Turner & Lee-Kelley, 2013; Turner, Maylor, & Swart, 2015). Scholars have identified operationalising ambidexterity within firms as a complex process (Kostopoulos et al., 2015; Lavie, Stettner & Tushman, 2010).

Mechanisms through which ambidexterity is achieved requires further research, specifically research that covers broader contexts that could include different national contexts, and different institutional, regulatory and cultural characterisations (Kostopoulos et al., 2015) and the understanding of interactions at the lower levels of the firm (Fernández-Pérez de la Lastra et al., 2017; Turner et al., 2015; Turner & Lee-Kelley, 2013). Scholars have also investigated the relationships between organisational learning by using organisational knowledge resources (intellectual capital) and the development of ambidextrous capacity (Fernández-Pérez de la Lastra et al., 2017; Kostopoulos et al., 2015; Raisch & Birkinshaw, 2008; Turner et al., 2015 & Turner & Lee-Kelley, 2013).

Ambidexterity has always been understood as a firm-level capability (Luger et al., 2018). Much research has been done at the firm level, and little has been done at the lower levels of the firms. Ambidextrous capabilities at the firm level have always been known to be developed from ambidextrous human capital.

Fernández-Pérez de la Lastra et al. (2017) in their three-path model, however, illustrated in Figure 1, offered an alternative approach to developing BU and ambidextrous capabilities using specialist human capital through social capital mechanisms (path 2). They called for future empirical research that would go deeper into getting more understanding of the mechanisms underlying the different pathways. This study, therefore, is a response to the call and will focus on path 2, postulating that BU ambidexterity could come from specialist human capital through social capital mechanisms. Contemporary research suggests that there must be greater consideration for social capital strategies in driving both performance and innovation within complex firms (Arena & Uhl-Bien, 2016; Nahapiet & Goshal, 1998; Subramaniam & Youndt, 2005).



Social systems characteristics

Social systems	Structural	Social capital dimensions	
		Affective	Cognitive
Cooperative	Strong and dense networks	Institutional trust	Common understanding of how knowledge is integrated
Entrepreneurial	Weak and non-redundant networks	Individual trust	Shared technical and operational knowledge

Figure 1: Ambidexterity emergence through social capital

Source: Fernández-Pérez de la Lastra et al. (2017:739)

Arena and Uhl-Bien (2016) argued that there is evidence of a shift by human resources practitioners from only focusing on human-centred strategies (e.g. employee engagement, performance management systems, and leveraging on people analysis) to social capital strategies to drive innovation and performance within complex firms. Contemporary research questions the effectiveness of only relying on human-centred strategies when driving organisational performance (Arena & Uhl-Bien, 2016).

Ambidexterity is embedded in the social contexts of firms (March, 1991). Firms that have some specific capabilities for creating and sharing knowledge (social capital) will have a distinct competitive advantage (Nahapiet & Goshal, 1998). Nahapiet and Goshal (1998) defined social capital as “the sum of actual and potential resources embedded within, available through, and derived from the network of relationships, possessed by an individual or social unit” (p. 243).

The literature identified three interrelated forms of social capital, namely the structural, relational, and cognitive dimensions (Arena & Uhl-Bien, 2016; Fernández-Pérez de la Lastra

et al., 2017; Kang & Snell, 2009; Nahapiet & Goshal, 1998). Arena and Uhl-Bien (2016) highlighted that how people connect could create a firm competitive advantage. Nahapiet and Goshal (1998), however, urged for more work to be done to highlight the significance of social capital in creating competitive advantage.

1.2 Purpose of the Research

This study responds to the call by Fernández-Pérez de la Lastra et al. (2017) for future empirical research that would go deeper into getting a better understanding of the mechanisms underlying the mechanisms leading to the creation of BU ambidextrous capability based on specialist human capital and through social capital mechanisms. There is increasing evidence for firms to develop ambidextrous capabilities to gain a competitive advantage in the face of an increasingly complex operating environment (Cao et al., 2009; Fernández-Pérez de la Lastra et al., 2017; O'Reilly & Tushman, 2011; Turner et al., 2015; Turner & Lee-Kelley, 2013).

Much research has been done on understanding the importance of the ambidexterity concept; however, very little research has been done to understand the underlying mechanisms on how ambidexterity is achieved within firms (Benner & Tushman, 2015; Fernández-Pérez de la Lastra et al., 2017; Turner et al., 2015). Ambidexterity has mostly been regarded as a firm-level capability that is normally developed from ambidextrous human capital. Fernández-Pérez de la Lastra et al. (2017) theorised an alternative path, postulating that specialised human capital could also be a source of ambidextrous capability through social capital mechanisms. The literature, however, identified the lack of research at the lower levels of the firm. This research, therefore, aims to explore how specialist human capital could be a source of BU ambidexterity through social capital mechanisms.

The context within which the research will be conducted also brings forth a unique contribution to the understanding of the ambidexterity theory. Further to the theoretical contributions of the research, the research will also have some practical benefit for operating managers responsible for BUs. The literature also alluded that managers are facing numerous and strategic paradoxical challenges, which have been amplified by radical digital progress (Benner & Tushman, 2015). Owing to this increasing need for managers to contend with the complexity to create or stimulate the emergence of ambidextrous capabilities within their BUs, managers must understand the underlying mechanisms on how this is achieved.

This research will assist managers with a better understanding of the processes of how ambidexterity could be achieved within a BU. The research will give managers a deeper understanding on how the different social capital dimensions (structural, relational, and

cognitive) and their interactions or architectures could result in the emergence of ambidexterity within the BU and ultimately, within the entire firm.

1.3 Research Problem

The research aims to:

- determine how ambidexterity is understood within the BU;
- understand how ambidexterity is manifested within the BU; and
- determine what are the perceived social capital architectures that prevail within the BU and how they enable the emergence of BU ambidexterity.

To gain a deeper understanding of how social capital architectures within the firm enable the emergence of ambidexterity, the research responds to the call by Fernández-Pérez de la Lastra et al. (2017). The authors called for future research through deeper refinements of and empirical attention to the different paths in their ambidexterity emergence model (Figure 1). Fernández-Pérez de la Lastra et al. (2017, p. 741) called for the need “to separately analyse each path to obtain more specific knowledge on how they work and the way in which they can influence each other”. Organisational adaptability, ambidexterity, human capital, social capital, organisational capital, and human resources are reviewed in the literature review section.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literature that forms the theoretical base of the research. The study responds to the call by Fernández-Pérez de la Lastra et al. (2017), for empirical research and deeper refinements to their three-path ambidexterity model. The study explored the mechanisms or pathways through which social capital architectures enable or restrain the emergence of ambidextrous capability at the BU level. The review is divided into the following themes: organisational adaptability, ambidexterity, ambidexterity based on human capital, ambidexterity through social capital, ambidexterity through organisational capital and human resource practices.

2.2 Organisational Adaptability

One of the greatest challenges firms face today is that of increasingly complex, dynamic, and demanding environments (Levinthal & March, 1993; Luger et al., 2018; Uhl-Bien & Arena, 2018). In such environments, if organisations are to avoid obsolescence, they must continuously adapt in harmony with the environment. Organisational adaptability has been studied extensively through various lenses (Uhl-Bien & Arena, 2018). The lenses include ambidexterity (Gibson & Birkinshaw, 2004; Kostopoulos et al., 2015; Luger et al., 2018; March, 1991; O'Reilly & Tushman, 2011; Raisch & Birkinshaw, 2008; Turner & Lee-Kelly, 2013; Turner et al., 2015), dynamic capabilities (Arena & Uhl-Bien, 2016; Bowman, 2003; Gibson & Birkinshaw, 2004; March, 1991; O'Reilly III, & Tushman, 2011; Raisch & Birkinshaw, 2008; Teece, Pisano, & Shuen, 1997) and complexity science (Arena & Uhl-Bien, 2016; Havermans, Den Hartog, Keegan & Uhl-Bien, 2015; Uhl-Bien & Arena, 2018).

Notably, Uhl-Bien and Arena (2018) argued that although organisational adaptability has been studied across several lenses, they observed similarities between the different lenses in the mechanisms through which organisations adapt to the complex challenges. One such similarity was that knowledge and learning are crucial enablers, and leaders could enable organisational adaptability through “collaboration and partnerships, along with local learning, experimentation and collaboration” (p. 94). Likewise, there has been a substantial amount of literature supporting the assertion that adaptability of the firm could be enhanced by how its knowledge stocks (human, social, and organisational capital) interact at the different firm levels (Bharati, Zhang, & Chaudhury, 2015; Fernández-Pérez de la Lastra et al., 2017; Fu et al., 2017; Kang & Snell, 2009; Kostopoulos et al., 2015; March, 1991; Subramaniam & Youndt, 2005; Turner et al., 2015).

Firms that possess these knowledge resources will also have obtained a valuable resource and capability to use as a source of competitive advantage (Nahapiet & Ghoshal, 1998; Subramaniam & Youndt, 2005). Fu et al. (2017), however, argued that it is not good enough to only possess the resources, but that the advantage lies in the firm's ability to integrate, build, and reconfigure resources and competencies, which, in essence, makes a firm adaptive (Uhl-Bien & Arena, 2018).

While organisational learning scholars have acknowledged the development and use of knowledge resources for competitive advantage, they have also grappled with mechanisms detailing how adaptive firms should manage the tension created from the short-term exploitation of existing knowledge and long-term exploration for new knowledge. Scholars have carried out complex multilevel studies that integrate human, social, and organisational capitals on how firms develop adaptive capability. They contend that it is insufficient to only consider these capitals individually, but instead, to consider their combinations to fully understand the underlying mechanisms (Fernández-Pérez de la Lastra et al., 2017; Kang & Snell, 2009; Subramaniam & Youndt, 2005; Turner et al., 2015).

Scholars, however, consistently identified social capital's key role in creating adaptive capabilities (Fernández-Pérez de la Lastra et al., 2017; Kang & Snell, 2009; Subramaniam & Youndt, 2005; Turner et al., 2015). Subramaniam and Youndt (2005) argued that social capital strengthened how human and organisational capital manifested in firms. This study used the ambidexterity lens to further explore organisational adaptability mechanisms. The study explored how social capital architectures enabled the emergence of BU ambidexterity.

2.3 Ambidexterity

From the time March (1991) produced his seminal work on exploration and exploitation in organisational learning, there has been a vast amount of literature generated on the subject. March (1991, p. 71) highlighted that exploration included “things captured by terms such as search, variation, risk-taking, experimentation, play, flexibility, discovery, innovation” and exploitation included such “things as refinement, choice, production, efficiency, selection, implementation, execution”. March (1991) considered exploration and exploitation as two mutually exclusive learning activities that compete for the firm's resources and argued that by doing more exploitation than exploration activities, the firm faces the risk of reaping short-term benefits and not surviving in the long run.

Levinthal and March (1993), in agreement, also emphasised that if firms exclusively focused on exploration, they might never reap the benefits of their knowledge whereas focusing

exclusively on exploitation could lead to obsolescence. Firms, therefore, face the challenge of engaging sufficient exploitation to ensure current viability and sufficient exploration to ensure future viability. The authors argued that to survive, organisations must have a balance. They also observed that the precise optimal mix was unknown. Levinthal and March (1993) highlighted the problems firms face when trying to balance the two as the trap of learning, failure, and success. They noted that learning brings competitive advantage and observed that groups that are more trained and experienced performed better than non-experienced groups.

Ambidexterity scholars have tried to address this tension between exploitation and exploration activities, and instead of seeing them as mutually exclusive, they explored more on how both could be simultaneously achieved (Gibson & Birkinshaw, 2004; Kostopoulos et al., 2015; O'Reilly & Tushman, 2011; Raisch & Birkinshaw, 2008; Turner & Lee-Kelly, 2013; Turner et al., 2015). Ambidexterity is generally defined as the capability of a firm to both exploit existing competencies and explore new opportunities, and achieving ambidexterity would enable a firm to enhance its performance and competitiveness (Cao et al., 2009; Gibson & Birkinshaw, 2004; Kostopoulos et al., 2015; March, 1991; Raisch & Birkinshaw, 2008; Turner & Lee-Kelly, 2013; Turner et al., 2015). There, however, has been conceptual dispersion among scholars on the meaning of the term (Fernández-Pérez de la Lastra et al., 2017; Raisch & Birkinshaw, 2008; Turner et al., 2015; Turner & Lee-Kelly, 2013).

Scholars have identified the operationalising ambidexterity within firms as a complex process (Kostopoulos et al., 2015; Lavie et al., 2010). Studies have noted that achieving ambidextrous capability was a lengthy, resource-intensive exercise, and firms were aware that the returns of this investment were only to be expected in the long term (Luger et al., 2018). Studies, therefore, have focused on mechanisms to help firms develop that capability, and this included structures, contexts, leadership systems, networks incentive systems, and control systems. Contemporary scholars have challenged the static view of ambidexterity (Luger et al., 2018). Lavie et al. (2010) argued that “the distinction between exploration and exploitation is often a matter of degree rather than kind” (p.114). In practice, exploration and exploitation could be viewed as a continuum rather than a choice between discrete options (Kang & Snell, 2009; Lavie et al., 2010).

Lavie et al. (2010) also highlighted that limited resources often compelled firms to choose one type over the other. They further argued that there is no compelling reason why a firm would choose one measure over the other; yet, the results were highly sensitive when the firm got or did not get the correct mix that aligned with its context.

Other scholars have argued that in a world where change is less frequent, exploration was a more superior strategy to pursue owing to the value new knowledge brought (March, 1991). In periods of discontinuous change, however, exploitation might be a more appropriate strategy to follow since rapid change erodes the benefit of new knowledge (Luger et al., 2018). In contrast, Havermans et al. (2015) argued that exploitation was a more favourable strategy in stable environments and exploration in more unstable environments.

Luger et al. (2018) argued that ambidexterity could have self-reinforcement effects. They argue that maintaining ambidexterity could result in the firm benefitting or suffering as the environment changes. The authors challenged the static view of attempting to always achieve a balance between exploration and exploitation activities. They brought about a new perspective of dynamic response to the shift in the firm's context and reconceptualised the ambidexterity concept. Luger et al. (2018) noted that reinforcing ambidexterity when firms are facing incremental change could have positive results. When, however, faced with discontinuous change environments, maintaining ambidexterity could have negative results owing to the misalignment with the external context. Luger et al. (2018), therefore, postulated that ambidexterity might be a mere episode among cycles of exploitation or exploration as the firm adapts to the prevailing context.

Scholars have studied temporal (time-based), structural (separation of units overseen by management), and contextual (behaviour) forms of ambidexterity (Benner & Tushman, 2015; Cao et al., 2009; Turner et al., 2015; Turner & Lee-Kelley, 2013). There is evidence in the literature of a shift towards more contextual ambidexterity research from the traditional focus on structural ambidexterity (Benner & Tushman, 2015; Kang & Snell, 2009; Gibson & Birkinshaw, 2004; Papachroni, Heracleous, & Paroutis, 2015). Gibson and Birkinshaw (2004) highlighted that contextual ambidexterity is achieved by processes that allow individuals to choose how to divide their time between exploitation and exploration activities whereas structural ambidexterity is the creation of separate structures that are assigned the responsibility of either exploring or exploiting.

Chebbi, Yahiaoui, Vrontis, and Thrassou (2015) argued for a dual approach that considered both structural and contextual aspects in the design of an organisation. The ambidexterity research field has matured, and these debates about using structure to deal with the tensions of exploration and exploitation could be reaching closure (Benner & Tushman, 2015). Contemporary research has moved towards the dynamic balancing of exploitation and exploration by combining capability-building processes and processes that shift capabilities to align with the demands of the prevailing context (Luger et al., 2018).

It is evident in literature that, even though the benefits of ambidexterity are mostly understood, there is a lack of understanding on how it is enabled within firms (Cao et al., 2009; Gibson & Birkinshaw, 2004; Lavie et al., 2010; O'Reilly & Tushman, 2011), in particular, understanding how ambidexterity is realised at the lower levels of firms (Benner & Tushman, 2015; Kostopoulos et al., 2015; Turner et al., 2015). Most ambidexterity research has been done at the organisational level, and it has mostly been quantitative (Turner & Lee-Kelly, 2013). Turner and Lee-Kelly (2013) also observed limited attention to lower-level firm structures such as departments, functional groups, or project teams.

Several studies have attempted to unpack the mechanisms on how ambidexterity is operationalised at the different levels of firms: at individual (Laureiro-Martínez, Brusoni, Canessa, & Zollo, 2015), projects (Turner et al., 2015), group or BU (Gibson & Birkinshaw, 2004; Kostopoulos et al., 2015), organisational (Bharati et al., 2015; Cao et al., 2009; Fu, Ma, Bosak, & Flood, 2016; Lubatkin, Simsek, Ling, & Veiga, 2006; Raisch & Birkinshaw, 2008) and multilevel (Chang, 2015; Fernández-Pérez de la Lastra et al., 2017; Kang & Snell, 2009).

Owing to the gap in ambidexterity literature on results that show how firms create organisational capabilities, some authors have developed models from a multilevel perspective that illustrate how it could be done (Chang, 2015; Fernández-Pérez de la Lastra et al., 2017; Kang & Snell, 2009). Fernández-Pérez de la Lastra et al.'s (2017) three-path model (Figure 1) offered an alternative perspective to the traditional view of ambidexterity. The model offers three complementary pathways that generate firm ambidexterity linking all the organisational levels. The first path is based on human capital, the second path is based on mechanisms through social capital, and the third path is through the organisational capital infrastructure (Figure 1). This study focused on the exploration of the social capital mechanisms pathway. Notably, Fernández-Pérez de la Lastra et al.'s (2017) model offers a contemporary alternative pathway that argues that specialist human capital could also be a source of firm ambidexterity.

Raisch and Birkinshaw (2008, p. 396) contended that "the level of analysis is vitally important, because choices about how to resolve the tension at one level of analysis are often resolved at the next level down". The literature has highlighted operationalising ambidexterity as a complex process. Ambidextrous organisations are known for their comprehensive structural, contextual, and leadership mechanisms (Luger et al., 2018). It, therefore, is under this premise that this study took an empirical approach to understand how social capital architectures enable or restrain the emergence of ambidextrous capability at the BU level. The study responded to the call by Fernández-Pérez de la Lastra et al. (2017) for further empirical

research that explores the individual ambidexterity emergence pathways depicted in their model (Figure 1).

This study focused on a deeper exploration of the social capital mechanisms pathway (path 2). The following sections of the review will further discuss each pathway; ambidexterity based on human capital, ambidexterity through social capital, and ambidexterity through organisational capital.

2.4 Ambidexterity Summary

Firms are faced with the challenge of increasingly complex, dynamic, and demanding environments. To avoid obsolescence, they, therefore, must continuously adapt in harmony with the environment. Organisational adaptability has been studied extensively through various lenses. Some of the main lenses are ambidexterity, dynamic capability, and complexity science. One common thread observed, however, is that knowledge and learning are crucial enablers of organisational adaptability. Substantial literature supports the assertion that the adaptability of the firm could be enhanced by how its knowledge stocks interact at the different levels of the firm. The literature, however, argued that it is not good enough to possess these knowledge resources but that the advantage lies in the firm's ability to integrate and build them.

Past research considered exploration and exploitation as two mutually exclusive learning activities that compete for the firm's resources and argued that by doing more exploitation than exploration activities, the firm faces the risk of reaping short-term benefits and not surviving in the long run. Ambidexterity scholars have argued that to survive, organisations must continually aim at achieving a balance of high levels of exploitation and exploration; however, they also noted that the precise optimal mix was unknown. Scholars reported that learning brought a competitive advantage and observed that the more trained and experienced groups performed better than non-experienced groups.

Ambidexterity scholars have tried to address this tension between exploitation and exploration activities, and instead of seeing them as mutually exclusive, they explored more on how both could be simultaneously achieved. Scholars have identified operationalising ambidexterity within firms as a complex process. Studies have highlighted that achieving ambidextrous capability is a lengthy and resource-intensive exercise, and firms are aware that the returns of this investment are to only be expected in the long run. Studies, therefore, have focused on mechanisms to help firms develop that capability, such as structures, contexts, leadership systems, networks incentive systems, and control systems.

Past research has argued that in a world where change is less frequent, exploration is a more superior strategy to pursue owing to the value new knowledge brings. In periods of discontinuous change, exploitation, however, might be a more appropriate strategy to follow since rapid change erodes the benefit of new knowledge.

Contemporary scholars have challenged the static view of ambidexterity. The traditional view attempted to always achieve a balance between exploration and exploitation activities. The current perspective calls for a dynamic response to the firm's context. Reinforcing ambidexterity when firms are facing incremental change might have positive results. When, however, faced with discontinuous change environments, maintaining ambidexterity might have negative results owing to the misalignment with the external context. These contemporary scholars, therefore, postulate that ambidexterity might be a mere episode among cycles of exploitation or exploration as the firm adapts to the prevailing context.

The ambidexterity research field has matured, and debates about using structure to deal with the tensions of exploration and exploitation might be reaching closure. Some scholars have argued for a dual approach that considers both structural and contextual aspects in the design of an organisation. Contemporary research, however, has moved towards the dynamic balancing of exploitation and exploration through combining capability-building processes with the processes that shift capabilities to align with the demands of the prevailing context. Such processes have been acknowledged in the literature as complex and involve comprehensive structures, contexts, leadership systems, networks, incentive systems, and control systems.

A gap still exists in the literature on the mechanisms detailing how ambidexterity is achieved across the different levels within the firm. Several studies have tried to unpack the mechanisms on how ambidexterity is enabled within firms at individual, group or BU, organisational, or multilevel, in particular, understanding how ambidexterity is achieved at the lower levels of firms. Contemporary multilevel research offers a more integrative perspective on how the firm's ambidextrous capabilities are created.

The three-path model is one such model, and this study responds to the authors' call for an empirical study to explore deeper the ambidexterity emergence pathways proposed. In the first path, ambidexterity was based on individual human capital, in the second path, through social capital mechanisms, and the third path, through organisational capital infrastructure. This study, however, focused more on the second path. The three-path model extended the traditional view that firms' ambidexterity only emerged from ambidextrous individual human capital to a new perspective that even specialist human capital could also result in the emergence of firm ambidexterity through social capital mechanisms.

Most of the ambidexterity research has been done at the organisational level, and it has mostly been quantitative. There has been limited attention to qualitative studies that explore ambidexterity at lower levels of the firm structures such as departments, functional groups, or project teams. The premise of this qualitative study, therefore, has been to explore how social capital architectures enable the emergence of ambidextrous capability at the BU level.

2.5 Ambidexterity Based on Human Capital

It is people in the firm and not organisations who perform; therefore, it is necessary to always start at the individual level (Fernández-Pérez de la Lastra et al., 2017). The calibre and motivation of a firm's employees are crucial antecedents of its strategic capabilities (Fu et al., 2017). Employees with higher knowledge, skills, and abilities are more likely to be ambidextrous (Chang, 2015). Extant literature concurs that human capital is inseparably linked to human capital (Chang, 2015; Fu et al., 2017). Subramaniam and Youndt (2005, p. 451) defined human capital as "the knowledge, skills, and abilities residing with and utilized by individuals". Having a high human capital is desirable.

Fu et al. (2016) argued that employee discipline and stretch were important antecedents to building a high human capital. Discipline emanated by employees having clear expectations and quick feedback about their performance whereas stretch resulted in employees voluntarily taking on more ambitious projects owing to a perceived shared group ambition (Fu et al., 2016). Fu et al. (2016), however, cautioned that context matters when it comes to the effective application of intellectual capital to stimulate ambidexterity. In particular, they observed that human capital was more influential in western countries with individualistic cultures compared to countries with more collective cultures where social and organisational capital were more significant in supporting the emergence of firm ambidexterity.

Organisational learning literature has an ongoing deliberation on the value of specialist and generalist human capital (Kang & Snell, 2009). Specialists have narrowed entrenched functional bias, and according to Kang and Snell (2009, p. 69), they are often either reluctant or cannot "exchange and combine new knowledge beyond their specialised areas", and it is mostly associated with exploitative learning. Generalists, on the other hand, are more adept to exploratory learning since they take a more varied approach and are "to discover, comprehend, combine, and apply new knowledge in the future" (Kang & Snell, 2009:69).

Ambidexterity literature has advanced the proposition of a multilevel and integrated approach to understanding the mechanisms through which ambidextrous capability develops (Chang, 2015; Kang & Snell, 2009; Fernández-Pérez de la Lastra et al., 2017; Turner et al., 2015).

These studies developed synergistic intellectual capital architectures that facilitate ambidextrous learning at all levels of the firm. Kang and Snell (2009) posited the refined interpolation and disciplined extrapolation architectures. According to the authors, refined interpolation combined specialist human capital, cooperative social capital, and organic organisational capital, and disciplined extrapolation combined generalist human capital, entrepreneurial social capital, and mechanistic organisational capital.

Turner et al. (2015) also produced three mechanisms through which human capital in combination with the other capitals resulted in ambidextrous learning at the project level (Figure 2). The three mechanisms were process customisation (human capital combined with organisational capital) where project managers customised how to use organisational capital process and structures, personal network utilisation (human capital combined with social capital) where managers use personal experience and the network in which they are embedded, and integration of all three capital in complex dimensions. Turner et al. (2015), however, reported that contrary to the findings in the literature, they observed that the ambidexterity mechanisms were not the result of any deliberate action but instead they occurred, naturally.

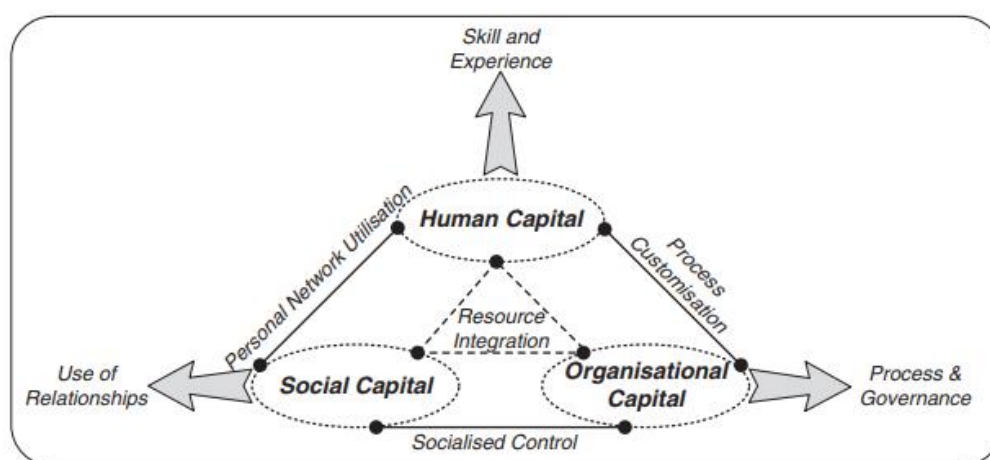


Figure 2: Mechanisms which enable ambidexterity at project level

Source: Turner et al. (2015, p. 184)

Fernández-Pérez de la Lastra et al. (2017) theorised that ambidextrous capability accumulated through the firm's levels starting with the human capital base. They proposed three complementary mechanisms of achieving ambidexterity, namely ambidexterity-based human capital (path 1), ambidexterity through social capital mechanisms (path 2), and ambidexterity through organisational capital infrastructure (path 3) (Figure 1).

Their model extended traditional models that limited the development of unit-level and firm-level ambidextrous capability to a generalist human capital base. They highlighted that specialist human capital could also generate firm ambidextrous capabilities through social capital mechanisms and organisational capital infrastructure (paths 2 and 3). The scope of this study, however, was to explore how social capital architectures enabled the emergence of BU ambidexterity (path 2), and due to the intricate link between the human capital and the social capital, it was necessary to give a separate review of human capital.

2.6 Human Capital Summary

Many organisational scholars saw a high human capital base as a desirable base from where to build the firm's ambidextrous capability. The calibre and motivation of a firm's employees, therefore, are crucial antecedents of the firm's strategic capabilities. Employees with higher knowledge, skills, and abilities, therefore, are more likely to be ambidextrous. Extant literature concurs that human capital is inseparably linked to human capital.

Context matters when it comes to the effective application of intellectual capital to stimulate ambidexterity. An observation was made that human capital was more significant in western countries with individualistic cultures compared to countries with more collective cultures where social and organisational capital were more significant in supporting the emergence of firm ambidexterity. There has been much deliberation in the literature on the value of specialist and generalist employees to organisational learning. Specialists have narrowed entrenched functional bias and are often either reluctant or cannot collaborate with new knowledge beyond their specialised areas. Literature has it that specialists are more aligned with exploitative learning. Generalists, on the other hand, are more adept to exploratory learning since they take a more varied approach.

Ambidexterity literature has advanced the proposition of a multilevel and integrated approach to understanding the mechanisms through which ambidextrous capability develops. These studies developed synergistic intellectual capital architectures that facilitate ambidextrous learning at all levels of the firm. Scholars proposed the following multilevel integrated approaches, namely the refined interpolation and disciplined extrapolation architectures, process customisation (HC combined with OC) where project managers customised how to use organisational capital process and structures, personal network utilisation (HC combined with SC) where managers use personal experience and the network in which they are embedded, and an integration of all three capital in complex dimensions.

Contrary to observations in the literature that architectures could be deliberately designed, other scholars reported that they observed that the ambidexterity mechanisms were not the result of any deliberate action, but instead occurred, naturally. Finally, it was noted that the three-path model extended traditional models that limited the development of unit-level and firm-level ambidextrous capability to a generalist human capital base. They highlighted in this contemporary model that specialist human capital could also generate firm ambidextrous capabilities through social capital mechanisms and organisational capital infrastructure.

2.7 Ambidexterity Through Social Capital

Nahapiet and Ghoshal (1998, p. 243) defined social capital as “the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit”. They identified three social capital dimensions: structural, relational, and cognitive. Nahapiet and Ghoshal (1998) described the structural dimension as the connections between individuals. The nature of network ties between actors, network configuration, density, connectivity, and hierarchy were important structural elements (Nahapiet & Ghoshal, 1998).

The relational dimension was manifested through the terms trust and trustworthiness, norms and sanctions, obligations and expectations, and identity and identification (Nahapiet & Ghoshal, 1998). Lastly, the authors used the terms shared representations, interpretations, and systems of meaning among individuals when describing the cognitive dimension of social capital. Tsai and Ghoshal (1998) further elaborated that the cognitive dimension “is embodied in attributes like a shared code or a shared paradigm that facilitates a common understanding of collective goals and proper ways of acting in a social system” (p. 465). The authors argued that the firm’s shared vision is likely to develop this social capital dimension and triggers individual and group action.

Scholars have acknowledged that the three dimensions of social capital complemented each other towards the emergence of ambidexterity within the firm (Kang & Snell, 2009; Fernández-Pérez de la Lastra et al., 2017; Nahapiet & Ghoshal, 1998; Subramaniam & Youndt, 2005; Tsai & Ghoshal, 1998). Tsai and Ghoshal (1998) observed that the three dimensions of social capital, social interaction, trustworthiness, and shared vision were crucial to firm value creation. They also observed that the relational dimension, in particular, trustworthiness, was significantly associated with structural and cognitive dimensions.

Benner and Tushman (2015) highlighted that rapid digitisation changed the innovation production modes. Bharati et al. (2015) highlighted the influence of social media on the social

capital dimensions. Social media has helped to enhance social capital, and this has had some positive effect on helping organisational efforts in knowledge management, subsequently resulting in a higher quality of organisational knowledge (Bharati et al., 2015). According to Bharati et al. (2015), structural capital and cognitive capital are directly affected by social media, whereas relational capital is indirectly affected through structural and cognitive capital.

In a study that investigated the link between high-performance work systems (HPWS) and the emergence of BU ambidexterity, Chang (2015) found that the firm's social climate had a moderating effect on the effect of firm-level HPWS on the emergence of BU ambidexterity. They argued that firm-level HPWS tends to support exploitation activities and, therefore, to enable BU ambidexterity, these human resource management (HRM) systems needed to be complemented with a supportive firm-level social climate. This combination of the firm's HRM strategies context and a supportive social climate facilitates knowledge combination and exchange (Chang, 2015). A supportive social climate included high levels of trust, cooperation, and shared language (Chang, 2015). In agreement, Turner et al.'s (2015) study results showed that trust was a critical enabling factor in project relationships.

Trust enhances the chance that individuals might share information because they perceive the context to allow for future reciprocity, and in essence, a social climate of trust could lead to innovation and firm growth (Chang, 2015). They further highlighted that a good firm-level social climate results in BU employees who are more receiving of firm HRM strategies, which will encourage them to further promote the positive climate. A strong social climate offered a safe context that enabled skilled employees to execute and exchange knowledge, whereas a weak social climate negatively affected BU ambidexterity and affected information and knowledge exchange and may have given rise to cognitive dissonance among employees.

Subramaniam and Youndt (2005), in agreement, also observed that social capital was a key antecedent to firm innovation capability. Swart and Kinnie (2014) argued that relational capabilities take centre stage above the traditional positioning of human capital in a networked world. A networked HRM model, therefore, should focus on building relationships and, more so, team-based effectiveness will dominate the focus. The modern networked world has challenged HRM scholars to rethink the boundaries of a firm and definitions of an employee (Swart & Kinnie, 2014).

Kang and Snell (2009) proposed combining the three social capital dimensions into one social system based on their complementarity in providing the opportunity, motivation, and ability for knowledge exchange. They, therefore, proposed two social capital models, the cooperative and entrepreneurial relational models. The cooperative model was aligned to exploitation and

the entrepreneurial model aligned with exploration (Kang & Snell, 2009). Nahapiet and Ghoshal (1998), however, cautioned that a social capital system or model could be useful for facilitating certain actions but could also be impractical or harmful for others.

Kang and Snell (2009, p. 69) defined the cooperative model of social capital as “a tightly coupled social system that includes strong and dense network connections, generalised or institutional trust based on membership in the social unit, and shared understanding of how knowledge can be combined”, and the entrepreneurial model as “more loosely connected social system characterised by weak and non-redundant relational networks, resilient dyadic trust that is developed through direct personal experiences” (p. 70). The cooperative archetype was mostly associated with exploitation where the entrepreneurial archetype is associated with exploration (Fernández-Pérez de la Lastra et al., 2017; Kang & Snell, 2009; Turner et al., 2015).

Kang and Snell (2009) postulated that ambidextrous learning was derived from intellectual capital architectures that were based on human, social, and organisational capital alignments. The authors identified two distinct architectures as “refined interpolation” and “disciplined extrapolation”. Kang and Snell (2009, p. 65) defined refined interpolation as “an architecture comprised of specialist human capital supplemented by cooperative social capital, and complemented by organic organisational capital,” and disciplined extrapolation “as architecture comprised of generalist human capital, supplemented by entrepreneurial social capital, and complemented by mechanistic organisational capital”. There is a crucial link between human capital and social capital (Fernández-Pérez de la Lastra et al., 2017; Subramaniam & Youndt, 2005; Turner et al., 2015).

Turner et al.'s (2015) findings, however, dispute Kang and Snell's (2009) suggestion of their architectural options that considers interactions between two intellectual capital dimensions. They argue that all IC elements are important for strong operational performance, and postulate that if one is missing, then poorer outcomes must be expected. Chang (2015) argued that the firm's social climate has a way of either emphasising or deemphasising information that determines how employees perceive their leaders, therefore, influencing their response to their leaders. Literature has identified leadership critical in managing ambidexterity and, particularly, in leading for adaptability (Havermans et al., 2015; Rosing, Frese, & Bausch, 2011; Uhl-Bien & Arena, 2018). The following section reviews ambidextrous leadership practices.

2.8 Ambidextrous Leadership

Although there has been extensive ambidexterity research, most of it has been on understanding the development of firm ambidexterity and not so much on the type of leadership that is required to drive a firm's ambidextrous capability (Havermans et al., 2015; Rosing et al., 2011; Uhl-Bien & Arena, 2018). Rosing et al. (2011) highlighted that a single leadership style would be ineffective to support the development of firm ambidextrous capabilities. They, however, posit that a combination of different leadership behaviours applied in harmony to the contextual demands of the firm would be more effective. Rosing et al. (2011) called this type of leadership ambidextrous leadership.

Ambidextrous leaders should be able to support their followers' attempts to be ambidextrous and lead shifts between exploitation and exploration aligned with the complex changes in the environment (Havermans et al., 2015; Rosing et al., 2011). Rosing et al. (2011) observed that ambidexterity leadership theories were aligned to contemporary dynamic ambidexterity constructs. They posited that ambidextrous leaders needed to display behaviours that foster exploration, exploitation, and the flexibility to switch between the two. To foster exploration, the leaders needed to increase variance by displaying what Rosing et al. (2011) referred to as opening behaviours, and to foster exploitation they needed to display the behaviours that support variance reduction or closing behaviours. Some examples of Rosing et al.'s (2011) ambidexterity leadership behaviours are shown in Table 1.

Table 1: Opening and Closing Leader Behaviours

Opening leader behaviors	Closing leader behaviors
♦ Allowing different ways of accomplishing a task ♦ Encouraging experimentation with different ideas ♦ Motivating to take risks ♦ Giving possibilities for independent thinking and acting ♦ Giving room for own ideas ♦ Allowing errors ♦ Encouraging error learning	♦ Monitoring and controlling goal attainment ♦ Establishing routines ♦ Taking corrective action ♦ Controlling adherence to rules ♦ Paying attention to uniform task accomplishment ♦ Sanctioning errors ♦ Sticking to plans

Source: Rosing et al. (2011, p. 967)

The authors, however, observed that it is not the opening and closing behaviours that are critical but the ability of the leader to switch the leadership behaviours in harmony with the contextual requirements of the situation. Rosing et al. (2011) observed that flexible switching between context requirements, leader behaviour and follower behaviour was the essence of ambidextrous leadership. They, however, emphasised that the process of ensuring that the

switching was constantly happening was most critical. The leader's emotional intelligence has also been observed as an important antecedent attribute to the successful ambidextrous leadership (Rosing et al., 2011). Rosing et al. (2011) also postulated that ambidextrous leadership could also be shared between leaders in a team. They mentioned that this, however, required high levels of coordination between the individual leaders. They argued that when sharing leadership, leaders must know when to take the lead and when to step back to let others lead.

Rosing et al. (2011) further highlighted that in a case where there is shared ambidextrous leadership, team attributes might complement leadership behaviour. A high-performance climate will take over the closing behaviours to exploit ideas efficiently since this attribute calls for the group to hold each other to high-performance standards. The group, therefore, will display closing behaviours as they exploit. Behavioural integrated teams' cognitive conflict in allows for more robust debate; therefore, allowing the team to use knowledge alternatives (Uhl-Bien & Arena, 2018). Behavioural integration supports or produces social mechanisms of trust and reciprocity. If not present, collaboration efforts are affected, and a collaborative climate enables adaptability (Uhl-Bien & Arena, 2018).

Another piece of work that resonated with Rosing et al.'s work was that of Havermans et al. (2015). They explored the specific leader behaviours needed for the emergence of ambidextrous capability within teams and how these change over time concerning a dynamic environment. The authors' findings highlighted the leadership practices and dynamics necessary to achieve contextual ambidexterity within the team. Their approach was different because they explored day-to-day leadership behaviours that support dynamic ambidexterity. Havermans et al. (2015) posited that optimal contextual ambidexterity is dynamically achieved by appropriately adjusting the exploitation exploration intensity in response to environmental complexity. High complexity requires higher exploration responses, and lower complexity requires lower complexity exploitation responses.

Similar to Rosing et al.'s (2011) list of closing and opening behaviours (Table 3) that stimulated exploitation or exploration, Havermans et al. (2015) also designed a list of leadership practices that encouraged exploration by increasing variance and exploitation by reducing variance. Some of the variance increasing exploration leader practices identified by Havermans et al. (2015) were stimulating discussion, involving others, encouraging boundary spanning, encourage individual development of others, being available to listen to others and suggesting solutions, increasing the importance of values linked to exploration, namely transparency in interaction, connectedness among individuals, valuing diversity and giving others freedom, encouraging people to work together and accepting mistakes. They also identified the

following variance reducing exploitation leader practices, namely reducing complexity and enabling exploitation, stopping a discussion, not involving others in the conversation, stimulating values related to exploitation, namely wariness, calculated risks, sticking to agreements, other practices, making decisions, enforcing rules, and redirecting effort to fit expectations.

The role of leadership in creating the required social climate that supports dynamic ambidextrous capabilities across the firm levels has not been focused in the multilevel studies by Fernández-Pérez de la Lastra et al. (2017), and Kang and Snell (2009). The studies have instead referred to how HRM systems and social capital could facilitate ambidextrous learning. There, therefore, might be a gap in the mechanisms on how managers could manage and create the requisite social climate that supports the emergence of dynamic capabilities.

2.9 Social Capital Summary

Three social capital dimensions (structural, relational, and cognitive) have been identified in the literature. The structural dimension refers to the connections between individuals. The relational dimension was manifested through terms such as trust and trustworthiness, norms and sanctions, and obligations and expectations. The cognitive dimension manifested through the terms identity and identification, shared representations, interpretations, and systems of meaning among individuals. Scholars acknowledged that the three dimensions of social capital complemented each other towards the emergence of ambidexterity within the firm. The three dimensions of social capital, social interaction, trustworthiness, and shared vision were identified as crucial to the firm's value creation. The relational dimension, in particular, trustworthiness, was found highly related to the structural and cognitive dimensions.

Development in social media has helped to enhance the quality of a firm's social capital by helping organisational efforts in knowledge management, subsequently resulting in a higher quality of organisational knowledge. Structural capital and cognitive capital were directly affected by social media, whereas relational capital was indirectly affected through structural and cognitive capital. Owing to a more networked world, firm HRM models must focus on building relationships and, more so, team-based effectiveness will dominate the focus.

Studies revealed that the firm's social climate had a moderating effect on the effect of firm-level HPWS on the emergence of BU ambidexterity. It was postulated that firm-level HPWS tend to support exploitation activities. To, therefore, enable BU ambidexterity, these HRM systems must be complemented with a supportive firm-level social climate. A strong social climate offered a safe context that enabled skilled employees to execute and exchange

knowledge, whereas a weak social climate negatively affected BU ambidexterity and affected information, and knowledge exchange might have given rise to cognitive dissonance among employees.

Prior research proposed social capital models that supported the development of ambidextrous learning, the cooperative and entrepreneurial relational models. The cooperative model was aligned to exploitation and the entrepreneurial model aligned to exploration. Some scholars, however, cautioned this approach noting that a social capital system or model could be useful for facilitating certain actions but could also be impractical or harmful for others.

Some scholars also disputed the suggested approach of architectural options that considered interactions between two intellectual capital dimensions. They argued that all intellectual capacity elements are important for strong operational performance and postulated that if one is missing, then poorer outcomes must be expected. Scholars argued that the firm's social climate had a way of influencing the information on how employees perceive their leaders; therefore, prompting their response to their leaders. Although there has been extensive ambidexterity research, most of it has been on understanding the development of firm ambidexterity and not so much on the type of leadership that is required to drive a firm's ambidextrous capability.

Scholars posited that a combination of different leadership behaviours applied in harmony to the contextual demands of the firm would be more effective, compared to only using one style. Scholars called this type of leadership ambidextrous leadership. It was observed that ambidexterity leadership theories were aligned with contemporary dynamic ambidexterity constructs. Scholars also posited that ambidextrous leaders must display behaviours that foster exploration, exploitation, and the flexibility to switch between the two. To foster exploration, leaders needed to increase variance by displaying opening behaviours, and to foster exploitation, they needed to display the behaviours that support variance reduction or closing behaviours.

Scholars also postulated that ambidextrous leadership could also be shared between leaders in a team. They, however, mentioned that this required high levels of coordination between the individual leaders. They argued that when sharing leadership, leaders must know when to take the lead and when to step back to let others lead. It was further highlighted that in a case where there is shared ambidextrous leadership, team attributes might complement leadership behaviour, and behavioural integrated teams' cognitive conflict in these teams allows for more robust debate; therefore, allowing the team to use knowledge alternatives. It was noted that

behavioural integration supports social mechanisms of trust and reciprocity, and if not present, collaboration efforts are affected, and a collaborative climate enables adaptability.

Scholars also highlighted that optimal contextual ambidexterity is dynamically achieved by appropriately adjusting the exploitation exploration intensity in response to environmental complexity. High complexity requires higher exploration responses, and lower complexity requires lower complexity exploitation responses. Prior multilevel ambidexterity emergence studies have not focused on how leaders play a part in determining the firm's social climate, instead, they referred to how HRM systems and social capital could facilitate ambidextrous learning. There, therefore, might be a gap in the mechanisms on how managers could manage and create the requisite social climate that supports the emergence of dynamic capabilities.

2.10 Ambidexterity Through Organisational Capital

Fu et al. (2017, p. 333) defined organisational capital as “the institutionalised knowledge embedded in a firm's databases, structures, systems, culture, and processes”. The information and knowledge exchanged through organisational capital infrastructure is usually codified and follows established guidelines or rules (Subramaniam & Youndt, 2005). Kang and Snell (2009) observed that some firms develop rigid detailed routines and procedures while others develop simple and limited guidelines that mainly direct the vision and boundary conditions. These organisational systems have been respectively described in the literature as mechanistic and organic (Kang & Snell, 2009). The former encourages employees to conform to rules, and is mainly associated with exploitation, whereas the latter is more inclined to knowledge creation and responding to the culture and values and, thus, more associated with exploration (Kang & Snell, 2009). Unlike knowledge generated through human capital that could come and go, institutionalised knowledge and organisational capital is embedded in firms and does not change easily (Subramaniam & Youndt, 2005).

Extant literature acknowledged the complex manner in which the various mechanisms through which the knowledge resources are deployed in ambidextrous firms (Kang & Snell, 2009; Subramaniam & Youndt, 2005). Turner et al. (2015) theorised the mechanisms that enabled ambidexterity at project level (Figure 2). Their model identified three mechanisms through which organisational capital in combination with social and human capital enabled ambidexterity. These mechanisms were socialised control mechanism, process customisation, and the integration of all the resources in complex contexts. The socialised control mechanisms were identified as highly relevant to the process, communicating, and sharing and negotiating how project teams worked, and process customisation where project managers customised how they used organisational capital processes and structures.

Scholars, however, are not completely agreeing with Kang and Snell's (2009) mechanistic and organic systems due to their inflexibility to support both exploitative and exploratory orientations (Fernández-Pérez de la Lastra et al., 2017). The authors proposed that firm ambidexterity could be achieved by using organisational capital mechanisms to bring together exploitative and explorative units. They, however, cautioned that organisational capital is normally rigid, and the policies and routines might slow down its response. Fernández-Pérez de la Lastra et al. (2017), therefore, proposed that for their proposed pathway to facilitate the development of firm ambidexterity, a more flexible organisational capital would be necessary. They, therefore, proposed an ambidextrous organisational capital that could facilitate both exploitation and exploration orientations. This study focused on the ambidexterity through a social capital mechanisms pathway and not the organisational capital pathway.

2.11 Human Resources Practices

How work is organised has considerably changed over the last decade. Knowledge-based organisations now not only rely on their knowledge and skills base to perform but also rely on inter-organisational resources (Swart & Kinnie, 2014). Swart and Kinnie (2014), therefore, argued that this cross-boundary working required new HRM models. Methot, Rosado-Solomon and Allen (2018), in agreement, noted the HRM scholars are moving away from human-capital-focused HRM strategies to social-capital-driven HRM strategies owing to the changing new world of work that now demands access to networks of informal relationships inside and outside the firm.

HRM scholars have indicated that bundles of human resources practices are more superior at influencing firm performance compared to single HRM practices (Chang, 2015; Fu et al., 2017). These bundles are mostly a combination of HR practices that are aligned to the firm's strategic objective (Chang, 2015). Jørgensen and Becker (2017), however, argued that while they support the integrated approach that used the synergies of the different HR practices, they encouraged that it was critical to align the HRM practices with team contexts. Jørgensen and Becker (2017) extended the current thinking of using HRM bundles that enabled ambidexterity. They suggested that an approach aimed at a few key highly-aligned HR practices might be more effective in some instances.

There has been much research on HRM practices, and scholars have shown that HPWS were an important antecedent to the emergence of ambidexterity (Chang, 2015; Fu et al., 2017). Fu et al. (2017), however, highlighted that there is still a gap in how to systematically manage human resources for performance. HPWS are a set of strategic HRM practices (Chang, 2015).

HPWS scholars caution that it is not the HR practices that give the firms the competitive edge, but performance comes from HR developed from the system (Chang, 2015).

Using HPWS could increase employee performance. Chang (2015), however, argued that there is a tendency for HPWS to focus on the exploitation of existing knowledge and less on the exploration of new and uncertain knowledge. To ensure BU ambidexterity, HPWS, therefore, should be complemented by a social climate that could create the context of exploration. Chang (2015) highlighted that context characterised by a social climate facilitated knowledge combination and exchange. Social climate, therefore, could create the safety and variety required for ambidextrous learning, and is represented by trust, cooperation, and shared codes and language (Chang, 2015).

BU ambidexterity used to be achieved through generalists who are more adept and motivated to pursue conflicting opportunities. Through HRM efforts that increase employee skills, motivation, and adaptability, specialists, therefore, could also act as generalists in driving BU ambidexterity (Chung, 2015). In agreement, Subramaniam and Youndt (2005) found that firms not focusing on the social skills of human capital might not realise the full potential of the efforts they put into developing them since the knowledge and skills attained will not be efficiently shared. They, therefore, encouraged HRM efforts in hiring, training, and work design to not only focus on the employees' functional skills but also on developing their social skills, including collaborating and sharing information and knowledge.

Kang and Snell (2009) noted that the idea of architecture suggests purposely designed and managed combinations and capabilities. Turner et al. (2015), however, pointed out that organisational learning could also be naturally occurring. Following the notion that these architectures could be designed, Kang and Snell (2009) further identified two human resources configurations (job-based development and skill-based development) to support the earlier highlighted architectures (refined interpolation and disciplined extrapolation). The job/function-based development supports refined interpolation and includes internal labour market-based employee relations and error embracing performance/control systems, whereas the skill-based development supports disciplined extrapolation and includes market-based employee relations and error avoiding performance/control systems (Kang & Snell, 2009).

Kang and Snell's (2009) framework has since been refined by Fernández-Pérez de la Lastra et al. (2017). The authors, through their integrated three-path model, posited that generalist human capital was a traditional source of firm ambidextrous capability. The new perspective is that specialist employees could also be a source of firm ambidextrous capabilities through proper social mechanisms. The contemporary perspective further builds on the argument by

indicating that firms could also adopt and extract value from specialist human capital, and through social mechanisms, build ambidextrous competences at both team and organisational levels.

Fernández-Pérez de la Lastra et al. (2017) also deepened the understanding of a two-way relationship between human capital and social capital. They argue that individuals with higher levels of social skills make social processes and mechanisms easier, and particularly, the cooperative social systems are enhanced by such individuals. Higher-level social skills help to condition ambidexterity at the individual human capital level (Fernández-Pérez de la Lastra et al., 2017). This was in agreement to Subramaniam and Youndt (2005) who advised that together with their efforts at hiring, training, work design, and other HRM activities, firms should also focus on developing their abilities to network, collaborate, and share information and knowledge. Scholars have recognised that social capital was important for an individual's success and performance; therefore, it was important to help assist individuals to develop social capital (Anderson & Sun, 2015). This study responds to Fernández-Pérez de la Lastra et al.'s (2017) call for deeper empirical research that refined their study and focuses on how social capital architectures enable the emergence of BU ambidextrous capability.

Strategic HRM scholars started to categorise HRM practices into dimensions (Chang, 2015; Fu et al., 2017). These dimensions were skill-enhancing, motivation-enhancing, and opportunity-enhancing (Fu et al., 2017). The authors, however, argued that these sets of HR practices affect the employee and organisational outcomes differently. They observed that the skill-enhancing practices influenced human capital more than motivation and opportunity-enhancing practices did; however, motivation and opportunity-enhancing practices influenced employee motivation more. It, therefore, would be critical that firms build high-quality human capital by the development of skill-enhancing practices. It, however, became even more crucial to target the developing of social capital motivation through motivation and opportunity-enhancing practices (Fu et al., 2017).

2.12 Human Resources Summary

The world of work has considerably changed over the last decade. Knowledge-based organisations now not only rely on their knowledge and skills base to perform but are also reliant on inter-organisational resources. There was consequently a move from human-capital-focused HRM strategies to social-capital-driven HRM strategies. The new world of work now demands access to networks of informal relationships inside and outside the firm for individual success and performance.

HRM scholars have indicated that bundles of human resources practices were more superior at influencing firm performance compared to single HRM practices. These bundles were mostly a combination of HR practices that were aligned with the firm's strategic objective. Nonetheless, there was still a gap in how to systematically manage human resources for performance. The literature has identified HPWS as an important antecedent to the emergence of firm ambidextrous capabilities. HPWS are a set of strategic HRM practices. HPWS scholars caution that it is not the HR practices that gave firms the competitive edge, but that performance came from HR developed from the system.

The firm's HPWS context combined with a social climate that facilitated knowledge combination and exchange was best suited for the development of ambidextrous capabilities. Social climate was represented by trust, cooperation, and shared codes and language. BU ambidexterity is achieved by generalists who are more adept and motivated to pursue conflicting opportunities. Through HRM efforts that increase employee skills, motivation, and adaptability, specialists, however, could also act as generalists in driving BU ambidexterity. The integrated three-path model highlighted that generalist human capital was the traditional source of the ambidextrous capability of the firm. The new perspective, however, was that specialist employees could also be a source of firm ambidextrous capabilities through proper social mechanisms. The contemporary perspective further builds on the argument by indicating that firms could also adopt and extract value from specialist human capital, and through social mechanisms, build ambidextrous competences at both team and firm levels.

Higher-level social skills helped to condition ambidexterity at the individual human capital level. It, therefore, was advised that together with their efforts at hiring, training, work design, and other HRM activities, firms should also focus on developing their abilities to network, collaborate, and share information and knowledge. Scholars have recognised that social capital was important for an individual's success and performance. Firms, therefore, should help assist individuals to develop their social capital. Strategic HRM scholars have started to categorise HRM practices into three dimensions, namely skill-enhancing, motivation-enhancing, and opportunity-enhancing dimensions. Scholars also argued that these sets of HR practices affect the employee and organisational outcomes differently. They observed that the skill-enhancing practices influenced human capital more than motivation- and opportunity-enhancing practices; however, motivation- and opportunity-enhancing practices influenced employee motivation more.

2.13 Chapter Conclusion

This chapter reviewed the literature that formed the theoretical base of this study. Organisational capabilities, ambidexterity, ambidexterity based on human resources, ambidexterity through social capital mechanisms, ambidexterity through organisational capital infrastructures, and human resources practices were reviewed. The review of each theme was followed by a summary. The following chapter will cover the study's research questions.

CHAPTER 3: RESEARCH QUESTIONS

3.1 Research Questions

Given the insights into the literature, the research, therefore, aims to explore how social capital architectures enable the emergence of ambidexterity within BUs. The research will aim to answer the following questions:

Research Question 1: How is ambidexterity understood within the BU?

The research question aims to get a deeper understanding of BU managers' perceptions of how they understood ambidexterity. The question is also meant to allow new perspectives and understanding of what ambidexterity means within the study's context. As highlighted in the literature review, the traditional ambidexterity approach was to balance exploitation and exploration; however, this is changing towards a more dynamic approach where the level of exploration or exploitation is driven by firms' attempt to align with its external environment. It, therefore, is important to understand these dynamics within the current context.

Research Question 2: How is ambidexterity manifested within the BU?

The literature review showed that although the benefits of ambidexterity are largely understood, there still remains a lack of understanding of how it is operationalised in firms, in particular, understanding how it is operationalised at the lower levels of the firm (Benner & Tushman, 2015; Kostopoulos et al., 2015; Turner et al., 2015). The question, therefore, aims to get a better understanding of how BU managers perceive ambidexterity and how it is manifested within their unit.

Research Question 3: What are the perceived social capital architectures that prevail within the BU and how do they enable the emergence of BU ambidexterity?

Fernández-Pérez de la Lastra et al. (2017) theorised that specialist human capital could also be a source of firm ambidexterity through social capital mechanisms. This is the second path of their three-path model (Figure 1). They, however, called for future studies to explore deeper how these social mechanisms enable BU ambidexterity emergence based on specialist human capital and through social capital mechanisms. This question, therefore, responds to the call.

CHAPTER 4: RESEARCH METHODOLOGY

This chapter outlines the details of the choice of methodology. The population, sampling method, unit of analysis, and the measurement instrument are outlined, and the data gathering, analysis, and transcription processes that were followed are explained. Ethical considerations and method limitations are also discussed.

4.1 Choice of Methodology

This study responds to Fernández-Pérez de la Lastra et al.'s (2017) call for empirical and deeper refinements to their novel three-path ambidexterity model. This study explores the emergence of BU ambidexterity. The research questions, therefore, probe how ambidexterity is understood and manifested within the BUs, the perceptions on social capital architectures that prevail within the BUs, and how these prevailing social capital architectures enable or constrain the development of the BU ambidextrous capability. This context informed the choice of methodology.

The researcher based the philosophical assumptions on the interpretivist approach. According to Guba and Lincoln (1994), the interpretivist approach allows the researcher to gain an understanding of the subjects by interpreting the subjects' perceptions. This approach allows the researcher to study social phenomena in their natural environment, and the approach was found relevant for business management research in organisational behaviour, marketing, and human resources fields (Saunders & Lewis, 2018). Díaz Andrade (2009) also noted that the interpretivist approach follows that the researcher and participants interact, and the researcher becomes a conduit through which the social reality under study is revealed.

The study followed a qualitative approach. Díaz Andrade (2009, p. 43) defined the qualitative approach as "a study process that investigates a social problem where the researcher conducts the study in a natural setting and builds a whole complex representation by a rich description and explanation as well as careful examination of informants' words and views". Creswell, Hanson, Clark Plano, and Morales (2007) highlighted that there are many qualitative research designs from which to choose and the researcher chose the case study design. The nature of the research questions informed the choice.

Baxter and Jack (2008, p. 545) noted that the case study design could be considered when "the focus of the study is to answer "how" and "why" questions, you cannot manipulate behaviour of those involved in the research, you want to cover contextual conditions and the phenomenon under study or boundaries are not clear between phenomenon and context". Creswell et al. (2007) highlighted that the choice of the type of case study could be informed

by the intent of the case analysis. Creswell et al. (2007) further indicated that there are three variants of case studies, which are based on the intent, namely the single instrumental case study, multiple or collective case study, and the intrinsic case study. This study followed a single instrumental case study approach.

A single case study approach focusses on an issue and then illustrates the issue within a selected bounded case (Creswell et al., 2007). This study focused on the issue of how social capital architectures enable the emergence of BU ambidextrous capability, and this was illustrated within the bounded case of the forestry and engineering BUs.

The inductive research approach was followed. An inductive approach is a “bottom-up approach” to theory development that tries to understand the meanings humans attach to events (Saunders & Lewis, 2018). Data collection was done through semi-structured interviews. In semi-structured interviews, the researcher uses a list of predetermined questions to guide the interview but is not limited to the questions and has the flexibility to explore objectives in more depth by asking more or fewer questions depending on the interview (Saunders & Lewis, 2018). Saunders and Lewis (2018) emphasised that semi-structured interviews are useful when you:

- wish to gather data about a specific topic;
- generate data to enable theory development;
- encourage participants to tell stories from their perspectives; and
- gain insights into individuals’ experiences or life-worlds.

Interview questions were drafted after a preliminary review of existing literature on the main study constructs and were informed by the research questions that needed to be answered. Owing to the limited time available to complete the study, the researcher opted to carry out a cross-sectional study. In a cross-sectional study, data are collected from multiple groups or types of people in one period (Saunders & Lewis, 2018). The alternative longitudinal study method would have been desirable because of its ability to track change over time; however, this method is often impractical to the student researcher owing to time constraints (Saunders & Lewis, 2018).

4.2 Population

The population is the complete set of group members available to the researcher (Saunders & Lewis, 2018). The population for this study was the specialist managers within the engineering and forestry BU, purposefully selected for their involvement in the high levels of

exploration of new knowledge and simultaneous exploitation of existing knowledge, and their reliance on a highly skilled and professional human capital to deliver projects. Fu et al. (2017) argued that specialist engineering or management consulting firms provided an important context for their study since these firms relied on their HPWS-related effects, and embedded in their professional highly qualified employees. Their competitive edge was dependent on their ability to effectively deploy the human, social, and organisational capital to address their clients' needs. Although this study focused on the BU level, purposeful selection of the engineering and forestry BUs for this study was informed by Fu et al.'s (2017) argument.

The purposive sample of individual managers was done based on their specialist education and experience as engineers and forestry specialists. Their managerial level was also considered. Two managers per each of the three managerial levels, junior, middle and senior managers, were selected to balance the sample. At the time of the research, all participants had the minimum tertiary education required to be regarded as an engineer or forestry specialist except participant 11 (Table 1) who was a financial manager and possessed a financial qualification. Owing to participant 11's extensive experience and involvement with forestry operations, he was included in the study. All participants, therefore, were regarded as professional specialists in the engineering and forestry fields. The study is relevant to the forestry and engineering BUs and their understanding of how social capital architectures enable the emergence of BU ambidextrous capabilities.

4.3 Sampling Method and Size

Given that the complete list of the population was unavailable, the study adopted non-probability sampling. According to Saunders and Lewis (2018), non-probability sampling techniques are used to select a sample when the researcher does not have a complete set of the sample. A purposive sampling technique was done for the study. Guest, Bunce, and Johnson (2006) highlighted that purposive samples are the most commonly used form of non-probability sampling. Saunders and Lewis (2018) defined purposive sampling as a "type of non-probability sampling in which the researcher's judgement is used to select the sample members based on a range of possible reasons and premises" (p.145). Guest et al. (2006), in a study that attempted to determine non-probability sample sizes, found that data saturation occurred after 12 interviews and, therefore, recommended that to determine experiences among a group of relatively homogeneous individuals, 12 interviews should suffice.

For this study, data saturation was reached after 10 interviews, as no new information or themes were observed (Guest et al., 2006). Twelve individuals, six from each of the sampled

BUs, were interviewed. Table 1 shows the demographic details of the 12 study participants that were included in the research sample population.

Table 2: Demographic Details of Sampled BU Managers

Respondent	Highest Qualification	Management Level	Business Unit	Years Employed in Case organisation	Designation	Specialist/Generalist
1	B. Eng Industrial Engineering	Snr Management	Engineering	9 years	Industrial Engineer	Specialist
2	B. Eng Mechanical Engineering	Jnr Management	Engineering	10months	Mechanical Engineer	Specialist
3	B.Eng Mechanical Engineering	Jnr Management	Engineering	10 months	Mechanical Engineer	Specialist
4	B.Eng Civil Engineering Hons	Mid Management	Engineering	3years	Civil Engineer	Specialist
5	Masters in Technology Management	Snr Management	Engineering	9 years	Group Engineer	Specialist
6	B.Eng Environmental Engineering Hons	Mid Management	Engineering	5 years	Industrial Engineer	Specialist
7	Bsc Forest engineering	Mid Management	Forestry	3 years	Harvesting Manager	Specialist
8	Msc Forest Science	Jnr Management	Forestry	9 years	Senior Tree Breeder	Specialist
9	Bsc Forest Science	Snr Management	Forestry	3 years	Technical Manager	Specialist
10	Msc Forest Science	Snr Management	Forestry	3 years	Silviculture Manager	Specialist
11	B.com Finance	Mid Management	Forestry	9 years	Financial Manager	Specialist
12	Higher Diploma in Forest Science	Jnr Management	Forestry	4 years	Forest Manager	Specialist

4.4 Unit of Analysis

The sampled BU managers were selected based on their specialist knowledge and their involvement in the exploitation of existing knowledge and exploration of new knowledge within the BU. The unit of analysis was the specialist BU managers' perspectives on how social capital architectures enable the emergence of BU ambidexterity. The BU managers spoke about their experiences within the BU regarding their perceptions on the social capital architectures within their BUs and how they perceived these would enable or constrain the development of BU ambidextrous capabilities.

4.5 Measurement Instrument

The researcher collected data using semi-structured face-to-face interviews. According to Saunders and Lewis (2018), semi-structured interviews are used to either explore what is happening and gain new insights or identify general patterns. The interview guide (Appendix 2) has a list of questions that were used to guide the interview. The questions were informed by the literature and research questions of the study. A time guideline was used to guide the timing of the interviews, and each interview section was given an allocated time. The researcher anticipated that the interviews would be between 40 and 52 minutes, including a

10-minute allowance for closing discussions. Provision was also made at the beginning of the interview for introductions and explanations of the study constructs.

4.6 Data Gathering Process

Data collection was done doing face-to-face semi-structured interviews. Twelve face-to-face interviews were conducted with sampled participants from the forestry and engineering BUs. Before conducting the interviews, the researcher developed a semi-structured interview guide presented in Appendix 2. Care was taken in designing the interview guide to ask questions that answered the research questions and ask probing, specifying, direct, indirect, and interpreting questions, as informed by Saunders and Lewis's (2018) guideline. The interview guide and structure were piloted before interviewing the participants. The pilot interview was done with a senior sales business manager employed by the case firm. The purpose of the pilot was to ensure that the questions would be understood, were not leading, and answered the research questions (Saunders & Lewis, 2018).

Before the interviews, a request for the interview and an explanation of the research's purpose was done via email. The researcher obtained consent to interview the participants through a signed consent form (Appendix 1). The signed forms were handed in together with this report as evidence. The interviews were conducted at a mutually convenient time and place. Interviews were between 35 minutes and 51 minutes long. All interviews were recorded using a smartphone application, Temi. Temi is a professional speech to text transcription application that is downloadable on a smartphone that captures and automatically transcribes conversations. The transcript was synced to the recording and the researcher could review the conversation transcription while simultaneously listening to the audio. The recordings and transcriptions were saved without identifiers to protect the anonymity of the participants and were titled as Respondent 1 to 10. All interviews were automatically transcribed by the professional machine Temi, and the researcher checked and edited the final versions. All the interview recordings, transcripts, consent forms, and field notes were scanned into a digital file on a compact disc and were submitted together with this report.

4.7 Data Analysis Process

Data analysis was done in the ATLAS.ti qualitative analysis software. The researcher chose ATLAS.ti because it is proven software that many scholars have used. The software can handle a variety of large project data files. Qualitative data can either be text or non-text, and the audio recordings or audio parts of video recordings are transcribed and word-processed and then analysed as text (Saunders & Lewis, 2018). The researcher could systematically

analyse the recorded transcripts by coding and grouping these into sub-categories and categories. This assisted the researcher to find meaning in the data and assisted in exploring the data to find answers to the research questions.

All the transcripts were uploaded into a project file created in ATLAS.ti. The researcher opted to use the directed content analysis approach (DCA), where a researcher deductively uses theory about the variables of interest and, from there, develop an initial coding scheme (Hsieh & Shannon, 2005). Transcripts were grouped into document groups. Documents were grouped according to the respondents' BUs and their managerial level. The groups had six managers per BU and two managers represented each level per BU.

Table 3: Respondent Groupings According to BU and Management Level

Document	Document Group 1	Document Group 2
	Business Unit	Management Level
Respondent 1 Interview transcript	Engineering	Snr Manager
Respondent 2 Interview transcript	Engineering	Junior Manager
Respondent 3 Interview transcript	Engineering	Junior Manager
Respondent 4 Interview transcript	Engineering	Middle Manager
Respondent 5 Interview transcript	Engineering	Snr Manager
Respondent 6 Interview transcript	Engineering	Middle Manager
Respondent 7 Interview transcript	Forestry	Middle Manager
Respondent 8 Interview transcript	Forestry	Junior Manager
Respondent 9 Interview transcript	Forestry	Snr Manager
Respondent 10 Interview transcript	Forestry	Snr Manager
Respondent 11 Interview transcript	Forestry	Middle Manager
Respondent 12 Interview transcript	Forestry	Junior Manager

4.8 Transcription Analysis

In qualitative studies, content analysis can either be done inductively or deductively, and both approaches involve three phases of preparation, organisation, and reporting of results (Elo, Kääriäinen, Kanste, Pölkki, Utriainen, & Kyngäs, 2014). The organising phase when analysing inductively involves open coding, creating categories, and abstraction, whereas deductive

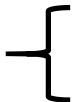
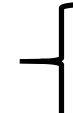
analysing, involves developing a categorisation matrix based on the literature and then the data are coded and analysed centred on this categorisation matrix framework (Elo et al., 2014). Assarroudi, Heshmati Nabavi, Armat, Ebadi, and Vaismoradi, (2018), however, distinguished between a structured and unconstrained categorisation matrix. They highlighted that when using a structured matrix, data are strictly coded from it, whereas an unconstrained matrix allows for inductive development of some codes and categories.

The researcher opted to deductively analyse the data using the DCA approach. The DCA process starts with the researcher going through the literature and identifying key variables and developing an initial coding scheme (Hsieh & Shannon, 2005). The research questions were derived in response to a call by Fernández-Pérez de la Lastra et al. (2017) for empirical research that makes deeper refinements to their three-path ambidexterity model. Although a structured approach was followed, the researcher was not limited to the initial coding scheme but allowed for the development of new codes based on new insights from the participants.

Before starting the content analysis in ATLAS.ti, the researcher consulted existing literature and developed an initial coding scheme shown in appendix 5. In total, 81 codes were initially identified, and preliminary analysis based on the literature review resulted in the development of the initial coding scheme that had 81 codes, five categories and 11 sub-categories. The researcher then defined the categories and sub-categories that emerged during the development of the initial coding scheme. These definitions were based on the literature review (refer to code dictionary in Appendix 4). The researcher then proceeded with the analysis by reading each transcript and highlighting and coding text using the predetermined codes.

After doing the first round of coding on all transcripts, the researcher went back and started to refine and split the quotations from the first transcript and refining the coding scheme. This reduced the number of codes and provided consistency in covering all the transcripts with all potential codes gathered in the first round of coding. Care was taken that text that did not fit the predetermined codes was highlighted and given a new code. The researcher was always questioning themselves during the analysis process if they had missed any important text or were biased to using predetermined codes. This self-questioning technique was done to limit the possibility of researcher bias during the coding process owing to familiarity with the initial coding scheme.

Table 4: Coding Scheme

Category	Sub-Category
Ambidexterity	 1. Team Ambidexterity (ATM) 2. Exploration (AXR) 3. Exploitation (AXT)
Social Capital	 4. Cognitive dimension (SCC) 5. Relational dimension (SCR) 6. Structural dimension (SCS)
Human Resources	 7. Individual development practices (HRI) 8. Employee relations practices (HRR) 9. Team development practices (HRT)
Human Capital	 10. Behaviours (HCB) 11. Personal Attributes (HCP)
Organisational Capital	 12. Organisational design (OCD)

An additional 52 new codes and one sub-category emerged during the transcription analysis process. This brought the total codes at the end of the transcription process to 128 across 12 sub-categories and five themes (Table 4 above). The code list, showing the initial codes and new codes, is shown in Appendix 5. The final code dictionary with category and sub-category definitions is included in the report in Appendix 4. Hsieh and Shannon (2005) argued that the strength of the DCA approach lies in its ability to support or extend existing theory. They further advised that this evidence could be presented using rank-order comparisons of frequencies of codes used. The researcher, therefore, during the final part of the transcription analysis process used rank-order frequencies of the codes and sub-categories to look for trends that could support or extend the existing theory. The researcher also compared the participant frequency of code references for each sub-category of codes between the set-out participant groups. Comparisons between the two BUs and between the management level groups were made. The results of the transcription analysis are presented in Chapter 5.

4.9 Quality Assurance: Reliability and Validity

Reliability and validity concepts in qualitative research ensure the rigour of the research process (Morse, Barrett, Mayan, Olson, & Spiers, 2002). Validity is concerned with the credibility of the research findings and reliability with what issues threaten the credibility of the research design (Saunders & Lewis, 2018). Over time, trustworthiness, however, has often

replaced the reference to reliability and credibility terminology in qualitative studies, and qualitative researchers have often presented trustworthiness by the terms credibility, dependability, conformability, transferability, and authenticity (Elo et al., 2014; Baxter & Jack, 2008).

Baxter and Jack (2008) recommended that researchers who follow the case study design must ensure that enough detail of the research design is provided for readers to assess the credibility of the research. They recommended the following strategies to ensure credibility and validity:

- Triangulation of data sources, types or researchers to view phenomena from multiple perspectives;
- Researcher to get multiple perspectives of the phenomena and the context under study by prolonged or intense exposure in the context;
- Member-checking by sharing data with participants and getting feedback from the researcher's interpretations;
- Using field notes or peer examination of data; and
- During analysis, using double coding or multiple researchers independently coding and comparing results.

The researcher did not have enough time to use multiple data sources to ensure full triangulation of the research design. Partial triangulation, however, was done by consulting with the researcher's GIBS-appointed research supervisor, Richard Meissner, and getting a different perspective on the data. All the interviews were done at the worksites of the participants, and the researcher could become immersed in the environment and, on average, spend between 35 minutes and 51 minutes per interview. The researcher could make rich observations of the environment and kept field notes of this. Both the field notes and the audio files were submitted with this project as evidence.

During the transcription analysis phase, the researcher went through two rounds of coding all the transcripts and compared and refined the coding scheme in the process. Using the deductive analysis approach helped to enhance research credibility that the research constructs explored were still measuring the intended phenomena. Sub-categories and categories were defined using credible literature references. The transcription of the audio files was done by Temi, an independent automatic translation machine to improve the reliability and consistency of the transcription process.

4.10 Ethics

Ethical clearance was granted by the GIBS MBA research ethics committee on 17 July 2019, and the letter is included in Appendix 3. Data collection only commenced after the approval was granted, and throughout the research process, the GIBS MBA ethics guidelines were adhered to at all times.

4.11 Limitations

Qualitative studies and, in particular, case study designs are acknowledged for their ability to enable researchers to gain a deeper understanding of complex social activities taking place in a specific context (Saunders & Lewis, 2018). The approach, however, has its limitations. Some of the limitations of the qualitative approach and case study design are as follows:

- The findings are only limited to the s forestry and engineering BUs being studied and might not be generalised outside this context and to other industries. Zainal (2007) highlighted that single, case exploration makes it difficult to generalise findings and conclusions outside this context.
- Qualitative research might be prone to the bias of the researcher in selecting the sample and data interpretation. Zainal (2007) also noted that the case study approach might be open to the researcher's bias in the interpretation of data.
- The directed analysis approach has the downside of the researcher having a bias on the theory and miss contextual aspects of the issue being investigated (Hsieh & Shannon, 2005).
- Using probing questions in the semi-structured interview guide might sway participants into answering the question based on the clue given (Hsieh & Shannon, 2005).
- The cross-sectional nature of the study has a downside of not being able to track the changes of the issues studied over time.

4.12 Case Context

The case firm was a mature vertically integrated forestry organisation that was listed on the JSE and is based in South Africa. The forestry industry in South Africa faced numerous challenges at the time of the study that made the operating environment quite complex and unpredictable. Macroeconomic uncertainties, land expropriation, union rivalry and industrial relations, and climate change were some of the issues that complicated the operating environment. The 's forestry and engineering BUs were identified as suitable and offered an

appropriate case context for the study since they were involved in high levels of exploiting existing knowledge and exploring new knowledge.

The BUs management were highly qualified professionals who were regarded as specialists in the engineering and forestry science fields (refer to Table 1 for the demographic details of the study participants). Refer to Section 4.2 for the motivation for the decision to include the two BUs in the study. Baxter and Jack (2008) encouraged that case researchers should bind their case either by time and place, time and activity, or by definition and context. The forestry BU was mandated to nurturing and growing the plantations and extracting optimal value from them by providing raw materials for further processing at the processing plants. The engineering department, on the other hand, was mandated to improve plant efficiencies, upgrade outdated technologies, and improve throughput and maximum utilisation of technology and efficiency upgrades.

CHAPTER 5: RESULTS

5.1 Introduction

This chapter presents the research findings obtained from interviewing 12 sampled specialist managers from the forestry and engineering BUs. Six managers from each BU were interviewed. The demographic details of the interviewed managers are presented in Table 1 (Chapter 4). Each interview with the specialist managers lasted between 35 minutes and 51 minutes using a semi-structured interview guide to direct the process (see Appendix 2). The interview questions were structured to guide the interview towards getting more in-depth insights into the themes under investigation. This research aimed to gain a deeper understanding of how ambidexterity was achieved within the BUs and the role of social capital architectures in enabling the emergence of ambidextrous capability. The findings of the research are reported in this section. The outputs from the transcription and coding process are presented, as explained in Section 4.8.

5.2 Pre-analysis Descriptive Results

An overview of the demographics of the interviewed managers (Chapter 4, Table 1) showed that all managers who participated were specialists in their fields. Their education, work experience and current job profiles were used as grounds for including the individuals in the sample. All respondents had between three and nine years working in the firm, except two junior managers, respondents 3 and 2, who both had only been with the firm for ten months. Both BUs were selected for study because they were involved in high levels of exploitation and exploration activities. Interviewees also concurred that their BUs were doing both exploring and exploiting.

Interviewee responses on the purpose and function of their BUs

Respondent 1: *“And we do projects at the various business units. So, it’s from the inception of projects. So, it will be from the feasibility studies that needs to be done at the various business units for projects. And certain projects are not feasible, so, then that process ends, or other projects are feasible. And we continue with executing the projects and competing the projects.”*

Respondent 8: *“So, the role of forestry is quite broad. I mean, if we start where I am in, in research or tree breeding, we are responsible for developing the genotypes of the germ plasm and the species actually going into the plantations, making sure there’s first of all enough and making sure that it’s enough of the right species. and also, that there is enough*

research going on behind the commercial aspect of that to make sure that we are sustainable in the long run, with challenges like climate change and pest and disease (..)."

The sample included respondents who were selected with the representation of junior, middle and senior managers within the BUs. The sample included two managers from each level for each BU. Results, therefore, are presented to also show insights from the different groups that were split up by BU and management level.

The presented results are from the coding and analysis process of 12 transcript documents in ATLAS.ti. The document analysis was also done across the five, document groups, i.e. documents grouped according to BU and management level of respondents. Table 5 shows the ensuing code and sub-category scheme. Codes were generated for each document and compared across the different code sub-categories and document groups. In total 128 codes ensued from the coding process. These codes were grouped into 13 sub-categories and further grouped into five main categories (Table 1).

Table 5: Code Category and Sub-category Scheme

Category	Sub-Category
Ambidexterity	1. Team Ambidexterity (ATM) 2. Exploration (AXR) 3. Exploitation (AXT)
Social Capital	4. Cognitive dimension (SCC) 5. Relational dimension (SCR) 6. Structural dimension (SCS)
Human Resources	7. Individual development practices (HRI) 8. Employee relations practices (HRR) 9. Team development practices (HRT)
Human Capital	10. Behaviours (HCB) 11. Personal Attributes (HCP)
Organisational Capital	12. Organisational design (OCD)

The results are presented for each category. Selected quotations illustrate the interviewees' insights. Given the numerous quotations available, only selected quotations are presented in this section. Table 6 and Table 7 show the comparative code-rank frequencies of the references per sub-category made by respondents for the BU and managerial level groups, respectively. The data also show the overall code references and number of respondents who referenced each of the 13 sub-categories. Further analysis for each sub-category was then

done following this summary overview. Cross-tables showing the frequency codes were referenced for each sub-category analysis. The cross-tables were used to illustrate the main trends for each category that emerged from the analysis. The reported results presented in this section refer to the tables and quotations that are included in the document and those in the appendix section. Appendix 6 has tables (1-6) that summarise the detailed comparative cross-tables for the code frequencies referenced for the analysed categories. A summary of the results for each category was given at the end of each section.

An overall analysis of the trends shown in both Table 6 and 7 show that all 12 respondents referred to eight sub-category groups and these sub-groups represented all five categories. The sub-categories referenced by all respondents sampled were the social capital structural dimension, personal attributes, social capital relational dimension, team development practices, exploration, team ambidexterity, organisational design, and exploitation. It, however, would appear that human capital together with the structural and relational social capital dimensions had the highest sub-category references. This might suggest that respondents perceived social capital and human capital categories to be highly relevant in their context. Further analysis of the trends for each category will be done in the next sections. Reference will be made to Table 6 and 7 for the comparative analysis per BU and managerial level groups.

Table 6: BU Comparative Group Summary of the Sub-categories References Code-rank Frequencies

Sub Category	Engineering Group number of sub category references	Forestry Group number of sub category references	Total number of sub category references	Total Number of respondents who referenced sub category	Percentage of total sub category references
Social capital structural dimension	78	75	153	12	19%
Personal Attributes	82	62	144	12	18%
Social capital relational dimension	72	68	140	12	18%
Team development practices	33	42	75	12	10%
Exploration	29	31	60	12	8%
Team ambidexterity	32	28	60	12	8%
Organisational design	33	25	58	12	7%
Exploitation	34	18	52	12	6%
Social capital cognitive dimension	18	10	28	9	3%
Behaviours	14	6	20	7	2%
Employee relations practices	3	2	5	4	1%
Individual development practices	4	0	4	4	0%

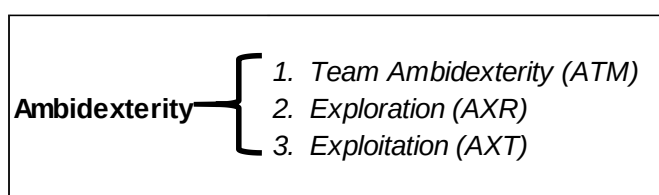
**Table 7: Managerial Level Comparative Group Summary of the Sub-categories
References Code-rank Frequencies**

Sub Category	Junior Manager Group number of sub category references	Middle Manager Group number of sub category references	Snr Manager Group number of sub category references	Total number of sub category references	Total Number of respondents who referenced sub category	Percentage of total sub category references
Social capital structural dimension	65	42	46	153	12	19%
Personal Attributes	47	43	54	144	12	18%
Social capital relational dimension	38	39	63	140	12	18%
Team development practices	23	16	36	75	12	10%
Exploration	18	23	19	60	12	8%
Team ambidexterity	17	15	28	60	12	8%
Organisational design	22	22	14	58	12	7%
Exploitation	12	21	19	52	12	6%
Social capital cognitive dimension	4	9	15	28	9	3%
Behaviours	1	6	13	20	7	2%
Employee relations practices	2	1	2	5	4	1%
Individual development practices	2	1	1	4	4	0%

5.3 Ambidexterity Category

Interview questions probed interviewees of their understanding and experiences of how ambidexterity is manifested within their BUs. At the beginning of every interview, the researcher spent a few minutes defining the ambidexterity construct (see Appendix 2). This was done to remind the interviewees of the ambidexterity construct and terminology normally used. The results indicate that the respondents experienced and understood ambidexterity to manifest within their BUs through varying mechanisms that included exploitation, exploration, and a combination of the two (ambidexterity). Table 8 illustrates the three sub-categories that emerged from the responses obtained from the respondents' understanding of the ambidexterity construct.

Table 8: Ambidexterity Code Category Structure



5.3.1 Ambidexterity overview by management level

It would appear, as shown in Table 9, that all respondents referred to all the sub-categories in the ambidexterity category. This, however, might suggest that the BUs were engaged in both exploitation and exploration activities. The data do not appear to show any large differences in the code references between the different managerial level groups.

Table 9: BU Comparative Group Summary Ambidexterity Sub-category Code References

Ambidexterity Sub Category	Junior Manager Group number of sub category references	Middle Manager Group number of sub category references	Snr Manager Group number of sub category references	Total number of sub category references	Total Number of respondents who referenced sub category	Percentage of total sub category references
Exploration	18	23	19	60	12	8%
Team ambidexterity	17	15	28	60	12	8%
Exploitation	12	21	19	52	12	6%

5.3.2 Ambidexterity overview by business unit

Table 10 also shows that both BUs were engaged in both exploitation and exploration activities. The forestry and engineering BUs have similar levels of code references, 29 and 31 for engineering and forestry, respectively. It, therefore, appears that the BU managers reported equally high levels of exploration activities. It, however, appears as if the engineering BU reported to be engaged in higher levels of exploitation compared to forestry, as reflected by the lower exploitation code references of 18 in forestry compared to 34 in engineering. Table 10 further shows that respondents reported equally high levels of concurrently engaging in both exploitation and exploration activities (team ambidexterity).

Table 10: Managerial Levels Comparative Group Summary Ambidexterity Sub-category Code References

Ambidexterity Sub Category	Engineering Group number of sub category references	Forestry Group number of sub category references	Total number of sub category references	Total Number of respondents who referenced sub category	Percentage of total sub category references
Exploration	29	31	60	12	8%
Team ambidexterity	32	28	60	12	8%
Exploitation	34	18	52	12	6%

Respondent 5's comment below demonstrates that there might be a dynamic approach with the BUs towards the levels of exploration or exploiting, and the focus changes in response to expectations or team composition and according to the nature of projects undertaken. Respondents 5 and 12 expressed that individuals within their BUs were more likely to adopt a dynamic approach based on external circumstances. Their responses seem to highlight dynamic contextual ambidexterity. Respondent 8, on the other hand, highlighted a more separated focus on exploiting and exploring, with the latter being mostly outsourced to external consultants with an internal focus on exploitation. This, most likely, points towards a structural ambidexterity approach. Respondents 4 and 3's quotations below express somewhat more focus on exploitation activities.

Interviewee responses on their understanding of ambidexterity in their BU

Respondent 5: *"It's again, it's an interesting dynamic in my team, because we don't always have day-to-day measurables so, and I think that culture or the ethos in my team changes, my team actually changes as the expectations and the team composition or position changes and the projects that we do."*

Respondent 8: *"So, I think if it was only focused within our company, then we'd be only exploiting. The consultants bring a bit more of that exploring part of it."*

Respondent 12: *"You are still expected to look at what is currently happening, put your full effort for the benefit of the business and it's also your dual responsibility to look at what is going to happen in the future."*

Respondent 3: *"So it's just in various aspects within the plant and the, the human capital as well as artisans doing the work. So, making sure the job is getting done, making sure the maintenance plans is according to standards, making sure machines experience less downtime as possible. So, that's my role."*

Respondent 5: *“So, it depends a bit on the economic situation of the company and in investment curve. So, at this stage we focus more on efficiency improvements. So, we are more focused on exploiting the current knowledge to get small improvements and while we are looking at big opportunities.”*

Respondent 4: *“Let’s say there’s a problem and we need to make a plan. We don’t have time. That’s, that’s usually not the most effective ways to communicate. But it’s almost survival mode. We’re in trouble. We have to make a plan.”*

A more detailed analysis of the frequency of the ambidexterity code references revealed finer detail on how the interviewees responded to the question of how ambidexterity is understood and manifested within their BUs. Table 1 in Appendix 6 shows the rank frequencies for ambidexterity category code references. The data show that most respondents referenced contextual ambidexterity (11), searching and experimentation (10), improvement (10), paradox challenges (8), external ideas and resources (7), efficiency (7), and production (6) codes. The data trend also shows that respondents from both BU groups had a similar amount of quotation references for the short-term improvement to existing methods codes (forestry 9 and engineering 15), and long-term searching and experimentation codes (forestry 11 and engineering 11). This suggests that both BUs were engaged in both exploration and exploitation activities. The data, therefore, also appear to support the observed trend that most respondents referenced the contextual ambidexterity code. This might suggest that most respondents perceived contextual ambidexterity as the main form of how ambidexterity manifested within their BUs. The data, however, also show a higher number of references for the contextual ambidexterity code for forestry compared to their engineering counterparts, code references of 20 versus 10, respectively.

Respondents 1 and 9’s quotations below illustrate how both BUs engage in exploitation activities, and the quotations for respondents 4, 5, and 13 below illustrate how the same BUs are also engaged in exploring activities.

Respondent 1: *“So, there was a period where we at a difficulty at plywood with the production in general and our whole team spent days on the production floor trying to look at new ways or innovative ways to do things differently or to improve the production in the plywood plant.”*

Respondent 9: *“On the exploitation side, my understanding is that is keeping the business going day-to-day. That is in our context, the forestry department has to make sure that there is enough raw material, every day for the sawmills. if that timber is not available or*

what the sawmills required, if that's not available from, our own plantations, then we need to outsource it to, we need to buy it in."

Respondent 4: *"So, a lot of my time now goes into focusing on how, can we develop timber and how can we get more out of wood? Yes, yes. So, what we are currently trying to, to investigate is where is our shortfalls in South Africa with regards to timber, what are we doing right, what do we doing wrong? And we should we try to catch up to our competitors."*

Respondent 5: *"If we can pull off that project, the market is, is quite significant in size. So again, that will lead to a big jump in innovation in case firm."*

Respondent 11: *"I think forestry with all the research and development that they are doing will actually ground or root the company for future developments because you looking into the future to see how you can take wood and apply it in an industrial environment and the research is done today to do that tomorrow."*

Table 1, Appendix 6 also shows more references to the AXT-improvement (exploitation) codes by the engineering BU respondents (15) compared to forestry (9). Table 1, Appendix 6 also shows that engineering respondents referenced more quotations for the paradox challenges code than their forestry counterparts, 17 and 2, respectively. Most of the respondents, irrespective of the BU, however, highlighted that short-term exploitation activities, i.e. production and saving costs, were receiving more attention at the time of the interviews compared to the exploration activities. Refer to respondents 1, 3, 4, and 5's quotations below.

5.3.3 Interviewee responses on paradox challenges

Respondent 1: *"It's very important to juggle it but it is difficult because you need these individuals that are busy in the day-to-day running of the business like I said, to make a success of your project. But they are breakdowns for example, in the plant and they are strikes and they are various issues that means that these people are not readily available."*

Respondent 5: *"And that started a conflict we have in my team is because there was expectation of us to deliver on short-term aspects, but we all knew that this big project was coming and we didn't have, we struggled to have enough time to do the necessary preparation."*

Respondent 3: *"So, I'm trying to just the few things regarding that, but the biggest challenge at the moment is just time cause you don't always have time to explore this stuff."*

Respondent 12: *“Then just to align my role in there. As a manager, you need to manage the current situation with the current market environment needs of the business. And when you do that, you, you need to be able to manage what it's happening now. But the drive these days in business is to, is to run your business at low cost as possible.”*

Data in Table 1, Appendix 6 further show that although only three respondents referenced the code AXT focus on exploitation in response to the tough macroeconomic environment code, it appears as if the references mostly were made by the engineering respondents (5 code references) compared to forestry (1 code reference). Only the engineering BU respondents referenced the codes ATM pressing short-term exploitation needs take precedence over long-term exploration activities and AXT speed of execution many incremental improvements respondents with 2 and 3 code references respectively. It, therefore, appears that the codes referenced were all highlighting that engineering respondents identified more with the required responses to the tough macroeconomic environment that prevailed at the time of the study by focusing more on exploitation activities.

Respondents 1 and 5 seem to suggest that cost-cutting was a priority during tough economic times, but Respondent 1, however, appears to have a different opinion on the appropriateness of this default response of extensive cost-cutting activity during tough economic times.

Respondent 5: *“So, it just so happened that my team and case firm is in a current situation, in the same kind of situation we need to survive today so that we can fight tomorrow. And that's why I think we focus more on today.”*

Respondent 1: *“So, I, I think that's important and it's sometimes, especially if a company is going through difficulties, like we are at the moment that's one of the first things that are stopped. It's unfortunate because it doesn't have to be a big thing that costs a lot of money.”*

Table 1, Appendix 6 further shows the trend that BUs tapped into external ideas and resources (15 code references) compared to internal ideas and resources (4 code references). It, however, appears that the forestry BU had higher code references (12) compared to engineering (3) on using external ideas and resources. Quotations by engineering Respondent 4 and forestry respondents 7, 8, and 9 below show how the respondents used their external resources.

Respondent 4: *“So, I won't say I'm, not experienced in earthworks, but there was a few challenges and I told our group engineer I think we should investigate this and I think we should source some external knowledge. And the decision was all was immediately made,*

and we went out, we find, found a few additional resources a few engineers that actually helped us with again with educated decisions.”

Respondent 7: *“Bouncing off ideas with fellow colleagues from different companies also makes a big part of our approach.”*

Respondent 8: *“It’s still going to take time. I mean it’s we, the university is learning with us and vice versa. We are contributing genetic material to them so that they can do the research. They do the research and give us the feedback.”*

Respondent 9: *“And then apart from, from this panel of expertise, uh, there is also wide affiliation to different industry research institutions, academic institutions, all the different universities. So, there is academic and research institutions, which are readily available in anybody in Case firm, uh, can, contact anybody there, and it’s, it’s information that’s available.”*

5.4 Ambidexterity Category Summary

It would appear that both BUs were engaged in high levels of exploiting and exploring; however, it is the balance between the two that seems to shift. Respondents highlighted a combination of individual contextual ambidexterity and structural ambidexterity within their BUs. It, however, appears that individual contextual ambidexterity is the common form to be found in the BUs. Changes in the external environment seem to considerably influence how individuals adapt, and that appeared to be either by doing more or less of exploring or exploiting. There, therefore, might be a dynamic approach within the BUs towards the levels of exploration or exploiting, and the focus changed in response to expectations or team composition and according to the nature of projects undertaken.

Individuals within the engineering BU seemed to exploit more than their forestry counterparts, at the time of the interviews. This could be due to the pressurised production environment that the BU supported, and these external pressures were seemingly high at the time of the interviews, given the tough macroeconomic environment prevailing at the time. This could be due to the production-focused context in which the engineering BU operates.

In contrast, the forestry BU referenced a higher level of using external ideas and resources. The forestry BU was also structured to facilitate individuals that were exploiting more and others that were exploring more, and some exploration was also outsourced to consultants. This showed a dynamic and varied response to the external environment changes and requirements.

Individuals in both BUs responded to the tough macroeconomic environment by focusing more on the short-term exploitation activities and less on the exploration activities. Although this was the default response, not all were convinced it was the most suitable response under all circumstances. Respondent 1 was particularly not convinced. Attaining ambidexterity seemed to be a challenge and the engineering BU respondents identified more with this paradox. It could be related to their environment that demanded immediate pressing short-term results while they simultaneously worked on longer-term exploration projects. Prioritising in that context seemed to be challenging. Both BUs appeared to be challenged by the paradox but the extent differed.

5.5 Human Capital

The human capital category was subdivided into two sub-categories, behaviours and personal attributes (Table 11). Data shown in Appendix 5 show that 37 codes were referenced for this category. What, however, is notable, is that this category has the highest number of new codes that emanated inductively during the transcription process. In total, 30 new codes emanated. The researcher, however, cautions reading too much into this finding since it is possible that the researcher might not have covered all the literature to capture some of these codes deductively. This due to the vastness of the ambidexterity literature and might be a limitation of the deductive approach. This, however, might show the importance of certain human capital characteristics that were perceived as important within the context of the study that might not have been considered fully in prior studies. This category emanated from the responses given by the interviewees on their perceptions to questions related to how they understood ambidexterity to be manifested in their BUs.

Table 11: Human Capital Code Category Structure

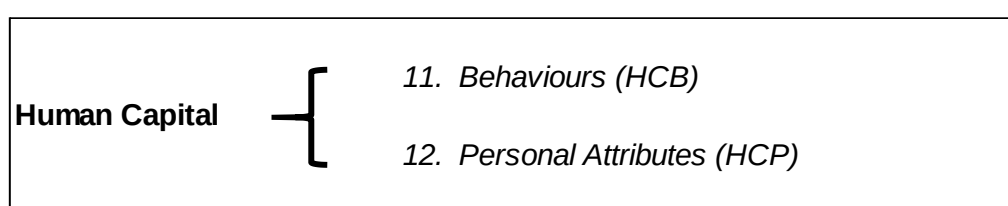


Table 12 illustrates the frequency of quotations referenced for codes related to each sub-category and the managerial level of the respondents. Most of the respondents referenced the personal attributes sub-category compared to the behaviour category, 144 and 20, respectively. Notably, it appears from the data that quotation frequencies were similar across respondent managerial levels. Results will be presented using data found in Table 2 (Appendix 6), and the relevant quotations will be referenced in the text.

Table 12: Managerial Levels Comparative Group Summary Human Capital Sub-category Code References

Human Capital Sub Category	Junior Manager Group number of sub category references	Middle Manager Group number of sub category references	Snr Manager Group number of sub category references	Total number of sub category references	Total Number of respondents who referenced sub category	Percentage of total sub category references
Personal Attributes	47	43	54	144	12	18%
Behaviours	1	6	13	20	7	2%

The engineering BU respondents had higher quotation frequencies for personal attribute codes than the forestry BU respondents, 82 and 62, respectively (Table 13). Respondents from both BUs, however, referenced mostly the personal attribute codes compared to behaviour codes.

Table 13: Business Unit Comparative Group Human Capital Summary Sub-category Code References

Human Capital Sub Category	Engineering Group number of sub category references	Forestry Group number of sub category references	Total number of sub category references	Total Number of respondents who referenced sub category	Percentage of total sub category references
Personal Attributes	82	62	144	12	18%
Behaviours	14	6	20	7	2%

Table 2, Appendix 6 shows the frequency of quotation references for the human capital sub-categories' codes. Most respondents referenced and perceived the following personal attributes, codes specialist (12), education (11), narrow experience (10), skills (10), communication skills (7), people skills (6), innovative (5), project management skills (5), and willingness to learn (5) as the most important attributes that supported the development of ambidextrous BU capabilities. There was not much difference in the number of code references between the two BUs for personal attribute codes highlighted as the most referenced. Although fewer respondents referred to the behavioural codes, most respondents, however, referenced introverted specialist (3), knowledge sharing (3), and problem-solving (3) behaviours. It would appear that the education, narrow experience, and specialist skills all were driven by the sample selection criteria, as described in Chapter 4.3. All the sampled managers were specialist in their fields and had narrow experience specialising in the specific field and had received specialist education (Table 2, Chapter 4). Respondents referenced the

introverted specialist behaviour code. Respondents 1 and 5 in the quotations below perceived that specialists, in particular engineers, are mostly focused on problem-solving and are not necessarily equipped to deal with relational issues.

Respondent 1: *“So, it’s, it’s not difficult for me, but I know for some of my colleagues it is challenging because they are already thinking about a million different things in their heads and they are sort of closed into their own worlds. So, you know, I think it’s an effort for some of us. But for me it’s okay. I think it’s very important. I think it comes back exactly to that issue of respect.”*

Respondent 5: *“So, getting that balance right for engineers specifically I think is difficult because we are in general more focused on the technical solution. We are not relationship-driven.”*

Although only four quotations were referenced for the knowledge-sharing code, it might be important to note that of the four quotations, three were referenced by the engineering respondents (Table 2, Appendix 6). The same can be observed for the project management code references. Engineering respondents had more references compared to forestry, 4 and 1, respectively. Respondent 2 highlights their responses on knowledge sharing in the quotation below.

Respondent 2: *“So, I try to give inputs of what I see going on in the production side. There’s obviously a lot of people working on-site and nobody uses the machine the same way.”*

In addition to codes that described the sampled manager’s characteristics, people skills, communication skills, skills, integrity, and team player codes had higher quotation frequencies (Table 2, Appendix 6). Respondents 12 and 7 in the quotations below expressed their perceptions on the importance of individuals within the BU to possess good communication skills. People skills were also perceived as an important attribute to possess. Respondent 5 highlighted this in the quotation below. Possession of a skill set was also perceived as an important attribute, as per Respondent 3 quotation.

Respondent 12: *“It should be somebody who can talk across all boundaries. It should be somebody who can, who can talk to anyone.”*

Respondent 7: *“Clear communications is the best starting point. So, a person that can communicate well enough and bring these ideas and his opinions across and within the team and then teamwork in itself.”*

Respondent 5: *“But the important thing that I’ve realised and it’s something that I will probably learn for the rest of my life is banking on only being a good technical solution is also not good enough. You have to have a good relationship with and solution.”*

Respondent 5: *“You, I need a skilled person, I can’t teach a guy we don’t have time for that. So, so that’s a very big, important thing to have or attribute.”*

Respondents also referenced attributes such as team player (Respondent 1), willingness to learn (Respondent 8), crucial conversation (Respondent 5), integrity (Respondent 9), and innovative (Respondent 6) in the quotations below as important personal attributes.

Respondent 1: *“I’m going to have to dig deep for the right words. You have to be a team player. I think that is the most important thing.”*

Respondent 8: *“Out-of-the-box thinking someone that’s not set in their ways, asking questions, curious.”*

Respondent 5: *“...she has just as that ability to turn the tempers into a way that she makes sure that everybody understands, okay, we’re not yet to talk about the fact that you’re upset. We’re here to talk about we need to solve the problem.”*

Respondent 9: *“I can just refer to the, Case firm core values, the core values, things like integrity and responsibility and commitment.”*

Respondent 6: *“I think innovation is so thinking about things out of the box, especially in sawmilling because it’s niche business. There’s not a lot of things that are standard.”*

5.6 Human Capital Summary

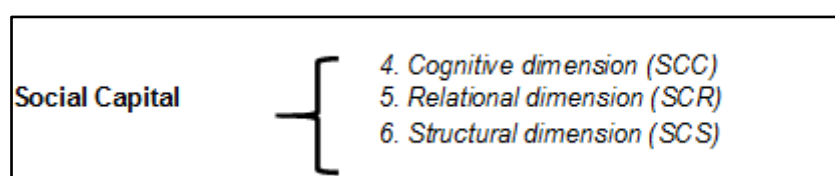
Respondents from both BUs referenced mostly the personal attribute codes compared to behaviour codes. Notably, the most referenced personal attributes codes were specialist, education, narrow experience, skills, communication skills, people skills, innovative, project management skills, and willingness to learn, and introverted specialist, knowledge sharing, and problem-solving were the most referenced behavioural codes. It, however, would appear that the attributes education, narrow experience and specialist skills all part of the criteria used to select the sample. Respondents referenced the introverted specialist behaviour code. Respondents perceived that specialists, in particular engineers, are mostly focused on problem-solving and are not necessarily equipped to deal with relational issues. Respondents expressed their perceptions of the importance for individuals in the BU to possess good communication skills. People skills were also perceived as an important attribute. Possession

of a skill set was also perceived as an important attribute. Respondents also referenced team player, willingness to learn, crucial conversation, integrity, and innovative codes.

5.7 Social Capital Category

The social capital category has four sub-categories, as shown in Table 14, and a total of 47 codes. Table 14 below shows the social capital sub-category dimensions that emerged from the interview data, namely cognitive, relational, and structural dimensions. The code reference frequency detail is presented in Appendix 6, Table 3. The results are presented referring Tables 15 and 16 below and Tables 3 and 4 in Appendix 6. The relevant quotations captured from the interviews are also included in the results presented.

Table 14: Social Capital Code Category Structure



The data in Table 15 show that the structural (153) and relational dimensions (140) sub-categories were referenced the most by the respondents compared to the cognitive dimension (28) category. It appears that irrespective of the respondents' management level (Table 15) or to which BU they belong (Table 16), respondents identified more with the social and relational dimensions, and to a lesser extent, the cognitive dimension.

Table 15: Managerial Levels Comparative Group Summary Social Capital Sub-category Code References

Social Capital Sub Category	Junior Manager Group number of sub category references	Middle Manager Group number of sub category references	Snr Manager Group number of sub category references	Total number of sub category references	Total Number of respondents who referenced sub category	Percentage of total sub category references
Social capital structural dimension	65	42	46	153	12	19%
Social capital relational dimension	38	39	63	140	12	18%
Social capital cognitive dimension	4	9	15	28	9	3%

It, however, seems in Table 15 that senior managers referenced the relational dimension more than the other managers. It is also notable that the junior managers referenced the structural capital dimension more than the other managers.

Table 16 below shows that there was not much difference in the references made by respondents from both BUs for the social capital sub-categories. Respondents from the two BUs, however, referenced the structural and relational dimensions more compared to the cognitive dimension that had lower referenced quotations.

Table 16: BU Comparative Group Summary Human Capital Sub-category Code References

Social Capital Sub Category	Engineering Group number of sub category references	Forestry Group number of sub category references	Total number of sub category references	Total Number of respondents who referenced sub category	Percentage of total sub category references
Social capital structural dimension	78	75	153	12	19%
Social capital relational dimension	72	68	140	12	18%
Social capital cognitive dimension	18	10	28	9	3%

5.7.1 Structural dimension

Table 17 shows the number of quotations referenced for the social capital structural dimension codes. The data shows that respondents referenced the following codes most: how do you reach them (11), internal networks (11), enablers of team ambidexterity (10), knowledge networks (10), strong network connections (7), and using tools for effective communication and decision making (6). It appears as if there is no difference in the frequency of quotations referenced between the BUs for these most referenced codes. This could suggest that irrespective of the BU to which they belonged, the respondents shared similar sentiments on these codes. The code of how you reach them had the most quotations referenced (33). This code referred to the means the respondents used to communicate.

Table 17: BU Comparative Group Summary Social Capital Relational Dimension Code References

Social Capital - Structural dimension codes	Engineering number of code references	Forestry number of code references	Total number of references per code	Number of respondents who referenced code
● SCS – How do you reach them	16	17	33	11
● SCS – Internal networks	8	7	15	11
● SCS – Enablers of team ambidexterity	8	9	17	10
● SCS – Knowledge networks	13	9	22	10
● SCS – Strong network connections	8	10	18	7
● SCS – Using tools for effective communication and decision making	7	6	13	6
● SCS – Informal communication WhatsApp, short phone call	4	4	8	4
● SCS – Global networks	1	4	5	4

Social Capital - Structural dimension codes	Engineering number of code references	Forestry number of code references	Total number of references per code	Number of respondents who referenced code
● SCS – flat structure with some organised hierarchy	0	4	4	3
● SCS – Network configuration	2	1	3	3
● SCS – Structural barriers to collaboration	6	0	6	3
● SCS – Who do you reach	1	2	3	3
● SCS – Formal communication written, email	4	0	4	2
● SCS – Network ties	0	2	2	2

Respondent 1 and 8 highlighted, in the quotations below, that over and above formally scheduled meetings, they saw the value of informal social engagements towards the building of relationships. Respondents 2, 4, and 6 seem to emphasise the importance of verbal communication either face-to-face conversations or a phone call. They also highlighted using WhatsApp and email forms of communication. Respondent 6, however, emphasised the importance of personal verbal conversation to bring all parties to the same levels of understanding.

Respondent 1: *“But we try and assist them by scheduling regular meetings, for example, if we are busy with an execution of the project, then we might have a daily meeting with the whole project team and it’s not supposed to be hours long.”*

Respondent 1: *“But these informal as well. So, especially, for example, with our Finish equipment suppliers, we would have an evening during the week, for example, that they are all here where we would just have a Braai with them at one of the lodges and we would just relax and talk about other things besides work. And I think that’s important that relationships building.”*

Respondent 2: *“And every morning I sit with each of my HODs and we discuss just the major downtime.”*

Respondent 4: *“So, that’s usually that’s, that’s anything from verbal communication to a WhatsApp, a phone call or a short email or amendments on drawings on-site.”*

Respondent 6: *“So, I think a phone call or personal conversation is better when it’s urgent or when there’s something specific that has to be done to make sure that the other person understands.”*

Respondent 8: *“I wouldn’t say we always meet very formally, but we’ll meet each other in the kitchen and talk about a fire that happened or a pest and disease problem in the field or something like that. So, I think there is, there’s good network working.”*

Respondents appear to prefer using informal modes of communication, as shown in Table 17. The code informal communication through WhatsApp and short phone call had eight quotations and there was no difference in the frequency of code references for each of the BUs. Respondents highlighted that WhatsApp has tremendously improved the speed of conveying information across multiple groups. Respondents 2 and 12, in the quotations below, referenced how WhatsApp made communication easier and thus, improved work efficiency.

Respondent 2: *“So, I think without WhatsApp maybe in most of the companies I’ve worked or know you and you want to talk about Case firm, but they would be a massive a massive impact on, not only production, but soon your availability because I mean now it’s not even three minutes since the breakdown happened I’m already talking to the artisan on the floor, and I know exactly what’s going on.”*

Respondent 12: *“It’s helping a lot also now you’ve got WhatsApp groups wherein you can talk to 10 people at the same time and if you want to take a decision it’s the same time thing, then it’s technology, it’s growing and it’s helping. It has made life much easier.”*

WhatsApp appears to be commonly referenced and preferred communication mode by most respondents. Table 17 shows that six respondents referenced the code using tools for effective communication and decision making. It would appear that respondents also further alluded to WhatsApp as a preferred and efficient mode of communicating. Respondent 2 in the quotation below, however, also mentioned using technology tools to simplify the complexity by using online tools such as YouTube. Respondent 4 below highlighted that within the engineering team, they used their drawing tools to put ideas on paper and that it is an effective method of communicating technical information.

Respondent 2: *"You would need to read a book but now within minutes you are on YouTube and you watching a video, of exactly how something that is always being so complex is simplified for you, for you in a couple of minutes."*

Respondent 4: *"And we have been approached and I think one of our strong communication methods is drawings and we actually, the very first thing I do is I put pen on paper, and I started drawing. And so, it actually has worked a few times in the past way. A guy comes to us, we put it on paper, we take, and we never see him again. It's a perfect execution".*

Respondent 9: *"It's giving us accurate information to manage with. I mean there is a hundred and one 'WhatsApp groups in the company, uh, which, it plays a valuable role. The recent fire that I've referred to, our fire report that we had to write afterwards, uh, was a very easy task because everything was recorded on technology."*

Table 3, Appendix 6 shows that seven respondents referenced strong network connections, ten referenced knowledge networks, and 11 respondents referenced internal networks. It appears both BUs had similar reference code frequencies for strong network connections code, suggesting similar, high levels of network connections. Respondents 2, 4, 5, and 10 in the quotations below highlighted their perception of the importance of having a strong network in the execution of their duties. It would appear that the respondents attributed success to building strong networks to the individual's willingness to learn and their interpersonal skills to develop such networks.

Respondent 2: *"They share the network that have assisted us in the past with things that you don't usually encounter and yes it's working very well. I like to think of myself as a people's person, my friends anything from a car salesman, to CEOs, I know everybody. That has definitely helped me in different scenarios."*

Respondent 4: *"So, I think it's also important that in your network you must, you must always be willing to, to almost reach out to other people and, and broaden your horizon to make sure that your network is, broad enough that you can, can find a few quick guidelines."*

Respondent 5: *"So, yes, at the end of the day there, or let's say project team of five people that were critical in terms of the success of the project, but the amount of people that were really involved this probably in a hundred, couple of hundred is this."*

Respondent 10: *"You may need at least one person in every department where you know, you can just pick up the phone and chat to them and there are your link between those departments."*

Table 17 also shows a high code reference frequency for the knowledge networks (22) and internal networks codes (15). This might highlight that not only do the BUs have strong networks, but the networks are mainly knowledge networks and it would appear that the BU managers also referenced internal networks. Table 17 shows that the engineering BU respondents had a higher frequency of code references on using knowledge networks than their forestry counterparts, 13 for engineering compared to 9 for forestry. Respondents 6, 3, and 12's highlighted the importance of having knowledge networks and how this has assisted them to more efficiently execute their work.

Respondent 6: *"So, it's very good to have a good network of who is the best in the field and who you can employ for specific service so I think that's very important."*

Respondent 3: *"Then I would do research or call one of the civil engineers and find out or phone up someone in the construction industry that i know. So that's how I build up a network as well."*

Respondent 12: *"We also talked to our neighbours and talk to other competing companies and you find what they are doing, how they doing it and if you want to innovate or you're seeing systems working on their side, you go and find out, ask for data and you do joint collaborations also with universities, eh, on the academics and all that. That's where we, we collaborate externally to find more information."*

The data presented in Table 17 shows that the internal network code had 15 quotation references and both BUs had similar frequencies of quotations (8 engineering and 7 forestry). It appears that respondents highlighted the importance of having strong knowledge networks towards more efficient execution of their work, and they further highlighted that they also relied on internal collaborations and networks. Respondents 7, 12, and 10, in the quotations below, noted high levels of collaboration with individuals within other teams or departments within the organisation. Respondent 10 specifically highlighted that they made friends in other departments on whom they relied as their internal network, and depending on the need at a given time, they would tap into this relationship to collaborate.

Respondent 7: *"There's a lot of collaboration between various departments, especially where there is overlapping just as a reference example between harvesting and silviculture."*

Respondent 12: *"I think networking is very important, there is internal network wherein you have different departments to get the business going within your company."*

Respondent 10: *"It's companywide. I always say this, you have to have a friend in every department, so it doesn't matter. You might come across any, any type of problem in your day-to-day activities, you might have a problem with your vehicle. You might have a problem with the house you are staying in if it's a company house, it might be an issue on a payslip or ESS system or whatever may be."*

Table 17 further shows that although only three respondents referenced the structural barriers to collaboration code, it might be worthwhile to note that all six quotations references were referenced by respondents from the engineering BU and none from forestry. It looks like Respondent 5 in the quotation below highlighted that given how the BUs were structured, the engineering team could not fully deploy their abilities since they were never fully regarded as part of the teams they interacted with, they instead are regarded as outsiders.

Respondent 5: *"So, I think that, that, that ability is good in the stature, but it is a challenge because we never, we never truly part of the team and I understand it that and it's, it's how it's going to be it will always be like that."*

Respondents 2 and 4, in the quotations below, also alluded to communication barriers between engineering teams working at the different sites. They highlighted that these barriers prevented knowledge sharing, and consequently, there might be missed opportunities for the teams to enhance how they executed projects through this knowledge sharing.

Respondent 4: *"But I've actually found or actually found that that there's sometimes a communication barrier and the expectation might not be what was on the one side probably intended."*

Respondent 2: *"Lack of communication between the sites. I think there's a lot of knowledge that can be shared between sites. I mean there are engineers that's been here for ages but and obviously has a lot to offer me as a young engineer but then me with my background which I can also offer them a lot."*

It might be noteworthy to highlight that although Table 17 shows that three respondents referenced the flat structure with some organised hierarchy code, all four quotations were referenced by forestry respondents and none by the engineering respondents. Respondents 11 and 12 highlighted the organisation's flat structure; however, Respondent 11 also pointed

out that in forestry, there seems to be a combination of the flat structure together with some form of hierarchical organisation within the BU.

Respondent 12: *"The structure in our organisation, it's pretty flat."*

Respondent 12: *"How I see the structure. Case firm says they have a flat structure, but what I like here in forestry we still got the that hierarchical structure, which obviously reports into the GM."*

Table 17 also shows that ten respondents referenced the enablers of ambidexterity code and the quotation frequencies were similar between the two BUs. They were asked about their perception of what structural relational and cognitive social capital dimensions they regarded as critical towards the development of ambidextrous capabilities within their BUs. Respondents highlighted the importance of all three dimensions towards the development of BU ambidextrous capabilities. Respondent 6's quotation below highlights this.

Respondent 6: *"Yeah, but I think all three are basically important. So, I don't think that there is a distinction between the three. I think they kind of work with each other."*

None of the respondents, however, when probed further, singled out the structural dimensions of social capital as critical to the development of BU ambidextrous capability, but, as highlighted by Respondent 10, the networks are secondary but still critical.

Respondent 10: *"Probably the shared vision is probably the most important and the trust and the networks are secondary, but still critical I think for business unit success."*

Respondents perceived that the relational dimension, in particular, trust between individuals and the cognitive dimension regarding the shared vision as the most relevant social capital dimensions that enabled the development of ambidextrous BU capabilities within their contexts. It, however, seems as if more engineering respondents singled out trust to be the most important factor, and more forestry respondents perceived shared vision as the most important factor. Quotations by respondents 3, 6, and 9 illustrate the perceptions that trust is the most critical element for the development of ambidextrous capability within their context, and respondents 5 and 12 highlighted the shared vision perception.

Respondent 3: *"So, trust relational elements take, take the trophy. Yes. And it goes both ways."*

Respondent 6: *"The trust is very important. So, that I think is extremely important. And then also the individual networks as well."*

Respondent 9: *“Trust is the top one especially in an organisation like Case firm, with donut, structure and everything else that we’ve said. If I can’t trust my colleague if I have to feel like I have to check anybody up, we will not be able to function. You can have the shared vision and you can have the networking that will not bring you success if you don’t work with a team, that’s, when there is not absolute trust amongst each other and for me, I would say that’s the one that stands out.”*

Respondent 5: *“So, in my opinion, if you’ve got a good network and you’ve got good relationships but you don’t have a shared vision, then you’re going to end up having a conflict. And yes, the network might be great and yes, I might like you, but we’re going to work against each other. So, I would say it’s imperative you need to have a shared vision. And the, the challenge with the vision is in many cases it’s a, it’s very ambiguous.”*

Respondent 12: *“And if you share that same vision, you know where all you going, then the shared vision is the most important thing.”*

5.7.2 Relational dimension

Table 4, Appendix 6 shows the frequencies of quotations referenced for each of the social capital relational dimension codes. Table 4, Appendix 6 shows that most respondents referenced leadership practice (7), open-door culture to knowledge sharing (7), teamwork (7), culture (6), shared vision (6), connectedness (5), and trust (5). Respondents from both BUs identified an open-door culture and knowledge sharing within their BU. It, however, would appear as if the forestry respondents identified more with this given the higher number of quotations referenced (8) compared to engineering with a code reference frequency of (3).

The quotations below from forestry respondents 4, 7, 8, and 9 illustrate how the respondents perceived this open-door culture to knowledge sharing. It would appear that both BUs are open to knowledge sharing, there seems to be positive energy created by sharing knowledge, and this seems to happen informally in the corridors and in offices. This finding corresponds to the observation made during the interviews and noted in the field notes that most of the forestry respondents were sharing an open-plan office, except for Respondent 11 at the time of the interviews. The open-plan office set up might have facilitated the open-door culture.

Respondent 4: *“I think there’s definitely a, let’s call it an open-door policy. We, like to share and I think that’s actually how we generate our positive energy by sharing and educating our fellow colleagues.”*

Respondent 8: *"I think number one, because we're all in the same office, we walk past each other a lot and we do communicate a lot."*

Respondent 9: *"Basically, an open-door policy, and anybody is welcome to walk into anybody's office and ask and give opinions and, make recommendations."*

Respondent 11: *"What I understand about in forestry, people would rather talk to you in the corridor or in your office than in a structured meeting."*

Respondents also referenced the culture code and, as shown in Table 4 Appendix 6, managers from both BUs had an equal number of quotations referenced. Respondents 7, 9, and 10's quotations below seem to highlight that there was an ethos of individuals going beyond their defined roles and not been confined. This was specifically referenced by the forestry respondents. Respondent 5, however, highlighted that due to the diverse sites covered by the engineering BU, it would be expected that different personalities and cultures manifest at the sites.

Respondent 7: *"It's also the ethos I think is also, it's not a, it's not an 8 to 4 job. It's not a five-days-a-week job. You don't have to feel guilty for phoning a colleague at nine o'clock on a Saturday evening or early on a Sunday, evening it's because operations require us to do, to be in the moment or at least know what's going."*

Respondent 9: *"Furthermore, the culture in the company is that if you are manager in Case firm and you see something wrong, you are expected to something about it. You, there's not a culture of, it's, it's wrong, but it's not my job to fix it and that doesn't exist in Case firm."*

Respondent 10: *"Think in the structure, um, if you had to look at the organogram of forestry, I think that is, it's definitely defined roles within this unit. But because of our culture, we are not confined to those defined roles."*

Respondent 5: *"Apart from the technology differences at the different mills that the personalities are also different, so, are the cultures."*

Although only two respondents referenced the candid debate code, it was only referenced by the forestry respondents (Table 4, Appendix 6). It is most likely that the code might be embedded under the culture code. Respondent 10 highlighted that the forestry team has a culture of engaging in robust and frank debates and this might have been made possible by an environment of psychological safety.

Respondent 10: *“We can be frank with each other. We can say exactly how we feel about it. See how I agree. I disagree and we debate, and we have discussions. At the end of the day we make a collective decision.”*

Also, although psychological safety code was only referenced by three respondents (Table 4, Appendix 6), it might be possible that a psychologically safe environment prevailed within the BU made candid debates possible. Respondent 11 somehow alluded to that within the forestry BU in the quotation below.

Respondent 11: *“I must be able to voice my opinion and I must be able to have the trust that it will be taken in a constructive manner.”*

Table 4, Appendix 6 also shows that teamwork was referenced by seven respondents. Forestry respondents’ code reference frequency was seven compared to four for engineering. Respondents 2, 9, and 10, in the quotations below, highlighted the respondents’ perceptions on the importance of teamwork. It would appear that individuals relied on each other and worked quite closely with each other.

Respondent 2: *“Yes, it’s an interesting question but for our team especially from the HODs and myself working very closely together.”*

Respondent 9: *“We have to really rely on each other and if you undertake to perform a certain function then you must produce the results without somebody having to check up on you.”*

Respondent 10: *“Because at the end of the day we’re all responsible for each other’s success. You cannot have individual success.”*

The shared vision code has been referenced by six respondents (Table 4, Appendix 6) of which seven quotations were referenced by the forestry respondents and three by engineering respondents. It is possible that the forestry respondents identified more with the shared vision, which corresponds to the results presented earlier on the enablers of the development of ambidextrous capabilities within the BU where forestry respondents perceived shared vision as a critical enabler. Respondent 10’s perception of having a shared vision within the BU:

Respondent 10: *“I mean everybody has to be on board. There shouldn’t be any misalignment because we all play a part in helping each other get there, helping the business get there. So, we have shared vision, and everybody buys into that.”*

Table 4, Appendix 6 further shows that respondents referenced the friendship and connectedness codes. Five respondents referenced the connectedness code and four referenced the friendship codes. It would appear that of the seven quotations referenced for the connectedness, six were referenced by forestry respondents and only one by engineering. This data could suggest that the forestry respondents identified more with connectedness within the team. This data could also resonate with earlier trends reported where the forestry respondents also identified more with the teamwork, open-door culture, and shared vision codes.

Respondent 7: *“In forestry, definitely, if I can just think of a couple, I think we really good in keeping each other in the loop of what’s happening. Like I said, across various departments within forestry.”*

Data in Table 4, Appendix 6 shows that the codes of young guys flourishing in a freer and open environment and structured field days encouraging introverts to communicate, were referenced by two and one respondent, respectively. Although only a few respondents referenced the codes, it was only the forestry respondents who identified with these codes, suggesting a possible relationship with the earlier finding that the forestry BU respondents identified with connectedness. It might be possible that the environment within the forestry BU at the time of the interview could have enabled the perceived BU connectedness. The quotations below show forestry respondents 11 and 9’s perceptions on the structured field days and the young guys flourishing in the freer open environment, respectively.

Respondent 11: *“Because everything’s interwoven, and you encourage the knowledge base to come together is having those field days. So, each person can say, but because you didn’t do this it impacted my planting, because you didn’t slash properly it impacted my harvesting, because you didn’t do the roads I got so much punchers on my tires. Usually we just come at month end and say okay, I have got R500 000 worth a tire repairs. And why? So, you need to actually put the individuals in the car and drive out there and show them what’s happening. But the field days we have are very encouraging.”*

Respondent 9: *“... and the young guys that get recruited. And I think there’s many examples of the guys who absolutely flourish in, in this freer and more open environment.”*

The data shows that there was no difference between the BUs in the frequency of quotations referenced for the friendship code (Table 4, Appendix 6). It would appear that friendship was identified as an important element that comprised the prevailing BU social capital architecture at the time of the interviewees.

Respondent 1: *“It’s just maybe everybody getting together after work, have a couple of beers and that’s it. Just to have that other informal connection. I think is sometimes a good thing.”*

The code of discouraging use of emails but face-to-face communication was also referenced by three respondents (Table 4, Appendix 6). Five of the seven referenced quotations were referenced by the engineering respondents (Table 4, Appendix 6). It is possible that the engineering respondents identified more with this code and, therefore, discouraged using emails as the only form of communication. It could be that the prevailing BU environment could have influenced the preferred mode of communication.

Respondent 6: *“I think it also comes back to when only emails are sent, I don’t really like that.”*

Although the individual trust code had few quotations referenced (Table 4, Appendix 6) it might be worthwhile to note that of the five quotations, four were referenced by engineering respondents. It is possible that this trend could be related to an earlier finding on the questions asked to the respondents about the perceived social capital dimensions that enabled the emergence of ambidexterity. It was found that more engineering respondents perceived the relational dimension, in particular, trust as the more critical enabler.

Respondent 1: *“So, it’s being loyal and trustworthy that’s important because that creates respect and understanding between the team members, which is critical.”*

Leadership practices in enabling development of BU ambidextrous capability

The leadership practices code was referenced by seven respondents and had a higher frequency of quotation references (Table 4, Appendix 6). Thirty-two quotations were referenced of which 13 were referenced by forestry respondents and 19 by engineering respondents. The data suggest that most respondents perceived leadership practices as an important element of the social capital architecture of the BU. The engineering respondents referenced more the leadership practices code, which could suggest that they identified more with leadership practice in their environment. The quotations below suggest that leaders influence the social capital architecture in the BU environment and create the necessary expectations that direct how the BU relates and functions. Respondent 9 alluded to how leaders could create an enabling environment that would encourage exploitation or exploration.

Respondent 2: *“So, were there was quite a management change that we went through in the team. How we approached people and how we manage people. Now we, we talk to each other. So, the older guys still believe in you have to scream and shout.”*

Respondent 3: *“, that’s the, that’s what’s really important to when we start from the manager’s side. So, that’s what dictates the team. So, you enforce a trust relationship or a communication network or a, or a way of doing things.”*

Respondent 5: *“I think you can describe her as the oil that makes everything run. So, the bearings are there, but if she’s not there, then friction becomes much. And I think that’s probably the best way I can describe her now, I mean the bearing on its own is important, but if you don’t have the lubrication, it’s not going to work. And that is almost exactly how I sum up a team.”*

Respondent 9: *“Where they are allowed and encouraged to interact with each other and also then, with different specialists but also general management on, both the exploitation and exploring side. I think Case firm is managing to do it well.”*

Respondent 10: *“Sometimes, it’s good to hear a different viewpoint because you might think of something I didn’t think about that maybe that can work. Let’s try it. And I always say, don’t knock an idea before you’ve tried it. So, I never say no because when you say the same no and no people stop coming to you, they stop coming up with the ideas. They say why even bother they close up and say this guy is not going to give me a chance to say what I want to say.”*

Respondent 10: *“So, it an introvert, that’s just their characteristic and they keep it to themselves, but it’s your ability as a leader to get it out. But once you open that tap, you can get whatever you want to get out of it.”*

5.7.3 Cognitive dimension

Table 18 shows that the shared codes and language code was the most referenced of the social capital cognitive dimension codes. Nine respondents referenced the code. Data also shows that of the 16 quotations referenced for the code, nine were referenced by the forestry respondents and seven by the engineering respondents. The data shows that the engineering respondents referenced all six of the cognitive dimension codes and the forestry respondents only referenced two.

Table 18: BU Comparative Group Summary Social Capital Cognitive Dimension Code References

Social Capital - Cognitive dimension	Engineering number of code references	Forestry number of code references	Total number of references per code	Number of respondents who referenced code
• SCC – Shared codes and language	7	9	16	9
• SCC – Shared systems of meaning	3	0	3	3
• SCC – shared technical and operational knowledge	4	0	4	3
• SCC – Shared system of understanding	2	1	3	2
• SCC – Norms and sanctions	1	0	1	1
• SCC – Shared narratives	1	0	1	1

The quotations below show the respondents' perception of the shared codes and language within their BUs. It would appear that respondents highlighted how they valued having a shared collective agenda rather than individualistic agenda's, and as Respondent 10 noted, that this brought a shared responsibility for the success of the team.

Respondent 1: *"You have to think about the agenda of the company or the project or this production team instead of having your own agendas or ideas."*

Respondent 3: *"I would say they do expect a certain work rate between each other. So, there was a few times when people come to me, they said, well, he's perhaps just sitting around on Tuesdays, Wednesdays and Thursdays when it's not maintenance on his machines. When we have to help him then he gets cross with us. So, he expects help from us but, if we did the same thing, he doesn't really help out."*

Respondent 7: *"I think it's easy for forestry, our guys we all understand the end goal. So, it's not, it's never a, big thing to, to go into a department or teams or let's change this, let's*

do this. Nice. I don't think they say really because it's interactive or we collaborate. There's not much of you are intruding into my space."

Respondent 7: *"... and I think people are already starting to buy into that idea and there is a shared responsibility for the success of the business and that's, the connectedness that I see across different disciplines within the business unit such an integrated system."*

Data in Table 18 shows that only the engineering respondents referenced the shared systems meaning and shared technical and operational knowledge codes. Respondents 5 and 3, in the quotations below, seems to suggest that the context in which the BU operated might have influenced the perceptions of the respondents to identify more with a shared system meaning or shared technical and operational purpose.

Respondent 5: *"Whereas if you're in operations and you've got a direct operations, accountability and responsibility, the interests are more aligned. So, in that aspect it's a bit easier."*

Respondent 3: *"They will always help each other. There would be some guys who are more skilled in the hydraulic type of things. And so, each person in my whole plant has got their own role on a machine. So, if you've got a hydraulic problem and you're not that skilled in the hydraulic sense of way, then you would actually try and call the other fitters or we have those more skilled and that's how you would gain knowledge."*

5.7.4 Social capital category summary

Of the three social capital dimensions, structural, relational and cognitive, respondents mostly referenced the structural and relational dimensions when asked to describe the prevailing social capital architectures within their BUs. Senior managers referenced more the relational dimension compared to other managers, and the junior managers identified more with the structural dimensions compared to other management levels. The code that referred to the means individuals within the BU used to reach others was referenced the most by the respondents. It appears that individuals within the BUs used a variety of means to connect and this could have been influenced by the BU context.

Individuals saw the value of engaging informally as above the formally scheduled meetings. It would appear that individuals from both BUs saw the importance of verbal communication either face-to-face conversations or a phone call. Respondents appear to prefer using informal modes of communication and emphasised how WhatsApp made communication easier and thus, improved work efficiency. WhatsApp appears to be commonly referenced and preferred

communication mode by most respondents. Respondents, however, referenced that they valued the importance of personal verbal conversation.

Respondents from both BUs referenced having strong network connections and attributed the success in building strong networks to the individual's willingness to learn and their interpersonal skills to develop such networks. Not only did the respondents perceive the BUs to have strong networks, they referenced that these networks are mainly knowledge networks and it would appear that the BU managers also referenced using internal networks. The engineering BU respondents appear to have identified more with using knowledge networks than their forestry counterparts. Having strong knowledge networks was highlighted as important and respondents referenced that they also relied on internal collaborations and networks. It seems as if in both BUs, there were high levels of collaboration with individuals from other teams or departments within the organisation. Respondents highlighted that they made friends in other departments on whom they relied as their internal network, and depending on the need at a given time, they would tap into this relationship to collaborate.

The engineering respondents, however, highlighted some structural barriers to efficient collaboration within the BU. It appears that the engineering team could not fully deploy their abilities since they were never fully regarded as part of the teams with which they interacted; they instead were regarded as outsiders. They highlighted that these barriers prevented knowledge sharing, and consequently, there might have been missed opportunities for the teams to enhance how they executed projects through this knowledge sharing.

When asked their perception of the social capital dimensions they regarded as critical towards the development of ambidextrous capabilities within their BUs, the respondents highlighted the importance of all three dimensions towards the development of BU ambidextrous capabilities. The respondents, however, perceived that the relational dimension, in particular, trust between individuals and the cognitive dimension, with particular reference to the shared vision, as the most relevant social capital dimensions that enabled the development of ambidextrous BU capabilities within their contexts. It, however, seems as if more engineering respondents singled out trust to be the most important factor and more forestry respondents perceived shared vision as the most important factor. When respondents were asked to identify what they perceived as the most important element, they singled out trust.

Leadership practice, open-door culture to knowledge sharing, culture, shared vision, and teamwork were the most referenced relationship codes. Respondents from both BUs identified an open-door culture and knowledge sharing within their BU. It would appear that both BUs are open to knowledge sharing and there seems to be positive energy created by sharing

knowledge, and this seems to happen informally in the corridors and offices. Data presented appear to highlight that forestry respondents perceived that there was an ethos of individuals going beyond their defined roles and were not confined. According to the engineering BU, due to the diverse sites covered by the BU, it would be expected that different personalities and cultures manifest at the sites. The forestry respondents referenced a culture of engaging in robust and frank debates, and this might have been made possible by an environment of psychological safety created within the BU.

Respondents from both BU's referenced their perceptions of the importance of teamwork. It would appear that individuals relied on each other and worked quite closely with each other. It is possible that the forestry respondents identified more with the shared vision, which corresponds to the results presented earlier on the enablers of the development of ambidextrous capabilities within the BU, where forestry respondents perceived shared vision as a critical enabler. Forestry respondents identified more with connectedness within the team and this finding resonates with an earlier finding where the forestry respondents also identified more with the teamwork, open-door culture, and shared vision codes.

Although the codes of young guys flourishing in a freer and open environment and structured field days encouraging introverts to communicate had low references, only the forestry respondents identified with these codes, suggesting a possible relationship with the earlier finding that the forestry BU respondents identified with connectedness. There, therefore, might be a possibility that the prevailing environment within the BU at the time could have enabled the perceived connectedness within the BU.

Respondents referenced friendship as an important element that comprised the prevailing BU social capital architecture at the time of the interviews. It is possible that this trend could be related to an earlier finding on the respondents perceived social capital dimensions that enabled the emergence of ambidexterity. It was found that more engineering respondents perceived the relational dimension, in particular, trust to be the more critical enabler.

The leadership practices code was the second-most referenced social capital code. The data suggest that most respondents perceived leadership practices as an important element driving the social capital architecture of the BU. The engineering respondents referenced more the leadership practices code, and this could suggest that they identified more with the relevance of leadership practice in their operating environment. The data presented appears to suggest that leaders influence the social capital architecture, in particular the BU environment, and create the necessary expectations that shape the relationships and how the BU operates. The

data presented seem to suggest that leaders could create an enabling environment that would encourage exploitation or exploration.

Shared codes and language were the most referenced of the social capital cognitive dimension codes. The data also show that the engineering respondents referenced all six of the cognitive dimension codes, and the forestry respondents only referenced two. It would appear that respondents highlighted how they valued having a shared collective agenda rather than individualistic agenda and that this brought a shared responsibility for the success of the team. Only the engineering respondents referenced the shared systems meaning and shared technical and operational knowledge codes. The data presented seem to suggest that this might be driven by the unique BU contextual issues and could have influenced the perceptions of the engineering respondents to identify more with a shared system meaning or shared technical and operational purpose.

5.8 Organisational Capital

The organisational capital category had only one organisational design sub-category (Table 19). The organisational design sub-category had a quotation frequency of 58 (Table 20). This category emanated from the responses given by the interviewees on their perceptions of questions related to how they understood ambidexterity and social capital and how they manifested in their BUs.

Table 19: Organisation Capital Code Structure

Organisational Capital — 13. <i>Organisational design (OCD)</i>
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Table 20: Managerial Level Comparative Group Summary Social Capital Cognitive Dimension Code References

Organisational capital Sub Category	Junior Manager Group number of sub category references	Middle Manager Group number of sub category references	Snr Manager Group number of sub category references	Total number of sub category references	Total Number of respondents who referenced sub category	Percentage of total sub category references
Organisational design	22	22	14	58	12	7%

Table 5, Appendix 6 shows that the structures code was the most referenced code by the respondents. Eleven respondents referenced this code. The engineering respondents, however, referenced more quotations (15) compared to the forestry respondents (8). Although the freedom code was only referenced by four respondents, it could be observed that all of the quotations were referenced by the forestry respondents. Respondents 9 and 8 referenced that the organisational design allowed individuals the freedom to explore.

Respondent 9: *“People are allowed a lot of freedom in Case firm. But with freedom comes a lot of accountability and responsibility.”*

Respondent 10: *“My stated title is a silviculture manager, but nothing stops me from exploring into tree breeding, nursery, exploring into engineering. Learning a little bit more about the micro forest and the database and the growth models to bring everything together.”*

Respondents referenced the structures code and it appears that they perceived that BUs operated within and were influenced by the firm’s level structures that prevailed. The code small BU teams with specialist knowledge were also referenced by respondents. The respondents’ perceptions of organisational structures (Respondents 5) and small BU teams (Respondent 9) are highlighted in the quotations below.

Respondent 5: *“With the engineering team, it’s always a challenge because we are not directly part of a specific team.”*

Respondent 5: *“And so, on the one hand it’s easier at Driekop because it’s just the way the structure is set up.”*

Respondent 9: *“It’s really part of the heart of Case firm, I said earlier that we are very thin on the ground. You have very flat structure, and there’s no room for deed wood, there’s no room for passengers.”*

5.9 Organisational Capital Summary

Structures were the most referenced code of the organisational design codes of which the engineering respondents referenced more quotations than forestry. It appears that respondents perceived that BUs operated within and were influenced by the firm's level structures that prevailed. Although the freedom code was referenced by only three respondents it can be observed that all of the quotations were referenced by the forestry respondents. The respondents suggested that the organisational design allowed individuals the freedom to explore outside the confines of their job descriptions. The code small BU teams with specialist knowledge were also referenced by respondents, and they alluded to the BUs' small lean teams and the flat structure.

5.10 Human Resources

The human resources category has three sub-categories, as shown in Table 21. The human resources codes emanated from interviewees' responses when asked for their perceptions of how they understood ambidexterity and how it was manifested within their BUs. Based on the responses, the codes could be grouped into three sub-groups shown in Table 21. In this section, findings will be presented from the data shown in the text and Table 22 in Table 6, Appendix 6.

Table 21: Human Resources Code Category Structure

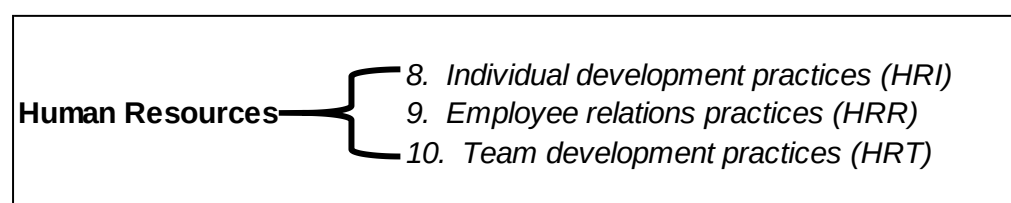


Table 22 shows that respondents referenced the team development practices codes the most. All 12 respondents referenced the team development code. The total number of quotations referenced for this code is 75 of which senior managers referenced the most quotations (36). Employee relations practices codes were referenced in 14 quotations of which junior managers referenced most of the quotations (8).

**Table 22: Managerial Level Comparative Group Summary Human Resources
Dimension Code References**

Human Resources Sub Category	Junior Manager Group number of sub category references	Middle Manager Group number of sub category references	Snr Manager Group number of sub category references	Total number of sub category references	Total Number of respondents who referenced sub category	Percentage of total sub category references
Team development practices	23	16	36	75	12	10%
Employee relations practices	2	1	2	5	4	1%
Individual development practices	2	1	1	4	4	0%

Table 23 shows that the forestry BU respondents referenced more quotations compared to the engineering respondents for the team development practices sub-category.

Table 23: BU Comparative Group Summary Social Capital Cognitive Dimension Code References

Human Resources Sub Category	Engineering Group number of sub category references	Forestry Group number of sub category references	Total number of sub category references	Total Number of respondents who referenced sub category	Percentage of total sub category references
Team development practices	33	42	75	12	10%
Employee relations practices	3	2	5	4	1%
Individual development practices	4	0	4	4	0%

Table 6, Appendix 6 shows that the most respondents referenced the following team codes the most: cross-team collaborations with someone good at managing relationships (7), heterogeneous specialist team structure and team design aligned with strategy (6), team design aligned with strategy (6), doughnut team interaction structure (5), and selective staffing fit (5). Notably, the data show that only the forestry BU respondents referenced nine quotations for the technical panel of diverse specialists supporting operations code. Respondent 8 and 9 in the quotations below highlighted that the forestry BU is structured to include a panel of experts to which the individuals in the BU have ready access.

Respondent 9: *"I think that's extremely important. And, and I think again, Case firm is very well-structured in that sense, that there is heavy reliance on external expertise,*

meaning that there is a panel for lack of a better word, a panel of, specialists in specific fields. It's highly technical. It's very scientific and whether it's forestry diseases or whether it's soils or whether it's climate or whether it's species or genetics, there is this panel of expertise that..."

Respondent 8: *"I think to our benefit, we, can pick up and phone these guys anytime we can pick up the phone to phone them and ask them."*

The forestry respondents also referenced the doughnut team interaction structure. None of the engineering respondents referred to this code. It appears from the quotations below that the respondents see the positive impact of these interactions. The respondents also highlighted that the doughnut structure was intended to be a companywide interaction mode and not limited to only the BU level. It, however, seems as if the forestry respondents found this to be relevant.

Respondent 9: *"The donut structure allows people to have the freedom to put up their hand and say, but I can make a difference. I've got the contribution to make, I've got experience in this and that and in the, in the projects as well as in the general day-to-day management of the company and the general Case firm style is not to box people in. I can state categorically that that makes the company more effective."*

Respondent 12: *"I think in our organisation we've got a very good approach. They call it a doughnut approach wherein you are not limited to who you talk to, how you talk to the person professionally and all that. That means that we've got a lot of social platforms."*

Respondents from both BUs referenced the code cross-team collaboration requires someone good at managing relationships. Eleven quotations were referenced for this code and it was referenced by seven respondents (Table 6, Appendix 6). Respondents 4 and 12 highlighted how the BU architecture is structured so that individuals can to cross-collaborate and the relevance of maintaining good relationships to enable collaboration.

Respondent 14: *"So, I think that's one of the the nicest part of my job is actually just not sitting all day with engineers. But every now and then walking down through the sales or finance, finance department and ask them, but why are you doing this this way? And they would actually explain it to you from a sales point of view, not from engineering view or from a forestry side or from processing side."*

Respondent 12: *"I think in our organisation we've got a very good approach. They call it a doughnut approach wherein you are not limited to who you talk to, how you talk to the person professionally and all that. That means that we've got a lot of social platforms."*

The data also shows that respondents referenced the heterogeneous specialist team structure. It would appear that the BUs consisted mainly of specialist managers. Respondent 11 perceived specialists to more likely be introverted. It, therefore, appears as if the BUs were designed to bring together specialist skills to focus on their areas of speciality.

Respondent 4: *"And then I think the nice thing about our engineering department is that we have a lot of different individuals that's fairly specialised in their fields."*

Respondent 1: *"... think in the old days we used to, all school used to have more than 80%, extroverts or introverts would act like extroverts. But now the model is shifting a bit. We're getting more introverts and extroverts into that situation. And those introverts, are the guys that are the specialists, that's your knowledge-base people that come through that want to hone in on the specific skills, specific knowledge, and then they come in and do that specific task that you want to do."*

Team design aligned with strategy team diversity and selective staffing codes also had a fair amount of references. Respondent 5's quotation below suggests that the team's composition must be aligned with the strategy.

Respondent 4: *"So, I think one thing that is important is in terms of the composition of the team, it's always important to have technical expertise because you can have the best relationship at the end of the day if you don't put a technical solution together and then relationships matter nothing."*

The data presented suggest that the respondents perceived team composition as important for effective execution. This might also include the diversity of the team since respondents referenced the team diversity code (Table 6, Appendix 6). Respondents 5 and 9 highlighted in the quotations below their perceptions of how they value age, experience, and gender diversity in their teams.

Respondent 5: *"Because there's always egos and especially when they are mostly men."*

Respondent 9: *"So, I think Case firm has a good balance between experience and youth. it is healthy for the young guys to challenge the ways of the past."*

Although respondents referenced the code for selecting individuals who will fit into the BU six times (Table 6, Appendix 6), respondents perceived it as an important human resources function that enabled the performance of BU teams. Respondents 5 and 7 reflect their perceptions of the importance of getting individuals with the best fit for the teams to ensure successful team dynamics.

Respondent 5: *“...takes a lot of time to get the specific person that fits within the team and as the right knowledge and everything.”*

Respondent 9: *“I always say, it works beautiful as long as it’s populated with the right individuals. A lot depends on personalities, I mean I worked in my career with people who are hard workers and very good workers, but will battle in such a loose and free, management structure. Some people want to be directed.”*

The high employee turnover code had a low frequency of quotation references. It, however, might be important to note that it was only the engineering respondents who referenced the employee turnover code. This might be because the engineering BU incurred more employee turnover compared to their forestry counterparts at the time of the interviews. This result could be explained by the BU context and could explain the earlier finding that the same engineering respondents also referenced most of the quotations for leadership practice. Other factors within the BU environment might have prompted the employee turnover within the BU.

5.11 Human Resources Summary

Codes related to human resources intervention originated from interviewees’ responses when asked for their perceptions of how they understood ambidexterity and how it was manifested within their BU. Codes related to team development practices were the most referenced codes that respondents found relevant in their BUs. In contrast, the codes related to employee relations practices and individual development practices had few quotations referenced. It, therefore, appears as if respondents did not perceive them as too relevant in the current BU environment.

Cross-team collaborations with someone good at managing relationships, heterogeneous specialist team structure, team design aligned with strategy, team design aligned with strategy, doughnut team interaction structure, and selective employee fit were referenced the most. The data, however, show that the forestry respondents exclusively referenced the technical panel of diverse specialists supporting operations and the doughnut team interaction structure codes. From the quotations, the forestry BU is structured to include a panel of experts to which the individuals in the BU have ready access to. The forestry respondents also exclusively

referenced the doughnut team interaction structure, seeing the positive effect of these interactions. The doughnut structure, however, was intended to be a companywide interaction mode and not limited to only the BU level.

Data presented showed that the BUs are structured such that individuals can cross-collaborate and the relevance of maintaining good relationships to enable collaboration. It, therefore, appears as if the BUs were designed to bring together specialist skills to focus on their areas of specialities. Team design aligned with strategy, team diversity, and selective staffing codes also had a fair amount of references. The data presented suggest that the respondents perceived team composition as important for effective execution. This might also include the diversity of the team since respondents referenced the team diversity code. Respondents from both BUs also highlighted their perceptions of how they valued age, experience, and gender diversity within their teams. The data presented suggest that respondents valued recruiting individuals with the best fit for their teams to ensure successful team dynamics.

The high staff turnover code had a low frequency of quotation references. It, however, might be important to note that it was only the engineering respondents who referenced the staff turnover code. This might have emanated from the engineering BU experiencing a high staff turnover compared to their forestry counterparts at the time of the interviews. This result could be explained by the prevailing engineering BU environment. This could also explain the earlier finding that the same engineering respondents also referenced most, the code for leadership practice. Other factors within the BU environment might have prompted the employee turnover within the BU.

5.12 Conclusion

This chapter represented the findings of the study. The findings were presented for each category or theme. The results section, therefore, was divided into the ambidexterity, social capital, human resources, human capital, and organisational capital sections. The section results were summarised at the end of each section. The following chapter will be a discussion of the results presented.

CHAPTER 6: DISCUSSION OF RESULTS

6.1 Introduction

This chapter discusses the results of the study that were outlined in Chapter 5. The results are discussed in detail, together with some insights from the relevant literature. The chapter is structured along with the three research questions the study has set out to answer. The research questions are outlined in Chapter 3 and they are structured to providing a better understanding of how BU ambidexterity could be enabled through social capital mechanisms. The research questions will be restated at the beginning of each section for convenience and ease of access.

6.2 Discussion of Results for Question 1

Research question 1: How is ambidexterity understood within the BU?

Going back to some of the literature covered in Chapter 2, extant literature acknowledged that firms that can adapt in line with changes in their environments have a better chance of surviving the increasingly demanding and complex environment (Levinthal & March, 1993; Luger et al., 2018; Uhl-Bien & Arena, 2018). Ambidexterity was highlighted as a critical firm-level capability and an antecedent to firm adaptability and long-term survival. In the literature review, scholars observed that most of the ambidexterity research was done at firm level; however, they highlighted that there still is a gap in the understanding of how ambidexterity is operationalised at the lower levels of the firm (Benner & Tushman, 2015; Kostopoulos et al., 2015; Turner et al., 2015). How to operationalise ambidexterity at the lower-level firm structures such as departments, functional groups, or project teams is not yet fully understood (Turner & Lee-Kelly, 2013).

The research question, therefore, sought to understand ambidexterity at the BU level from the perceptions of BU managers. Specialist managers from two sampled BUs were interviewed to get their lived experiences and perceptions of how they understood the ambidexterity construct. The demographics of the sampled specialists are outlined in Section 4.3, Table 1. The questions in the first part of the semi-structured interview guide explored the participants' perceptions of how their BU explored new knowledge and capabilities and exploited existing knowledge and capabilities for long-term superior performance. The responses obtained from the participants resulted in a coding scheme highlighted in Section 5.2, Table 4. The ambidexterity category was divided into three sub-categories and 17 codes (Appendix 4). The three sub-categories were team ambidexterity, exploration, and exploitation.

6.2.1 Business unit ambidexterity

The data were analysed and Table 1 in Appendix 4 shows the rank frequencies for the ambidexterity codes. The codes that were referenced by most respondents were referenced ATM-contextual ambidexterity, AXR-searching and experimentation, AXT-improvement, ATM-paradox challenges, AXR-external ideas and resources, AXT-efficiency, and AXT-production codes. Tables 5 and 6 in Section 5.2 showed that all the respondents referenced all three categories, team ambidexterity, exploitation, and exploration and that there was no significant difference between the comparative groups in the references made. This, therefore, showed that both BUs were ambidextrous and were engaged in both exploration and exploitation activities. More detailed insights, however, were given by respondents 3, 4, 5, 8 and 12 in their responses to the questions on their perceptions of how their BU explored new knowledge and exploited existing knowledge. For convenience, the responses are restated below.

Respondent 3: *“So, it’s just in various aspects within the plant and the, the human capital as well as artisans doing the work. So, making sure the job is getting done, making sure the maintenance plans is according to standards, making sure machines experience less downtime as possible. So, that’s my role.”*

Respondent 5: *“So, it depends a bit on the economic situation of the company and in investment curve. So, at this stage we focus more on efficiency improvements. So, we are more focused on exploiting the current knowledge to get small improvements and while we are looking at big opportunities.”*

Respondent 4: *“Let’s say there’s a problem and we need to make a plan. We don’t have time. That’s, that’s usually not the most effective ways to communicate. But it’s almost survival mode. We’re in trouble. We have to make a plan.”*

Respondent 5: *“It’s again, it’s an interesting dynamic in my team, because we don’t always have day-to-day measurables so and I think that culture or the ethos in my team changes, my team actually changes as the expectations and the team composition or position changes and the projects that we do.”*

Respondent 8: *“So, I think if it was only focused within our company, then we’d be only exploiting. The consultants bring a bit more of that exploring part of it.”*

Respondent 12: *“You are still expected to look at what is currently happening, put your full effort for the benefit of the business and it’s also your dual responsibility to look at what is going to happen in the future.”*

From the above quotations, over and above the notion that both BUs were involved in doing both exploring and exploiting, the respondents highlighted a combination of different approaches the BUs are using to achieve ambidexterity and these include structural (respondents eight and three), contextual (Respondent 12), and dynamic (respondents five and four) approaches. This finding of a complex mix of approaches highlighted by the respondents is common in literature. Luger et al. (2018) alluded to the complexities in the processes involved to operationalise ambidexterity within firms. They further observed that ambidextrous organisations are known for their comprehensive structural, contextual, and leadership mechanisms.

Respondents eight and three both alluded to structural separation of the explore and exploit functions. Respondent 8 alluded to outsourcing some of their explore functions to external consultants while they mostly focused on exploiting internally. Respondent three highlighted that they focused on exploiting through making sure the daily production processes were efficient and they represent a specialist team who fixes machines and processes. Respondent 12 referred to the expectation within the BU of individual contextual ambidexterity. Extant literature has extensive scholarship on both structural and contextual approaches to firm ambidexterity. Scholars have studied temporal, structural, and contextual forms of ambidexterity (Benner & Tushman, 2015; Cao et al., 2009; Turner et al., 2015; Turner & Lee-Kelley, 2013).

There, however, has been a movement by researchers to focusing more on contextual ambidexterity (Benner & Tushman, 2015; Gibson & Birkinshaw, 2004; Kang & Snell, 2009; Papachroni et al., 2015) over the seemingly mature research on structural ambidexterity (Benner & Tushman, 2015). Results of the study show the simultaneous use of these approaches within the BUs. Chebbi et al. (2015), in support of the combined use of approaches, argued for a dual approach that considered both structural and contextual aspects in the design of an organisation. The finding in this study that the majority of respondents referenced contextual ambidexterity in their responses is aligned to observations in the literature. Scholars alluded to a shift in ambidexterity research from structural to contextual ambidexterity.

An interesting result was the responses given by respondents five and four. The respondents referred to an approach that responds to the prevailing conditions. Respondent five noted that

their team was geared to respond to changes in team composition, new projects, the external financial position of the firm, and changes in investment levels driven by the macroeconomic environment. Respondent five further pointed out that due to the prevailing tough macroeconomic environment in which the firm was operating, the team focused more on engaging in exploitation efficiency improvement activities. This dynamic approach to ambidexterity resonates well with contemporary ambidexterity research findings.

Luger et al. (2018) challenged the traditional static view of attempting to always achieve a balance between exploration and exploitation activities. They posited towards a dynamic balancing of exploitation and exploration by combining capability-building processes and processes that shift capabilities to align with the demands of the prevailing context. Luger et al. (2018) noted that reinforcing ambidexterity when firms are facing incremental change could have positive results. When, however, faced with discontinuous change environments, maintaining ambidexterity might have negative results due to misalignment with the external context. Luger et al. (2018), therefore, postulated that ambidexterity could be a mere episode among cycles of exploitation or exploration as the firm adapts to the prevailing context.

The results presented in Section 5.2 and referring to the quotations and data presented in Table 1, Appendix 6, show most of the respondents, irrespective of the BU, highlighted that short-term exploitation activities, i.e. production and saving costs, were receiving more attention at the time of the interviews compared to the exploration activities. New codes also emerged after the transcription analysis that referred to the team's focus on short-term exploitation needs over long-term exploration activities due to the tough economic conditions. The engineering respondents also had more references for these codes. It, therefore, can be observed that although both BUs focused on exploitation during these difficult economic times, the extent of exploiting or exploring, however, was not the same between the two BUs. It would appear that the engineering BU was exploiting more than their counterparts.

The response from the BUs to shift focus towards more exploitation is quite an interesting observation and ambidexterity scholars also observed this response. Lavie et al. (2010) highlighted that often firms are compelled to shift towards either exploiting or exploring due to limited resources. They, however, indicated that getting the mix of the two approaches right and aligned to the context had sensitive consequences for the results. There, however, is a gap in the literature and to the appropriate mix of exploring and exploiting. The response from the BUs to exploit more when facing discontinuous external environmental change supports Luger et al.'s (2018) observation of the dynamic approach and responding to discontinuous external change by shifting towards exploitation and exploration in environments facing incremental change.

One respondent, however, did not agree with the more extreme measures that firms institute, especially when facing tough financial external environment changes. Respondent 1, in the quotation below, also restated from Section 5.2 for ease of reference, cautioned that some cost-cutting measures end up cutting out important exploratory activities that could help out during these tough times.

Respondent 1: *“So, I, I think that’s important and it’s sometimes, especially if a company is going through difficulties, like we are at the moment, that’s one of the first things that are stopped. It’s unfortunate because it doesn’t have to be a big thing that costs a lot of money.”*

It has been alluded to earlier that contemporary researchers urged for a dynamic approach that aligned to the external environment. In support of Respondent 1’s argument, scholars indicated that in practice, exploration and exploitation could be viewed as a continuum rather than a choice between discrete options (Kang & Snell, 2009; Lavie et al., 2010).

6.2.2 Conclusive findings for research question 1

The study findings concluded that BU ambidexterity is a complex construct to operationalise and due to this complexity, ambidextrous units deploy different approaches. The study results showed that the BU managers perceived that both BUs exploited existing knowledge and capabilities and explored new knowledge and capabilities through combined approaches. They used a combination of structural and contextual approaches. Respondents from both BUs, however, highlighted that although the BUs adopted a combination of structural and contextual approaches, the BUs identified more with the contextual ambidexterity approach.

An important research finding was the BUs’ dynamic approach to changes to the external environment. Both BUs were not following the traditional static approach of always aiming for a balance between exploitation and exploration activities within the BU. The BUs were exploiting more than exploring due to a tough macroeconomic external environment that prevailed. The BUs had shifted towards more exploitation activities. This study’s findings are well aligned with contemporary ambidexterity research that postulates that the degree of exploiting or exploring must be determined by the requisite response required towards an increasingly complex and changing external environment.

There, however, is a gap in the literature regarding the optimal levels of exploring or exploiting. This also then stresses the importance of this study in understanding managers’ perceptions of the approaches used to explore new knowledge and exploit existing knowledge and capabilities. Figure 3 shows a conceptual map that summarises how ambidexterity was understood within the BUs and it has been drawn up using the discussion insights. The figure

illustrates that the BUs are following a dynamic ambidexterity approach, as discussed, and this is in response to the external environment. The choice to exploit or explore is driven by the response required to the changes in the external environment.

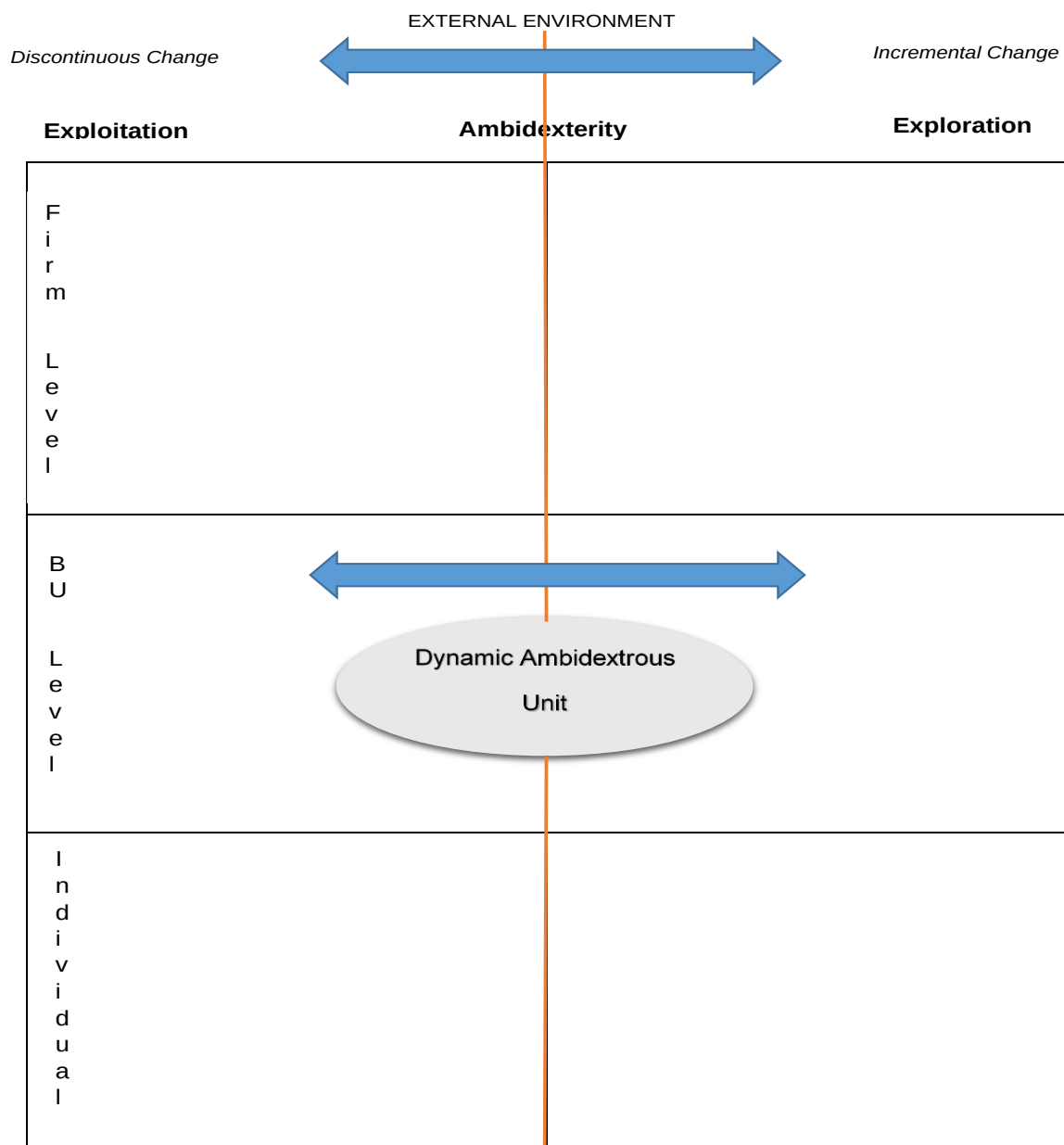


Figure 3: Summary Map of BU ambidexterity

6.3 Discussion of Results for Question 2

Research question 2: How is ambidexterity manifested within the BU?

Research question 2 sought to understand how ambidexterity was operationalised within the BUs. Extant literature on ambidexterity outlined that although there is a better understanding of the ambidexterity construct, there remains a gap in understanding the mechanisms to operationalise. Scholars indicated that operationalising ambidexterity within firms is a complex process (Kostopoulos et al., 2015; Lavie et al., 2010). This study responds to Fernández-Pérez de la Lastra et al.'s (2017) call for deeper empirical research that refines their three-path ambidexterity model.

This study focuses on a deeper understanding of their social mechanism pathway (path 2), as illustrated in Section 1.1, Figure 1. The pathway posits that specialist human capital could also be a source of BU and, consequently, firm-level ambidexterity through social capital mechanisms. The study's approach, as outlined in Section 4.1, therefore, followed a qualitative approach to get a deep empirical understanding of BU ambidexterity. The case study design was selected because it is best suited to answer "how" and "why" questions (Baxter & Jack, 2008). Part two of the semi-structured interview guide (Appendix 2) has the questions that explored Question 2. The participants were asked for their perceptions of the resources or capabilities used by the BUs to explore new knowledge and exploit existing knowledge.

The results of the transcription analysis process are highlighted in Section 4.8 and shown in the data. Appendix 4, code dictionary showed that based on the responses to all three questions, a total coding scheme with 5 categories, 12 sub-categories, and 128 codes emerged. The participants, however, perceived human capital, social capital, organisational capital, and human resources practice as critical resources through which ambidexterity was manifested within their BUs. These categories were represented by nine sub-categories and 111 codes. As alluded to earlier, the main focus of this study, however, is to explore Fernández-Pérez de la Lastra et al. (2017) social mechanism pathway deeper. The social capital mechanisms or pathways will be discussed when answering Question 3 of the study. This section will discuss the study's findings of how participants perceived the role of human capital, organisational capital, and human resources to the manifestation of BU ambidexterity.

6.3.1 Business unit ambidexterity based on human capital

The participants referenced human capital as an important element towards the manifestation of ambidexterity within their BUs. The results of these responses are shown in Section 5.5. The transcription analysis process resulted in a final coding scheme that had two sub-

categories and 37 codes (see Appendix 4). The categories were personal attributes and behaviours. Notably, this category had the highest new codes generated of the 37 codes, of which 30 were new codes generated inductively during the transcription process. Caution, however, must be taken in interpreting this result since due to the vast amount of ambidexterity literature, the researcher might not have captured all the insights that could have been captured deductively.

A large number of new codes could indicate the importance the study participants placed on the highlighted attributes towards the manifestation of ambidexterity within their contexts. Human capital was found in the literature as a desirable base from which to build a firm's ambidextrous capability. The calibre and motivation of a firm's employees are crucial antecedents of its strategic capabilities (Fu et al., 2017). Chang (2015) also concurred and argued that employees with higher knowledge, skills, and abilities are more likely to be ambidextrous.

The finding that the participants valued the contribution of human capital on the manifestation of ambidexterity within their BUs, however, goes against Fu et al.'s (2016) assertion that human capital played a more significant value in countries with an individualistic culture compared to countries with more collective cultures. This study was carried out in the South African context, which is collective in nature; however, the results suggest that human capital is still significant towards the development of ambidextrous capabilities at the BU level. This could be an area worth further exploring in future studies.

The results in Section 5.5, Tables 6 and 7 show that all participants referenced the sub-category personal attributes compared to behaviours that were referenced by seven participants. Further analysis of the coding results in Table 2, Appendix 6 shows the frequency of the quotation references for the human capital sub-categories codes. Most respondents referenced the following personal attributes, namely codes specialist, education, narrow experience, skills, communication skills, people skills, innovative, project management skills, and willingness to learn as the most important attributes that supported the development of ambidextrous BU capabilities.

It is important to note that the study's main objective is to explore in more depth Fernández-Pérez de la Lastra et al.'s (2017) ambidexterity through the social capital path of their model. Their model extended traditional models that limited the development of unit-level and firm-level ambidextrous capability to a generalist human capital base. They highlighted that specialist human capital could also generate firm ambidextrous capabilities through social

capital mechanisms and organisational capital infrastructure (paths 2 and 3, Section 1.1, Figure 1).

The participant sample, as shown in Section 4.3, therefore, consisted mostly of specialist managers with narrow experience and high education levels within their areas of specialisation. It, therefore, would be expected that the codes specialist, narrow experience, and education would be referenced by most participants. It is interesting to observe the result that participants referenced people skills, communication skills, willingness to learn, project management skills, and innovativeness the most. The participants could have referenced these social attributes as important together with the technical skills to address the known weaknesses of specialist teams.

Kang and Snell (2009) deliberated the value of specialist and generalist human capital. They posited that specialists generally have narrow entrenched functional bias and are inept at knowledge sharing, unlike generalists who are more varied in their approach and open to knowledge sharing. Participants 1 and 5 shared their views in the quotation highlighted in Section 5.4, as restated below for ease of reference. They acknowledge Kang and Snell's (2009) observation and agree that knowledge sharing and relationship building do not come naturally to some of the specialists in the BUs sampled.

Respondent 1: *"So, it's, it's not difficult for me, but I know for some of my colleagues it is challenging because they are already thinking about a million different things in their heads and they are sort of closed into their own worlds. So, you know, I think it's an effort for some of us. But for me it's okay. I think it's very important. I think it comes back exactly to that issue of respect."*

Respondent 5: *"So, getting that balance right for engineers specifically I think is difficult because we are in general more focused on the technical solution. We are not relationship-driven."*

The finding that social skills related codes were referenced by the participants together with technical skills is supported by Fu et al. (2017). The authors argued that while it is critical for firms building high-quality human capital to consider skill-enhancing practices, it was even more important to develop social capital or skills that encourage knowledge sharing and motivation. Chung (2015) also noted that BU ambidexterity is known to be achieved through generalists who are considered to be more adept and motivated to pursue conflicting opportunities. Through HRM efforts that increase employee skills, motivation, and adaptability, specialists, however, could also act as generalists in driving BU ambidexterity.

Subramaniam and Youndt (2005), in agreement to the observations, found that firms that did not focus on the social skills of their human capital might not realise the full potential of the efforts they put into developing them since the knowledge and skills attained will not be efficiently shared. Figure 4 shows the conceptual summary of how the respondents' perceived ambidexterity was manifested based on human capital and insights from the literature that were discussed. It, however, is important to highlight that the emergence of ambidextrous capability is a complex process that involves the integrative contribution of all the intellectual capital resources.

Kang and Snell (2009) argued that all intellectual capital elements are important for strong operational performance and postulated that if one is missing, then poorer outcomes must be expected. The process highlighted in the figure is only a partial part of the integrative picture explaining how BU ambidexterity could be manifested based on human capital. The other factors were considered separately, but these will be consolidated at the end to offer a combined picture or model on how participants answered all three questions since they all contribute to the understanding of the whole picture of how BU ambidexterity could be achieved within BU that have specialised human capital.

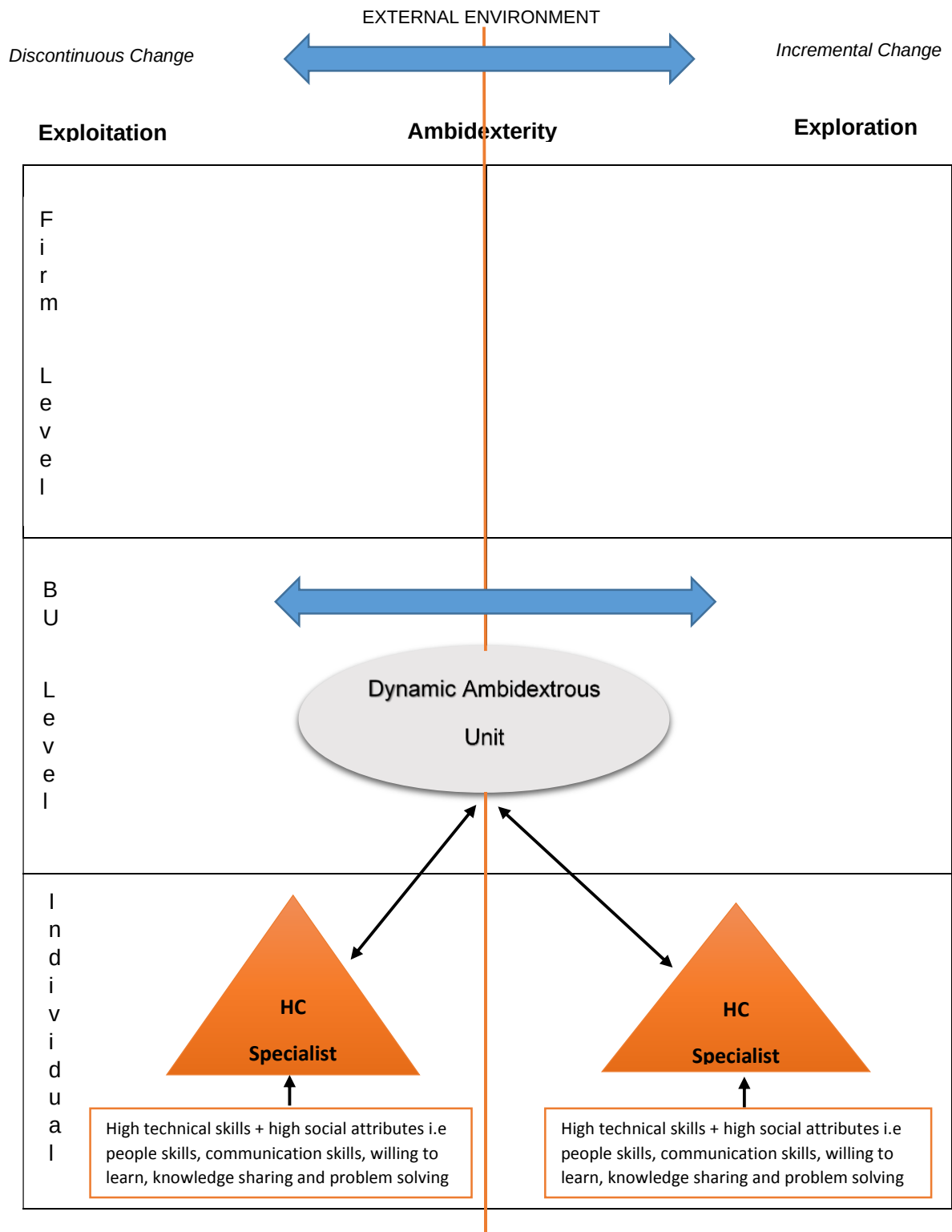


Figure 4: Summary Map of Ambidexterity Based on Human Capital

6.3.2 Ambidexterity through organisational capital infrastructure

The organisational capital category had only one sub-category and 11 codes that emerged after the transcription analysis process, as outlined in Section 4.8. Table 5, Appendix 6 shows that 11 of the 12 participants referenced the structures code. Respondents referenced the structures code and it appears that they perceived that BUs operated within and were influenced by the firm-level structures that prevailed. Respondent 9's quotation has been restated below for convenience. Respondent 9 highlighted that the case firm operates small teams and the firm has flat structures.

Respondent 9: *"It's really part of the heart of Case firm, I said earlier that we are very thin on the ground. You have very flat structure and there's no room for dead wood, there's no room for passengers."*

Fu et al. (2017) defined organisational capital as the knowledge embedded within a firm through its database systems, culture, and structures. The study results support the role of organisational capital in the emergence of ambidexterity at lower levels of the firm. Respondent 9, in the quotation above, refers to the flat structure and small teams as a firm-wide structure but influencing BU ambidexterity. This demonstrates its embeddedness.

Respondent 9 further alluded to the structure not having room for "dead wood", and this might entail that the structure was designed to facilitate agility. This finding could resonate with Kang and Snell (2009) who proposed organisational capital architectures of a mechanistic and organic capital. They posited that some firms with a mechanistic system encourage employees to follow rules and are inclined to be exploitation-orientated and, on the other side, organic systems encourage knowledge creation and exploration. It, therefore, is possible that the case firm structure is more inclined to facilitate exploration. A further result observed in the study was another quotation by Respondent 9 who alluded to the freedom employees enjoy within the case firm.

Respondent 9: *"People are allowed a lot of freedom in Case firm. But with freedom comes a lot of accountability and responsibility."*

6.3.3 Ambidexterity enabled through human resources practices

The human resources related codes emanated from participants' responses when asked for their perceptions of how ambidexterity was manifested within their BU. Based on the responses, the codes could be grouped into three sub-categories shown in Section 5.10, Table 21. The three sub-categories that emerged were individual development practices, employee

relation practices, and team development practices. Based on the data presented in Section 5.10, Tables 22 and 23, team development codes were referenced more than the codes related to employee relations practices and individual development practices. It would appear as if the respondents did not perceive them as critical within their context. Some strategic HRM scholars, however, have started to group their HR practices into skill, motivation, and opportunity-enhancing dimensions (Chang, 2015; Fu et al., 2017). Chang (2015) observed that skill-enhancing practices influenced human capital more, and the other two influenced employee motivation more. The study's finding that more respondents perceived team development efforts as more important than individual development efforts, therefore, does resonate with Chang's (2015) observation.

The data presented in Appendix 6, Table 6 show that the most referenced team development codes were cross-team collaborations with someone good at managing relationships, heterogeneous specialist team structure and team design aligned with strategy, team design aligned with strategy, doughnut team interaction structure, and selective staffing fit. The participants referenced more of the codes that were more related to the social interactions of the team and alignment of strategy, including selective staffing that complemented the strategy. This finding is also aligned with the trends currently observed within the HRM literature. Because of the new world of work that is more networked, there has been a shift in knowledge-based firms from relying only on their skill-based to now, also reliant on other inter-organisational resources (Swart & Kinnie, 2014).

Methot et al. (2018), in agreement with the study finding, noted that HRM scholars are moving away from human capital-focused HRM strategies to social capital-driven HRM strategies due to the changing new world of work that now demands access to networks of informal relationships inside and outside the firm. The increasing networked places require more cross-boundary working and, therefore, HRM will also require new models to respond (Swart & Kinnie, 2014). Notably, the code cross-team collaborations with someone good at managing relationships had the highest references.

HRM scholars have also indicated that bundles of human resources practices were more superior at influencing performance compared to single HRM practices (Chang 2015; Fu et al., 2017). These bundles are mostly aligned with the strategy. The participants also perceived the codes team designed aligned with strategy and selective staffing that was fit with team strategy as valuable in enabling BU ambidexterity. Chang (2015) defined bundles of strategic HRM practices that are aligned with strategy as HPWS. HPWS scholars have shown that these strategies are an antecedent to the emergence of ambidexterity (Chang, 2015; Fu et al., 2017).

Study participants also referenced the code doughnut team interaction structure. The code referred to how the team forestry BU was designed to allow for rapid collaborations across the unit's levels. The participants identified this HR practice as an enabler for the emergence of ambidexterity. It would also appear as if this was purposefully designed to encourage specialists to share knowledge readily. HPWS scholars have also noted that HPWS tend to encourage work efficiency hence, exploitation. To, therefore, be truly impactful, the HPWS working together within a strong collaborative social climate would facilitate knowledge exchange and transfer among the team (Chang, 2015).

Subramaniam and Youndt (2005) advised that firms must combine their efforts of hiring, training, work design, and other HRM activities, also focusing on developing their abilities to network, collaborate, and share information and knowledge. Scholars recognised that social capital was important for an individual's success and performance, therefore, it was important to help assist individuals to develop social capital (Anderson & Sun, 2015). These literature observations support the study results on the perceived importance of cross-team collaboration, selective staffing that is fit for the strategy, team design, and doughnut team interactions. Figure 5 is a conceptual map that summarises the discussion on how human resources facilitate the emergence of BU ambidexterity.

6.3.4 Conclusive findings for research question 2

The study results concluded that the manifestation of BU ambidexterity is a complex process that involves the combination of all three capitals. Participants' responses to the question of how ambidexterity is manifested in their BU resulted in manifestations through human capital, organisational capital, and facilitated through human resources systems. Figure 5 is a conceptual map of how the participants perceive ambidexterity emerges within their BU.

- Human capital

Participants regarded the following personal attributes as important in enabling the emergence of BU ambidextrous capacity based on specialist human capital: specialist, education, narrow experience, skills, communication skills, people skills, innovative, project management skills, and willingness to learn. It, however, is interesting to observe the result that people skills, communication skills, willingness to learn, project management skills, and innovativeness were referenced the most by participants. Participants referenced these social attributes as important together with the technical skills as a key combination of requisite skills that would enable ambidextrous capability development of the BU.

- Organisational capital

Participants referenced the structures code the most. Participants highlighted that the firm was structured with flat structures and small teams, and the employees were afforded freedom. It, therefore, is possible that the case firm structure was more inclined to facilitate exploration and creativity.

- Human resources

Team development codes were referenced more than the codes related to employee relations practices and individual development practices. Participants perceived team development efforts as more important than individual development efforts. The most referenced team development codes were cross-team collaborations with someone good at managing relationships, heterogeneous specialist team structure and team design aligned with strategy, team design aligned with strategy, doughnut team interaction structure, and selective staffing fit. The participants referenced more of the codes that were more related to the social interactions of the team and alignment of strategy, including selective staffing that complemented the strategy. Notably, the code cross-team collaborations with someone good at managing relationships had the highest references. Study participants also referenced the code doughnut team interaction structure. The code referred to how the team forestry BU was designed to allow for rapid collaborations across the unit's levels. The participants identified this HR practice as an enabler for the emergence of ambidexterity. It would also appear as if this was purposefully designed to encourage specialists to share knowledge readily.

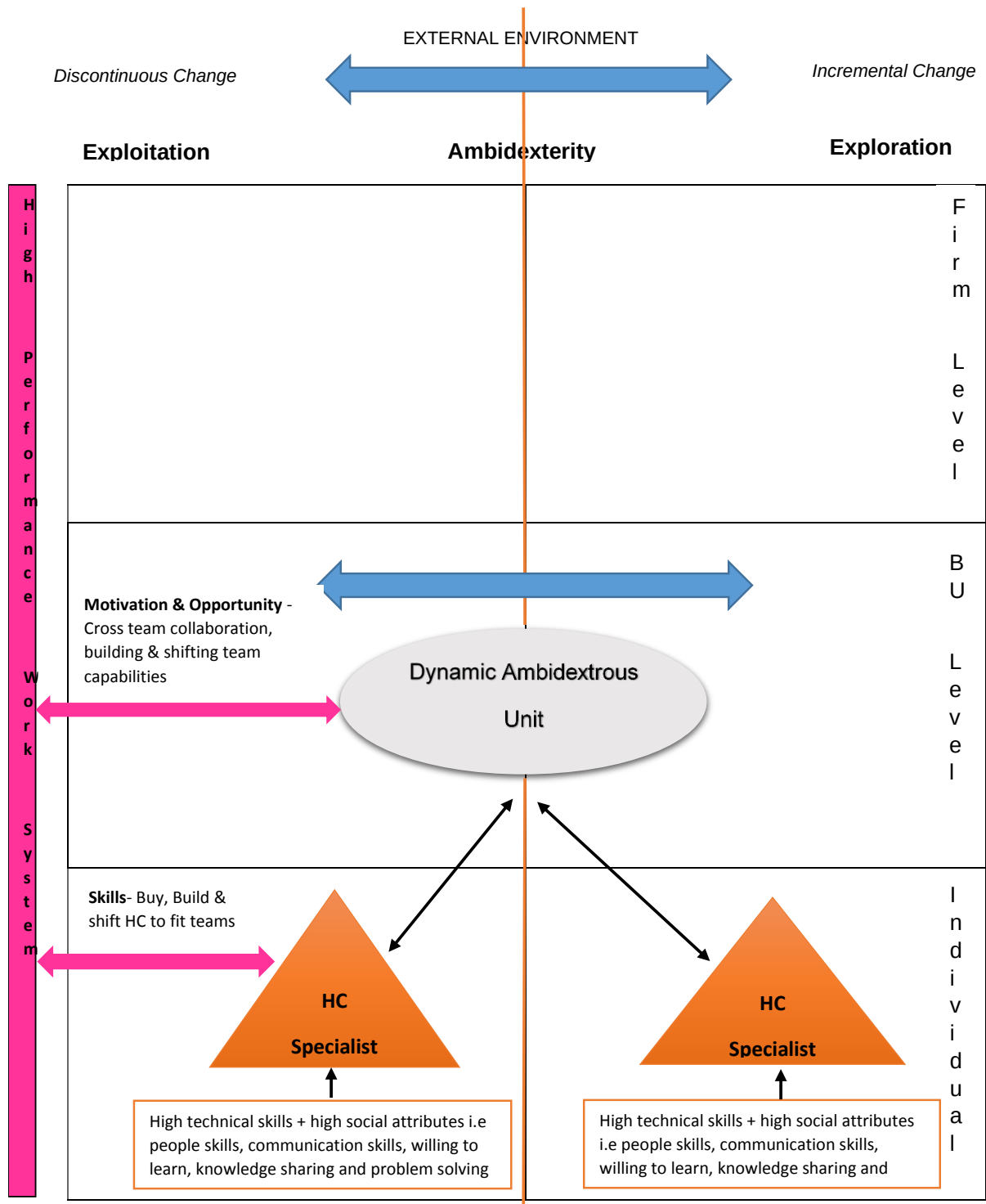


Figure 5: Summary Map of Ambidexterity Facilitated by Human Resources Systems

6.4 Discussion of Results for Question 3

Research question 3 sought to understand the BU social architectures and how they enabled the emergence of ambidexterity. The participants were asked questions that relate to their networks, whom they connected, how often and why they connected. These questions are found in part 3 of the semi-structured interview guide that can be referred to in Appendix 2. The results showing the participant responses to the questions are presented in Section 5.5. Three sub-categories and 47 codes emerged after the transcription analysis process. The sub-categories were the structural, relational, and cognitive social capital dimensions, as shown in Section 5.7 and Appendix 6, Tables 3 and 4.

The results in Section 5.7, Tables 15 and 16 show that most respondents referenced all three dimensions. The structural and relational dimensions, however, were referenced by all participants and the cognitive dimension by nine participants. The structural and relational codes were referenced the most by participants. Table 15 results show that senior managers referenced more the relational dimension compared to junior managers who referenced the structural dimension more than others. These results suggest that the participants perceived all three dimensions as important in their contribution towards the emergence of ambidexterity in their BUs. The study results show a similar trend to what scholars have observed in the literature. The literature review highlighted that the three dimensions of social capital complemented each other towards the emergence of ambidexterity within the firm (Fernández-Pérez de la Lastra et al., 2017; Kang & Snell, 2009; Nahapiet & Ghoshal, 1998; Subramaniam & Youndt, 2005; Tsai & Ghoshal, 1998). Tsai and Ghoshal (1998) also observed that of the three dimensions of social capital, social interaction, trustworthiness, and shared vision, were crucial to firm value creation.

RESEARCH QUESTION 3: What are the perceived social capital architectures that prevail within the BU and how do they enable the emergence of BU ambidexterity?

6.4.1 Structural dimension

The structural dimension code frequency was ranked, and the results are reported in Section 5.7, Table 17. The data shows that respondents referenced most the following codes: how do you reach them, internal networks, enablers of team ambidexterity, knowledge networks, strong network connections, and using tools for effective communication and decision making. The code, how do you reach them, was referenced the most. This code referred to the means through which the participants connected with their networks. From the participant quotations in Section 5.7, participants saw the value of engaging informally over and above the formal meetings. The participants also highlighted the preference of using social media, in particular,

WhatsApp in combination with verbal face-to-face conversations or by phone. For ease of reference, some of the relevant quotations reported in Section 5.5 are restated here.

Respondent 8: *“I wouldn’t say we always meet very formally, but we’ll meet each other in the kitchen and talk about a fire that happened or a pest and disease problem in the field or something like that. So, I think there is, there’s good network working.”*

Respondent 2: *“So, I think without WhatsApp, maybe in most of the companies I’ve worked or know, you and you want to talk about xx, but they would be a massive a massive impact on, not only production, but soon your availability because I mean now it’s not even three minutes since the breakdown happened I’m already talking to the artisan on the floor, and I know exactly what’s going on.”*

Respondent 12: *“It’s helping a lot also now you’ve got WhatsApp groups wherein you can talk to 10 people at the same time and if you want to take a decision it’s the same time thing, then it’s technology, it’s growing and it’s helping. It has made life much easier.”*

Bharati et al. (2015) agreed that social media enhances social capital dimensions. They argued that social media has helped to enhance social capital and had some positive impact on helping organisational efforts in knowledge management, subsequently, resulting in higher quality of organisational knowledge. According to Bharati et al. (2015), structural capital and cognitive capital are directly affected by social media whereas relational capital is indirectly affected by structural and cognitive capital. Respondent 2 and 12’s quotations above confirm Bharati et al.’s (2015) findings of the direct impact of social media on the quality of structural capital. The two respondents highlighted how WhatsApp has a major boost to the speed of networking and decision-making quality.

The participants from both BUs also referenced the code strong network connections and from the quotations in Section 5.7, they attributed the success of building strong networks to the individuals willing to learn and their interpersonal skills to develop such networks. Scholars also mentioned in the literature that there is a crucial link between human capital and social capital (Fernández-Pérez de la Lastra et al., 2017; Subramaniam & Youndt, 2005; Turner et al., 2015).

The participants did not only have strong networks, but these were mainly knowledge networks and mostly, internal networks. Chang (2015) attributed knowledge exchange and combination among experts to be facilitated by the social climate working in combination with the firm’s HRM strategies. The results also showed that there was much collaboration between individuals from other teams. The quotations below have been restated, as reported in Section

5.5. Respondent 7 and 10's quotations highlight a possible strong social climate, as alluded to by Chang (2015), which might have facilitated the strong networks within the BUs.

Respondent 7: *"There's a lot of collaboration between various departments, especially where there is overlapping just as a reference example between harvesting and silviculture."*

Respondent 10: *"It's companywide. I always say this, you have to have a friend in every department, so it doesn't matter. You might come across any, any type of problem in your day-to-day activities, you might have a problem with your vehicle. You might have a problem with the house you are staying in if it's a company house, it might be an issue on a payslip or ESS system or whatever may be."*

Chang (2015) further highlighted that a strong social climate offered a safe context that enabled skilled employees to execute and exchange knowledge, whereas a weak social climate negatively affected BU ambidexterity and affected information and knowledge exchange could cause cognitive dissonance among employees. The result that the participants perceived a strong internal knowledge network, therefore, might also reflect on the social climate that prevailed in the BUs.

The engineering BU participants, when asked about some of the networking barriers, pointed out some structural barriers that prevented them from sharing knowledge with other teams. Respondent 5's quotation highlights this best and has been restated from Section 5.7.

Respondent 5: *"So, I think that, that, that ability is good in the stature, but it is a challenge because we never, we never truly part of the team and I understand it that and it's, it's how it's going to be, it will always be like that."*

The participants were asked for their perception of which social capital dimensions they regarded as crucial for the development of ambidextrous capabilities within their BU. The code, enablers of ambidexterity, was also referenced by the majority of respondents. This result, in conjunction with the quotations in Section 5.7, shows that the participants perceived all three dimensions as crucial. They, however, indicated that the relational dimension, in particular, trust between individuals and the cognitive dimension, with particular reference to the shared vision, as the most relevant social capital dimensions that enabled the development of ambidextrous capabilities within the BUs. When asked to single out what they perceived as the most crucial dimension, trust was perceived as the most important. Some of the relevant quotations are restated below for ease of reference.

Respondent 10: *“Probably the shared vision is probably the most important and the trust and the networks are secondary, but still critical I think for business unit success.”*

Respondent 3: *“So, trust relational elements take, take the trophy. Yes. And it goes both ways.”*

Respondent 6: *“The trust is very important. So, that I think is extremely important. And then also the individual networks as well.”*

The study findings that participants singled out trust among the relational dimension and shared vision among the cognitive dimension as crucial enablers are supported by Tsai and Ghoshal's (1998) observations that the three dimensions of social capital, social interaction, trustworthiness, and shared vision were crucial to the firm's value creation. They also observed that the relational dimension, in particular, trustworthiness was significantly associated with structural and cognitive dimensions.

6.4.2 Relational dimension

The relational dimension codes were ranked according to the number of respondents who referenced them. Table 4, Appendix 6 shows the results. Most respondents referenced leadership practice, open-door culture to knowledge sharing, teamwork, culture, shared vision, connectedness, and trust. Leadership practices had the most references, and this was an important finding since this code was a new code that emerged inductively during the transcription analysis process described in Section 4.8. It is possible that the omission of the leadership codes during the deductive development of the initial coding scheme was due to the researcher not being able to go through the vast amount of available literature. It, however, might be a relevant addition to our understanding of how social capital enables BU ambidexterity within the study context.

The role of leadership in creating the required social climate that supports dynamic ambidextrous capabilities across the firm levels has not been focused on in the multilevel studies by Fernández-Pérez de la Lastra et al. (2017) and Kang and Snell (2009). The studies instead referred to how HRM systems and social capital could facilitate ambidextrous learning. There, therefore, might be a gap in the mechanisms of how managers could manage and create the requisite social climate that supports the emergence of dynamic capabilities. This strengthens the purpose of this study.

The results in Table 4, Appendix 6 highlight the leadership practices code was referenced by seven respondents and had the highest frequency of quotation references. Respondents 3, 9

and 10's quotations are restated from Section 5.7 to illustrate some of the leadership practices that the respondents viewed as enabling ambidexterity.

Respondent 3: *"So, that's the, that's what's really important to when we start from the manager's side. So that's what dictates the team. So, you enforce a trust relationship or a communication network or a, or a way of doing things."*

Respondent 9: *"Where they are allowed and encouraged to interact with each other and also then, with different specialists but also general management on, both the exploitation and exploring side. I think Case firm is managing to do it well."*

Respondent 10: *"Sometimes it's good to hear a different viewpoint because you might think of something I didn't think about that maybe that can work. Let's try it. And I always say, don't knock an idea before you've tried it. So, I never say no because when you say the same no and no people stop coming to you, they stop coming up with the ideas. They say why even bother they close up and say this guy is not going to give me a chance to say what I want to say."*

The respondents highlighted that the leaders directed the type of relationships that created an environment conducive for team performance, as highlighted by respondent 3. Leaders in the case of Respondent 10 encouraged listening to followers' viewpoints to encourage idea generation, and Respondent 9 encouraged team interaction. These study findings are significant and are highly supported by ambidextrous leadership literature. Rosing et al. (2011) argued that to drive ambidextrous capability there must be more than one leadership style to effectively apply in harmony to the contextual demands of the firm. They termed this style, ambidextrous leadership. Ambidextrous leaders should support their followers' attempts to be ambidextrous and lead shifts between exploitation and exploration aligned with the complex changes in the environment (Havermans et al., 2015; Rosing et al., 2011). Rosing et al. (2011) observed that ambidexterity leadership theories were aligned to contemporary dynamic ambidexterity constructs. They posited that ambidextrous leaders should display behaviours that foster exploration, exploitation, and the flexibility to switch between the two. To foster exploration, the leaders must increase variance by displaying what Rosing et al. (2011) referred to as opening behaviours, and to foster exploitation, they must display the behaviours that support variance reduction or closing behaviours. The opening and closing behaviours by Rosing et al. (2011), shown in Section 2.8, Table 1, support the leader behaviours identified by participants.

Most of the participants from both BUs referenced the open-door culture, teamwork connectedness, and trust as important enablers of BU ambidexterity. This data, together with

the quotations highlighted in Section 5.5, suggest that a strong social climate prevailed within the BUs. It appears positive energy is created by sharing knowledge and this seemed to be happening informally in corridors and open-plan offices. The forestry respondents referenced a culture of engaging in robust and frank debates and this might have been made possible by an environment of psychological safety created within the BU. Respondents 10 and 11's quotations are restated below to illustrate this.

Respondent 10: *"We can be frank with each other. We can say exactly how we feel about it. See how I agree. I disagree and we debate, and we have discussions. At the end of the day, we make a collective decision."*

Respondent 11: *"I must be able to voice my opinion and I must be able have the trust that it will be taken in a constructive manner."*

The finding of knowledge sharing through informal networks is supported by Methot et al. (2018) who argued that the new networked world of work now demands access to networks of informal relationships inside and outside the firm. Swart and Kinnie (2014) also observed that in this new world of work, focus on building relationships and, more so, team-based effectiveness will dominate the focus. Their observation is aligned with this study's finding of how participants perceive the importance of teamwork, connectedness, trust, and open-door culture. It appears all these elements highlight a strong corporative social climate prevailed in the BUs and, therefore, facilitated the emergence of ambidextrous capabilities.

The data for the participants' responses to questions regarding their perceptions of the cognitive dimension of social capital is presented in Section 5.7, Table 18. The codes were ranked according to the number of participants that referenced the code. Shared codes and language was the most referenced code of the cognitive dimension sub-category. It appears also from the participants' quotations that they valued having a shared collective agenda rather than an individualistic agenda and this might have brought a shared collective agenda for the team. This study's findings of the BUs referencing strong network connections, trust, and shared codes and language are supported by Tsai and Ghoshal (1998). They observed that the three dimensions of social capital, social interaction, trustworthiness, and shared vision were crucial to firm value creation. The study's findings are further supported by organisational learning scholars who acknowledged that the three dimensions of social capital complemented each other towards the emergence of ambidexterity within the firm (Fernández-Pérez de la Lastra et al., 2017; Kang & Snell, 2009; Nahapiet & Ghoshal, 1998; Subramaniam & Youndt, 2005; Tsai & Ghoshal, 1998).

6.4.3 Conclusive findings for research question 3

The results showed that participants perceived the three social capital dimensions (structural, relational and cognitive) as important and complemented each other towards the emergence of ambidexterity in their BUs. Study participants referenced most the following structural dimension codes: how do you reach them, internal networks, enablers of team ambidexterity, knowledge networks, strong network connections, and using tools for effective communication and decision making. The code that referred to the means participants used to reach out to their network was referenced the most of all structural dimension codes. Participants saw the value of engaging informally over and above the formal meetings. The participants also highlighted the preference of using social media and, in particular, WhatsApp in combination with verbal face-to-face conversations or by phone.

Social media affects the quality of structural capital. This was observed in the study as participants highlighted how WhatsApp has a major boost to the speed of networking and improved decision-making quality. Participants perceived strong internal knowledge networks as enabling the development of ambidextrous capabilities within BUs. The results also showed that there was much collaboration between individuals from other teams. A strong social climate facilitated knowledge exchange and collaborations, and this might, in turn, have strengthened the individual networks.

The most referenced relational dimension codes were leadership practice, open-door culture to knowledge sharing, teamwork, culture, shared vision, connectedness, and trust. Leadership practices were perceived as an important enabler of BU ambidexterity. This was a significant finding since there is a gap in the mechanisms through which managers could manage and create the requisite social climate that supports the emergence of dynamic capabilities, and this study's results help to understand this better. Participants highlighted that leaders directed the type of relationships that created an environment conducive for team performance. The participants highlighted the leader behaviours such as encouraged listening of followers' viewpoints to encourage idea generation or encouraging team interaction assisted in encouraging performance. The study's observation on leader behaviours is aligned to ambidexterity leadership theories. They posited that ambidextrous leaders should display behaviours that foster exploration, exploitation, and the flexibility to switch between the two.

A strong social climate prevailed within the BUs. It appears positive energy is created by sharing knowledge and this seemed to be happening informally in corridors and open-plan offices. The forestry participants referenced a culture of engaging in robust and frank debates and this might have been made possible by an environment of psychological safety created

within the BUs. Participants highlighted the importance of teamwork, connectedness, trust, and open-door culture. It appears all these elements highlight that a strong corporative social climate prevailed in the BUs and, therefore, facilitated the emergence of ambidextrous capabilities. It appears also from the participants' quotations that they valued having a shared collective agenda rather than an individualistic agenda, and this might have brought a shared collective agenda for the team.

Collectively, the BU participants perceived that strong network connections, trust, and shared codes and language were the most critical social capital dimensions that enabled the emergence of ambidexterity within their BUs. When asked to single out what they perceived to be the single most crucial dimension, trust was perceived as the most important. Figure 6 gives a conceptual summary of how social capital enables the emergence of BU dynamic ambidexterity together with the interaction with human capital.

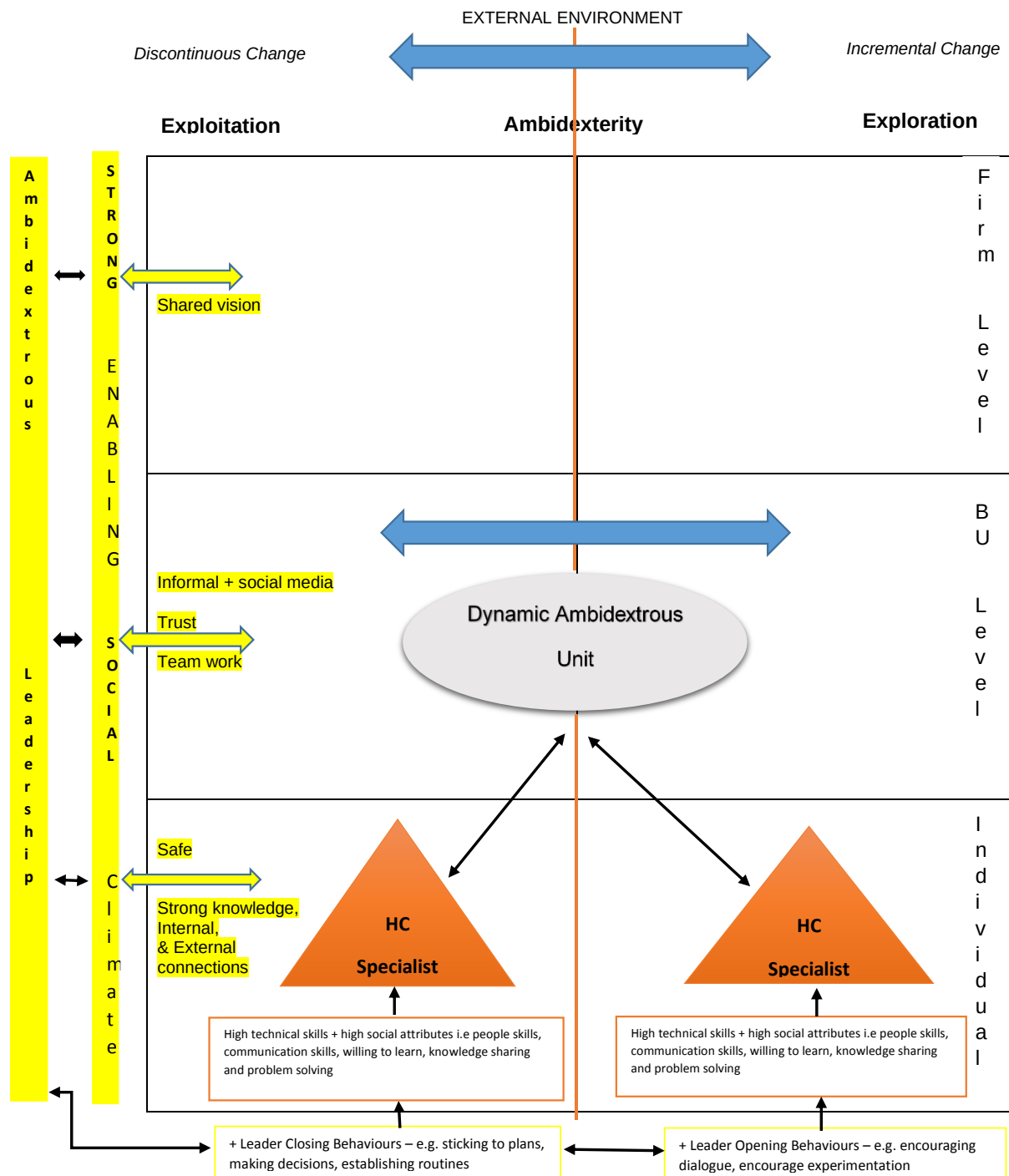


Figure 6: Summary Map of ambidexterity through social capital

CHAPTER 7: CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

The chapter brings together the findings of this study. The findings are consolidated into an original conceptual diagram in Figure 7. The chapter details how the themes were brought together to explain the study's findings on the mechanisms involved to enable the emergence of BU ambidexterity through social capital within the study context. Recommendations based on the findings are made to managers, suggestions for future research are given, and the limitations of the research are discussed.

7.2 Principal Findings

7.2.1 Development of the model

The development of the conceptual model shown in Figure 7 started with a review of the literature summarised in Chapter 2. The need for the study was informed by the call for deeper empirical research that explored the pathway through which BUs' ambidextrous capabilities emerge from specialist human capital through social capital mechanisms. Initial themes were developed deductively from the literature and further advanced inductively in Chapter 4 during the transcription of the data. The data were reported in Chapter 5 and then discussed, analysed, and summarised in steps according to the themes in the sections 6.2.2, 6.3.4, and 6.4.2. The conceptual map was built as the themes were discussed.

This study explored how specialist human capital could be a source of BU ambidexterity through social mechanisms. The study's findings highlight that BU ambidexterity is a complex construct to operationalise; therefore, many ambidextrous units deploy various complex combinations of resources. The model, however, attempts to operationalise the main constructs involved in making specialist human capital a source of BU ambidexterity. These constructs are BU ambidexterity, human capital, social capital, organisational capital, and human resources practices. The model synthesises the inputs or mechanisms into the individual or human capital level, BU level associated with social capital mechanisms, the firm's level associated with organisational capital, and overarching human resources practices that span all three levels in facilitating ambidexterity.

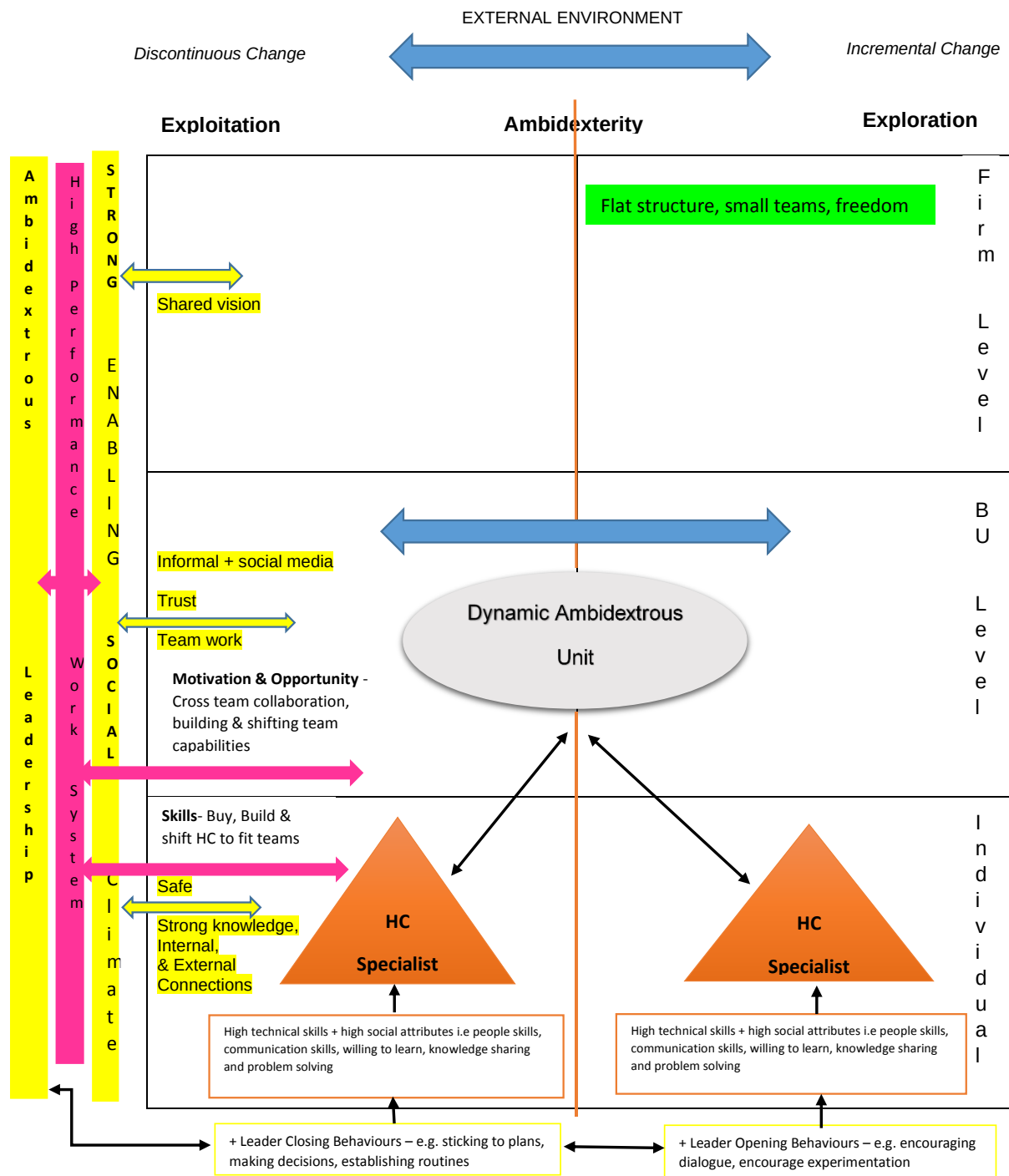


Figure 7: Summary Map of Ambidexterity Based on Human Capital

7.2.2 Ambidexterity

This study's findings concluded that BU ambidexterity is a complex construct to operationalise and due to this complexity, ambidextrous units deploy different approaches. An important finding is the BUs dynamic approach to changes in the external environment. The model moves beyond the traditional static approach of always aiming for a balance between

exploitation and exploration activities within the BU. The study's findings are well aligned with contemporary ambidexterity research that postulates that the degree of exploiting or exploring must be determined by the requisite response required towards an increasingly complex and changing external environment. The model, therefore, caters for a continuum of different possible combinations of exploitation and exploration.

The BU dynamically shifts towards either exploration or exploitation in response to and to align with the changes in the external environment. Discontinuous changes in the environment will trigger the BU towards the exploitation side, and normal incremental change environment will trigger more exploration responses by the BU. There, however, is a gap in the literature regarding the optimal levels of exploring or exploiting the different environments.

7.2.3 Human capital

The premise of the model is the specialist human capital. The study identified that a combination of high technical skills and high social skills is an important antecedent to the successful building of BU ambidexterity. The study identified important attributes, namely specialist education, narrow experience, technical skills, communication skills, people skills, innovativeness, project management skills, and a willingness to learn. The combination of the social and technical skills together makes a key combination of requisite skills that will enable ambidextrous capability development of the BU.

7.2.4 Organisational capital

At the firm level, supportive structures create an environment conducive for knowledge exchange and sharing. Flat structures, small teams, and freedom were identified as enabling BU ambidextrous capabilities.

7.2.5 Human resources

HRM strategy that is aligned with the creation of BU ambidextrous capabilities facilitates the development of these capabilities. The study identified HPWS that focused more on a combination of human and social capital-driven strategies. The study identified the following employee relations and individual development practices as critical processes of HPWS: cross-team collaborations, heterogeneous specialist team structure, doughnut team interaction structure, and selective staffing fit. The study highlighted more emphasis on social capital strategies that focused on the social interactions of the team, including selective staffing that complemented the strategy. The doughnut structure approach was designed to allow for rapid collaborations across the unit levels.

The study identified this HR practice as an enabler for the emergence of ambidexterity. The model, therefore, highlights that at the BU level, the HPWS drives the motivation and opportunity-enhancing processes that include cross-team collaboration, building, and shifting team capabilities, and on the individual human capital level, the HPWS drives skill-enhancing processes that include buying, building, and shifting human capital aligned with strategy.

7.2.6 Social capital

The study concluded that all three social capital dimensions (structural, relational and cognitive) as important and complement each other towards the emergence of ambidexterity in their BUs. The model works on the notion that a strong social climate supports the development of BU ambidextrous capability through facilitating knowledge exchange and collaboration. The following structural dimension elements were found as important in facilitating the development of BU ambidextrous capabilities: how do you reach them, internal networks, enablers of team ambidexterity, knowledge networks, strong network connections, and using tools for effective communication and decision making.

Social media and, in particular, WhatsApp in combination with verbal face-to-face conversations or by phone are some of the preferred modes of communication identified to improve knowledge and information-sharing. Social media affects the quality of structural capital. The study identified that WhatsApp improved the speed of networking and decision-making quality. Strong internal knowledge networks are perceived to enable the development of ambidextrous capabilities within BUs. The study also showed that there was much collaboration between individuals from other teams. The combination of strong internal knowledge networks, collaborations facilitated with a combination of using social media, in particular, WhatsApp, face-to-face verbal conversations or by phone created a strong collaborative and networked social climate. A strong social climate facilitated knowledge exchange and collaborations, and this might, in turn, have strengthened the individual networks.

An important conclusion of the study was that the code, leadership practices, was perceived as an important enabler of BU ambidexterity. There is a gap in the mechanisms through which managers could manage and create the requisite social climate that supports the emergence of dynamic capabilities, and this study's results help to understand this better. The model shows that leaders directed the type of relationships that created an environment conducive for team performance. The study identified that leader behaviours such as encouraging listening of followers' viewpoints to encourage idea generation or encouraging team

interaction assisted in encouraging follower behaviour. Leaders should display behaviours that encourage exploration, exploitation, and the flexibility to switch between the two.

A strong social climate prevailed within the BUs. It appears positive energy is created by sharing knowledge and this seemed to be happening informally in corridors and open-plan offices. A culture of engaging in robust and frank debates is encouraged and this might have been made possible by an environment of psychological safety created within the BU. Participants highlighted the importance of teamwork, connectedness, trust, and open-door culture. It appears all these elements highlight that a strong corporative social climate prevailed in the BUs and, therefore, facilitated the emergence of ambidextrous capabilities. Collectively, the model summarises that strong network connections, trust, and shared codes and language are the most critical social capital dimensions that enabled the emergence of ambidexterity within the BUs. Trust, however, is perceived as the most important in facilitating the emergence of BU ambidexterity.

7.3 Recommendations for Managers

The study has highlighted that operationalising BU ambidexterity is a complex process. Attaining BU ambidextrous capability is a desirable achievement. It is even more desirable now than ever before due to the increasingly complex environments with which firms must contend. Firm response and alignment to the environment will yield the best long-term results and could even avert firm obsolescence. It is important to note that the traditional static ambidexterity approach is no longer relevant, but the contemporary dynamic approach offers a solution and is worth building the capabilities within the BUs. The model developed by the study could be used to guide how to operationalise creating ambidextrous BU capabilities based on specialist human capital and through social capital mechanisms.

It is recommended that managers use the study to develop BU ambidexterity from specialist human capital to create BU ambidextrous capability. Some of the recommended processes to consider are highlighted below.

- Managers must be aware that this is an integrated model that requires all the identified resources to complement each other. An important point to note, however, is that “firms do not perform but it is the people who perform”. It, therefore, is important to invest in the human capital element to create a solid foundation on which to build the capabilities. It is recommended that a combination of high technical skills and high social attributes are critical for success.

- Creating a strong cooperative social climate is critical. This might be the most critical aspect where the managers could have a lot of influence. It is recommended that all three social capital dimensions are important, as creating strong internal knowledge networks and a safe environment allows for better teamwork, collaboration, and it reinforces the strong social climate.
- Managers are recommended to adopt a variety of leadership styles to create the requisite follower behaviour that responds to the needs of the external environment to either exploit or explore. The leadership behaviours can either be exercised by one individual or shared by a group of leaders.

7.4 Recommendations for Future Research

There has been little research on how to operationalise ambidexterity at lower levels; therefore, follow-up future empirical studies further exploring how BU ambidexterity is enabled based on specialist human capital and through social capital mechanisms but in the following contexts is recommended:

- In a different industry or different cultural setting: This study was carried out in South Africa. Other research findings concluded that human capital elements might be more important in areas with individualistic cultures and less important in collective cultures. This study did not experience this, as the human capital was still relevant, and more studies should explore this further.
- A longitudinal study that will bring forth insights on how, over time, the dynamics will differ to a cross-sectional study; or
- A quantitative study.

7.5 Research Limitations

- The ambidexterity field is vast with much literature. It, therefore, is possible that the researcher might not have gone through all the relevant literature and, therefore, some of the research findings might have already been established.
- The findings of the study will be difficult to generalise outside the case context.
- The researcher was not trained to interview, which might have affected the data collected.
- The ambidexterity constructs are complex and, therefore, might be difficult to get the same understanding across all the interviews. Although an effort was made to maintain uniformity of understanding, it, however, might still be a limitation.

7.6 Conclusion

This study was a response to a call for empirical research that explores deeper one of the pathways of the three-path ambidexterity model. The study explored how specialist human capital could be the source of BU ambidexterity through social capital mechanisms. There is little research done on how to operationalise ambidexterity at the lower levels of organisations. To gain a deeper understanding of the mechanisms, the study followed a qualitative case study design. Twelve specialist managers from two BUs involved in high levels of exploration and exploitation were interviewed. The research findings were analysed, and an integrated model developed. It is hoped that managers will use the model to operationalise creating BU ambidextrous capabilities from specialist human capital.

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APPENDICES

APPENDIX 1: Consent form

I am currently a student at the University of Pretoria's Gordon Institute of Business Science and completing my research in partial fulfilment of an MBA.

I am researching exploring the social capital architectures that enable the emergence of ambidexterity within the business unit. Our interview is expected to last about an hour and will help us understand the underlying mechanisms of how ambidexterity is achieved within business units, with particular reference on how social capital architectures enable the emergence of ambidexterity. The information that you will be required to provide is around your understanding of the ambidexterity and social capital constructs and how they are manifested within your business unit.

There are no costs for participation except for the cost of time to participate in the interview. The benefits of participation are the deeper understanding gained of the underlying mechanisms that enable the emergence of ambidexterity in business units. This insight will help managers to understand how to stimulate ambidextrous capabilities within their business units and contend with the increasing complexity faced by firms today. Your participation is voluntary, and you can withdraw at any time without penalty. All data will be reported without identifiers.

Any information obtained regarding this study and that can be identified with you will remain confidential. Your anonymity and confidentiality are assured. Extracts from this research could be used as a contribution toward academic journal articles, books, etc. If you have any concerns, please contact me or my supervisor. Our details are provided below.

Researcher name: Kudakwashe Cletton Phairah

Email: kudaphairah77@gmail.com

Phone: +27 82 8859234

Researcher Supervisor's name: Dr Richard Meissner

Email: rmeissner@csir.co.za

Phone: +27 71 617 6262

Signature of participant: _____ Date: _____

Signature of researcher: _____ Date: _____

APPENDIX 2: Semi-structured interview guide

Part 1: Introduction

- Interview date
- Introduction to the study and constructs, intended purpose of the interview and informed consent
Exploitation – production, efficiency, execution, implementation, refinement, choice
Exploration – experimentation, risk-taking, discovery, innovation, flexibility, play
Social capital – network density, collaboration, share knowledge, communication network, trust, knowledge access, shared code/ethos, expectations & obligations
- Business unit of interviewee and its function in the organisation
- Academic and experiential qualifications of interviewee
- Number of years the interviewee has been with the company and the BU

Part 2: Business unit ambidexterity

Research Question 1: How is ambidexterity understood within the BU?

- Please explain how the BU can exploit existing capabilities and explore new knowledge or capabilities to ensure the organisation has long-term superior performance over its competitors.
- **Follow-up question:** How are the BU management structures, business processes, reporting lines designed regarding exploration and exploitation activities within the BU? Please elaborate.
- Describe your role in the BU and your involvement with the exploit and explore activities.
- Please elaborate on the critical personal attributes that new incumbents must possess if they are to be a good fit to ensure long-term success of the BU and organisation.

Research Question 2: How is ambidexterity manifested within the BU?

- What resources and capabilities are required for the BU to develop ambidextrous capabilities?
Follow-up question: How are these resources and capabilities sourced, how are they structured and how do they develop?
Follow-up question: Are there resources or capabilities lacking from the business unit to support the above, if so, how are the deficiencies managed?

Part 3: Social capital architectures

Research Question 3: What are the perceived social capital architectures that prevail within the BU and how do they enable the emergence of BU ambidexterity?

- Describe the type of relationships and how individuals in your BU network collaborate and share knowledge.
- At an individual level, who do you reach out to for advice/information/knowledge or collaborate with to execute your work and how often do you reach out to them and how?
- Please give an example of when and how you used/use your network to execute your work and how is this important?
- **Follow-up question:** Are there any expectations by yourself or your other team members on the level of collaboration or quality of networking when executing work projects? Do you share the same vision or work ethos? If so, please elaborate.
- Do you feel the way and level of cooperation within the BU contributes to the BU's success in not only achieving its objective but enabling the organisation to be successful in the long run with a competitive edge over its competition?

Follow-up question: What aspects of this networking and relationships work or do not work for you and BU?

- Following your understanding of how individuals within the BU network, collaborate and share knowledge, do you think this embedded BU social capital enables the development of ambidextrous BU capability? Please elaborate.
- Do you think other BUs within the organisation experience similar outcomes as explained above? Please elaborate.
- Between the strength of individual networks (structural), trust relations between individuals or group (relational), and shared vision or code (cognitive), which of these do you perceive as the most important in enabling the development of ambidextrous capability within the BU based on your understanding of social capital architectures?

Allow time for closing discussion – 10 min

Total estimated running time - 40 – 52 min

Conclusion of the Interview

- Thank interviewee for the time and effort

APPENDIX 3: Ethical clearance letter



17 July 2019

Phairah Kudakwashe

Dear Kudakwashe

Please be advised that your application for Ethical Clearance has been approved.

You are therefore allowed to continue collecting your data.

Please note that approval is granted based on the methodology and research instruments provided in the application. If there is any deviation change or addition to the research method or tools, a supplementary application for approval must be obtained

We wish you everything of the best for the rest of the project.

Kind Regards

GIBS MBA Research Ethical Clearance Committee

APPENDIX 4: Code dictionary

Document Group	Code	Comment	Modified by
Personal Attributes	HCP-Adaptability HCP-ambidextrous HCP-Ambitious HCP-Big picture HCP-Communication skills HCP-Crucial conversation skills HCP-Driven HCP-Education HCP-Expert HCP-Friendliness HCP-Hardworking HCP-Innovative HCP-integrity HCP-Narrow experience HCP-Passion for forestry and research HCP-People skills HCP-Project management skills HCP-Responsibility HCP-Right attitude HCP-Skills HCP-social and networking capacity HCP-Specialist HCP-Structures and time management HCP-Team player HCP-use of Information technology HCP-Willingness to Learn HCP-Work independently	Personality traits of an individual	K Phairah
Behaviours	HCB- Caring for other team members HCB- introverted specialist HCB-Cooperative HCB-Disciplined HCB-Knowledge sharing HCB-Loyalty to company HCB-Personality conflict HCB-Problem solving HCB-Thinker HCB-Treating everyone the same	individual conduct	K Phairah

Document Group	Code	Comment	Modified by
Organisational design	OCD-Different Business Unit dynamics OCD-freedom OCD-Job design OCD-Norms OCD-Open plan offices OCD-Performance appraisal OCD-Small Business unit teams with specialist knowledge OCD-Structures OCD-Supervision OCD-Timing of information OCD-weak control environment - procedural discipline	Organisational design referred to as the means through which organisation executes its strategy and design elements include structure, technology, strategy, culture, human resources systems, and management processes	K Phairah
Social capital cognitive dimension	SCC-Norms and sanctions SCC-Shared codes and language SCC-Shared narratives SCC-Shared system of understanding SCC-Shared systems of meaning SCC-shared technical and operational knowledge	Kang & Snell (2009) definition "cognitive dimension of social capital highlights the importance of shared systems of meaning, representation, and understanding among individuals" (p.69)	K Phairah
Social capital structural dimension	SCS- Enablers of team ambidexterity SCS- How do you reach them SCS- Informal communication whats app, short phone call SCS- using tools for effective communication and decision making SCS-flat structure with some organised hierarchy SCS-Formal communication written, email SCS-Global networks SCS-Internal networks SCS-Knowledge networks SCS-Network configuration SCS-Network ties SCS-Strong network connections SCS-Structural barriers to collaboration SCS-Who do you reach	Kang & Snell (2009) definition "The structural dimension of social capital refers to the overall network configuration or pattern of connections among individuals" (p.69)	K Phairah

Document Group	Code	Comment	Modified by
Social capital relational dimension	SCL-leadership practice SCR- Open door culture to knowledge sharing SCR- Stakeholder buy in SCR-After work get together SCR-Balance of introverts and extroverts SCR-But we also involve various stakeholders SCR-Candid debate SCR-conflicting non-aligned interests SCR-Connectedness SCR-Culture SCR-Discourage use of emails but face to face communication SCR-Dynamic SCR-Expectation SCR-Friendship SCR-Giving credit to team members SCR-Hierarchy boss subordinate dynamics SCR-Individual trust SCR-Institutional trust SCR-Psychological safety SCR-Relational embeddedness SCR-Respect SCR-Shared vision SCR-Structured Field days encouraging introverts to communicate SCR-Team composition networker SCR-Team work SCR-Trust SCR-young guys flourishing in a freer and open environment	Kang & Snell (2009) definition relational "dimension addresses the relational aspects of interpersonal exchange (i.e. trust, motives, expectations, and norms) among individuals" (p.69)	K Phairah
Team ambidexterity	ATM-Contextual ambidexterity ATM-Paradox challenges ATM-Pressing short-term exploitation needs take precedence over longer term exploration activities ATM-Priorities in difficult times ATM-Structural ambidexterity	Team ambidexterity as defined by Kostopoulos, Bozionelos & Syrigos (2015, p. 11) as "the ability of a unit to pursue exploratory and exploitative activities in a concurrent manner"	K Phairah

Document Group	Code	Comment	Modified by
Exploration	AXR- New Radical innovation AXR-Alternatives AXR-Balancing short term and Long term AXR-External ideas and resources AXR-Internal ideas and resources AXR-Limited exploration due to tough macroeconomic environment AXR-Searching and experimentation	Exploitation includes things captured by terms such as "search, variation, risk taking, experimentation, play, flexibility, discovery, innovation" (March, 1991: 71)	K Phairah
Exploitation	AXT- speed of execution many incremental improvements AXT-Efficiency AXT-focus on exploitation in response to tough macroeconomic environment AXT-Improvement AXT-Production	Exploitation includes things captured by terms such as "refinement, choice, production, efficiency, selection, implementation, execution" (March, 1992, p.* 71).	K Phairah
Team development practices	HRT- technical panel of diverse specialists supporting operations HRT-Balance of technical skills and relationship skills HRT-Cross team collaboration requires someone good at managing relationships HRT-Diversity HRT-Doughnut team interaction structure HRT-Heterogeneous specialist team structure HRT-personal relationship building culture HRT-Selective staffing -fit HRT-Staff turnover HRT-Team design aligned with strategy HRT-Team training and development	Human resources strategies that target building team skills	K Phairah
Employee relations practices	HRR- Career development HRR- Training HRR-Socialisation	Methot, Rosado-Solomon & Allen (2018) definition the human resources practices that focus on the "development of relationships and exchanges inside	K Phairah

Document Group	Code	Comment	Modified by
		and outside the organisation”(p.723)	
Individual development practices	HRI-individual ability to wear different hats HRI-Career development	Human resources practices that target building individual skills	K Phairah

APPENDIX 5: Frequency of code references

	new codes	
	initial codes	
Code	Grounded	Code Groups
• ATM-Contextual ambidexterity	30	Team ambidexterity
• ATM-Paradox challenges	19	Team ambidexterity
• ATM-Pressing short term exploitation needs take precedence over longer term exploration activities	2	Team ambidexterity
• ATM-Priorities in difficult times	1	Team ambidexterity
• ATM-Structural ambidexterity	8	Team ambidexterity
• AXR- New Radical innovation	9	Exploration
• AXR-Alternatives	1	Exploration
• AXR-Balancing short term and Long term	6	Exploration
• AXR-External ideas and resources	15	Exploration
• AXR-Internal ideas and resources	4	Exploration
• AXR-Limited exploration due to tough macroeconomic environment	3	Exploration
• AXR-Searching and experimentation	22	Exploration
• AXT- speed of execution many incremental improvements	3	Exploitation
• AXT-Efficiency	10	Exploitation
• AXT-focus on exploitation in response to tough macroeconomic environment	6	Exploitation
• AXT-Improvement	24	Exploitation
• AXT-Production	9	Exploitation
• HCB- Caring for other team members	1	Behaviours
• HCB- introverted specialist	5	Behaviours
• HCB-Cooperative	2	Behaviours

●	HCB-Disciplined	1	Behaviours
●	HCB-Knowledge sharing	4	Behaviours
●	HCB-Loyalty to company	1	Behaviours
●	HCB-Personality conflict	1	Behaviours
●	HCB-Problem solving	3	Behaviours
●	HCB-Thinker	1	Behaviours
●	HCB-Treating everyone the same	1	Behaviours
●	HCP-Adaptability	3	Personal Attributes
●	HCP-ambidextrous	1	Personal Attributes
●	HCP-Ambitious	2	Personal Attributes
●	HCP-Big picture	1	Personal Attributes
●	HCP-Communication skills	12	Personal Attributes
●	HCP-Crucial conversation skills	5	Personal Attributes
●	HCP-Driven	4	Personal Attributes
●	HCP-Education	13	Personal Attributes
●	HCP-Expert	1	Personal Attributes
●	HCP-Friendliness	1	Personal Attributes
●	HCP-Hardworking	2	Personal Attributes
●	HCP-Innovative	5	Personal Attributes
●	HCP-integrity	9	Personal Attributes
●	HCP-Narrow experience	11	Personal Attributes
●	HCP-Passion for forestry and research	1	Personal Attributes
●	HCP-People skills	15	Personal Attributes
●	HCP-Project management skills	5	Personal Attributes
●	HCP-Responsibility	1	Personal Attributes
●	HCP-Right attitude	2	Personal Attributes
●	HCP-Skills	14	Personal Attributes

● HCP-social and networking capacity	4	Personal Attributes
● HCP-Specialist	14	Personal Attributes
● HCP-Structures and time management	2	Personal Attributes
● HCP-Team player	7	Personal Attributes
● HCP-use of Information technology	3	Personal Attributes
● HCP-Willingness to Learn	5	Personal Attributes
● HCP-Work independently	2	Personal Attributes
● HRI - individual ability to wear different hats	2	Individual development practices
● HRI-Career development	2	Individual development practices
● HRR- Career development	2	Employee relations practices
● HRR- Training	2	Employee relations practices
● HRR-Socialisation	1	Employee relations practices
● HRT- technical panel of diverse specialists supporting operations	9	Team development practices
● HRT-Balance of technical skills and relationship skills	1	Team development practices
● HRT-Cross team collaboration requires someone good at managing relationships	11	Team development practices
● HRT-Diversity	7	Team development practices
● HRT-Donught team interaction structure	9	Team development practices
● HRT-Heterogeneous specialist team structure	10	Team development practices
● HRT-personal relationship building culture	2	Team development practices
● HRT-Selective staffing –fit	6	Team development practices
● HRT-Staff turnover	5	Team development practices
● HRT-Team design aligned with strategy	14	Team development practices
● HRT-Team training and development	1	Team development practices
● OCD-Different Business Unit dynamics	7	Organisational design
● OCD-freedom	8	Organisational design
● OCD-Job design	1	Organisational design

●	OCD-Norms	4	Organisational design
●	OCD-Open plan offices	3	Organisational design
●	OCD-Performance appraisal	2	Organisational design
●	OCD-Small Business unit teams with specialist knowledge	6	Organisational design
●	OCD-Structures	23	Organisational design
●	OCD-Supervision	1	Organisational design
●	OCD-Timing of information	1	Organisational design
●	OCD-weak control environment - procedural discipline	2	Organisational design
○	SCC-Norms and sanctions	1	Social capital cognitive dimension
○	SCC-Shared codes and language	16	Social capital cognitive dimension
○	SCC-Shared narratives	1	Social capital cognitive dimension
○	SCC-Shared system of understanding	3	Social capital cognitive dimension
○	SCC-Shared systems of meaning	3	Social capital cognitive dimension
○	SCC-shared technical and operational knowledge	4	Social capital cognitive dimension
●	SCL-leadership practice	32	Social capital relational dimension
●	SCR- Open door culture to knowledge sharing	11	Social capital relational dimension
●	SCR- Stakeholder buy in	1	Social capital relational dimension
●	SCR-After work get together	1	Social capital relational dimension
●	SCR-Balance of introverts and extroverts	1	Social capital relational dimension
●	SCR-But we also involve various stakeholders	7	Social capital relational dimension
●	SCR-Candid debate	2	Social capital relational dimension
●	SCR-conflicting non aligned interests	1	Social capital relational dimension
●	SCR-Connectedness	7	Social capital relational dimension
●	SCR-Culture	8	Social capital relational dimension
●	SCR-Discourage use of emails but face to face communication	7	Social capital relational dimension
●	SCR-Dynamic	3	Social capital relational dimension

•	SCR-Expectation	2	Social capital relational dimension
•	SCR-Friendship	7	Social capital relational dimension
•	SCR-Giving credit to team members	2	Social capital relational dimension
•	SCR-Heirachy boss subordinate dynamics	2	Social capital relational dimension
•	SCR-Individual trust	5	Social capital relational dimension
•	SCR-Institutional trust	1	Social capital relational dimension
•	SCR-Pshychological safety	3	Social capital relational dimension
•	SCR-Relational embeddedness	2	Social capital relational dimension
•	SCR-Respect	3	Social capital relational dimension
•	SCR-Shared vision	10	Social capital relational dimension
•	SCR-Structured Field days encouraging introverts to communicate	2	Social capital relational dimension
•	SCR-Team composition networker	1	Social capital relational dimension
•	SCR-Team work	11	Social capital relational dimension
•	SCR-Trust	6	Social capital relational dimension
•	SCR-young guys flourishing in a freer and open environment	2	Social capital relational dimension
•	SCS- Enablers of team ambidexterity	17	Social capital structural dimension
•	SCS- How do you reach them	33	Social capital structural dimension
•	SCS- Informal communication whats app, short phone call	8	Social capital structural dimension
•	SCS- using tools for effective communication and discision making	13	Social capital structural dimension
•	SCS-flat structure with some organised heirachy	4	Social capital structural dimension
•	SCS-Formal communication written, email	4	Social capital structural dimension
•	SCS-Global networks	5	Social capital structural dimension
•	SCS-Internal networks	15	Social capital structural dimension
•	SCS-Knowledge networks	22	Social capital structural dimension
•	SCS-Network configuration	3	Social capital structural dimension
•	SCS-Network ties	2	Social capital structural dimension

•	SCS-Strong network connections	18	Social capital structural dimension
•	SCS-Structural barriers to collaboration	6	Social capital structural dimension
•	SCS-Who do you reach	3	Social capital structural dimension

APPENDIX 6: Category code frequencies tables (1-6)

Table 1: BU comparative group summary of the ambidexterity code references rank frequencies

Ambidexterity codes	Engineering number of code references	Forestry number of code references	Total number of references per code	Number of respondents who referenced code
● ATM-Contextual ambidexterity	10	20	30	11
● AXR-Searching and experimentation	11	11	22	10
● AXT-Improvement	15	9	24	10
● ATM-Paradox challenges	17	2	19	8
● AXR-External ideas and resources	3	12	15	7
● AXT-Efficiency	8	2	10	7
● AXT-Production	3	6	9	6
● ATM-Structural ambidexterity	2	6	8	5
● AXR- New Radical innovation	7	2	9	5
● AXR-Balancing short term and long term	3	3	6	3
● AXR-Internal ideas and resources	3	1	4	3
● AXR-Limited exploration due to tough macroeconomic environment	1	2	3	3
● AXT-focus on exploitation in response to tough macroeconomic environment	5	1	6	3

Ambidexterity codes	Engineering number of code references	Forestry number of code references	Total number of references per code	Number of respondents who referenced code
ATM-Pressing short-term exploitation needs takes precedence over longer-term exploration activities	2	0	2	2
AXT- speed of execution many incremental improvements	3	0	3	2
ATM-Priorities in difficult times	1	0	1	1
AXR-Alternatives	1	0	1	1

Table 2: BU comparative group summary of the human capital code references rank frequencies

Human Capital codes	Engineering number of code references	Forestry number of code references	Total number of references per code	Number of respondents who referenced code
HCP-Specialist	8	6	14	12
HCP-Education	6	7	13	11
HCP-Narrow experience	5	6	11	10
HCP-Skills	7	7	14	10
HCP-Communication skills	8	4	12	7
HCP-People skills	11	4	15	6
HCP-Innovative	3	2	5	5

Human Capital codes	Engineering number of code references	Forestry number of code references	Total number of references per code	Number of respondents who referenced code
● HCP-Project management skills	4	1	5	5
● HCP-Willingness to learn	2	3	5	5
● HCP-Driven	2	2	4	4
● HCP-integrity	6	3	9	4
● HCP-Team player	4	3	7	4
● HCB- introverted specialist	4	1	5	3
● HCB-Knowledge sharing	3	1	4	3
● HCB-Problem-solving	2	1	3	3
● HCP-Crucial conversation skills	4	1	5	3
● HCP-social and networking capacity	1	3	4	3
● HCP-use of Information technology	3	0	3	3
● HCB-Cooperative	2	0	2	2
● HCP-Adaptability	2	1	3	2
● HCP-Ambitious	0	2	2	2
● HCP-Hardworking	1	1	2	2

Human Capital codes	Engineering number of code references	Forestry number of code references	Total number of references per code	Number of respondents who referenced code
● HCP-Right attitude	0	2	2	2
● HCP-Structures and time management	2	0	2	2
● HCB- Caring for other team members	0	1	1	1
● HCB-Disciplined	1	0	1	1
● HCB-Loyalty to company	1	0	1	1
● HCB-Personality conflict	1	0	1	1
● HCB-Thinker	0	1	1	1
● HCB-Treating everyone the same	0	1	1	1
● HCP-ambidextrous	0	1	1	1
● HCP-Big picture	0	1	1	1
● HCP-Expert	1	0	1	1
● HCP-Friendliness	1	0	1	1
● HCP-Passion for forestry and research	0	1	1	1
● HCP-Responsibility	1	0	1	1
● HCP-Work independently	0	2	2	1

Table 3: BU comparative group summary of the social capital code references rank frequencies

Social capital codes	Engineering number of code references	Forestry number of code references	Total number of references per code	Total number of respondents who referenced code
● SCS- How do you reach them	16	17	33	11
● SCS-Internal networks	8	7	15	11
● SCS- Enablers of team ambidexterity	8	9	17	10
● SCS-Knowledge networks	13	9	22	10
○ SCC-Shared codes and language	7	9	16	9
● SCL-leadership practice	19	13	32	7
● SCR- Open-door culture to knowledge sharing	3	8	11	7
● SCR-Team work	4	7	11	7
● SCS-Strong network connections	8	10	18	7
● SCR-Culture	4	4	8	6
● SCR-Shared vision	3	7	10	6
● SCS- using tools for effective communication and decision making	7	6	13	6
● SCR-Connectedness	1	6	7	5
● SCR-Trust	3	3	6	5

Social capital codes	Engineering number of code references	Forestry number of code references	Total number of references per code	Total number of respondents who referenced code
● SCR-Friendship	4	3	7	4
● SCR-Individual trust	4	1	5	4
● SCS-Informal communication what's app, short phone call	4	4	8	4
● SCS-Global networks	1	4	5	4
○ SCC-Shared systems of meaning	3	0	3	3
○ SCC-shared technical and operational knowledge	4	0	4	3
● SCR-But we also involve various stakeholders	7	0	7	3
● SCR-Discourage use of emails but face-to-face communication	5	2	7	3
● SCR-Psychological safety	1	2	3	3
● SCS-flat structure with some organised hierarchy	0	4	4	3
● SCS-Network configuration	2	1	3	3
● SCS-Structural barriers to collaboration	6	0	6	3

Social capital codes	Engineering number of code references	Forestry number of code references	Total number of references per code	Total number of respondents who referenced code
● SCS-Who do you reach	1	2	3	3
○ SCC-Shared system of understanding	2	1	3	2
● SCR-Candid debate	0	2	2	2
● SCR-Dynamic	2	1	3	2
● SCR-Expectation	2	0	2	2
● SCR-Respect	3	0	3	2
● SCR-young guys flourishing in a freer and open environment	0	2	2	2
● SCS-Formal communication written, email	4	0	4	2
● SCS-Network ties	0	2	2	2
○ SCC-Norms and sanctions	1	0	1	1
○ SCC-Shared narratives	1	0	1	1
● SCR- Stakeholder buy in	1	0	1	1
● SCR-After work get-together	1	0	1	1
● SCR-Balance of introverts and extroverts	0	1	1	1

Social capital codes	Engineering number of code references	Forestry number of code references	Total number of references per code	Total number of respondents who referenced code
• SCR-conflicting non-aligned interests	1	0	1	1
• SCR-Giving credit to team members	0	2	2	1
• SCR-Hierarchy boss subordinate dynamics	0	2	2	1
• SCR-Institutional trust	1	0	1	1
• SCR-Relational embeddedness	2	0	2	1
• SCR-Structured Field days encouraging introverts to communicate	0	2	2	1
• SCR-Team composition networker	1	0	1	1

Table 4: BU comparative group summary of the social capital relational dimension code references frequencies

Social Capital-Relational dimension codes	Engineering number of code references	Forestry number of code references	Total number of references per code	Number of respondents who referenced code
• SCL-leadership practice	19	13	32	7
• SCR- Open-door culture to knowledge sharing	3	8	11	7

Social Capital- Relational dimension codes	Engineering number of code references	Forestry number of code references	Total number of references per code	Number of respondents who referenced code
• SCR-Team work	4	7	11	7
• SCR-Culture	4	4	8	6
• SCR-Shared vision	3	7	10	6
• SCR-Connectedness	1	6	7	5
• SCR-Trust	3	3	6	5
• SCR-Friendship	4	3	7	4
• SCR-Individual trust	4	1	5	4
• SCR-But we also involve various stakeholders	7	0	7	3
• SCR-Discourage use of emails but face-to-face communication	5	2	7	3
• SCR-Psychological safety	1	2	3	3
• SCR-Candid debate	0	2	2	2
• SCR-Dynamic	2	1	3	2
• SCR-Expectation	2	0	2	2
• SCR-Respect	3	0	3	2
• SCR-young guys flourishing in a freer and open environment	0	2	2	2
• SCR- Stakeholder buy in	1	0	1	1

Social Capital- Relational dimension codes	Engineering number of code references	Forestry number of code references	Total number of references per code	Number of respondents who referenced code
• SCR-After work get-together	1	0	1	1
• SCR-Balance of introverts and extroverts	0	1	1	1
• SCR-conflicting non-aligned interests	1	0	1	1
• SCR-Giving credit to team members	0	2	2	1
• SCR-Hierarchy boss subordinate dynamics	0	2	2	1
• SCR-Institutional trust	1	0	1	1
• SCR-Relational embeddedness	2	0	2	1
• SCR-Structured Field days encouraging introverts to communicate	0	2	2	1
• SCR-Team composition networker	1	0	1	1

Table 5: BU comparative group summary of the Organisational capital code references rank frequencies

Organisational capital codes	Engineering number of code references	Forestry number of code references	Total number of references per code	Number of respondents who referenced code
● OCD-Structures	15	8	23	11
● OCD-Different Business Unit dynamics	6	1	7	4
● OCD-Norms	2	2	4	4
● OCD-Small Business unit with specialist knowledge	3	3	6	4
● OCD-freedom	0	8	8	3
● OCD-Open-plan offices	1	2	3	2
● OCD-Performance appraisal	1	1	2	2
● OCD-Job design	1	0	1	1
● OCD-Supervision	1	0	1	1
● OCD-Timing of information Gr=1	1	0	1	1
● OCD-weak control environment - procedural discipline	2	0	2	1

Table 6: BU comparative group summary of the Human resources code references rank frequencies

Human Resources codes	Engineering number of code references	Forestry number of code references	Total number of references per code	Number of respondents who referenced code
● HRT-Cross team collaboration requires someone good at managing relationships	6	5	11	7
● HRT-Heterogeneous specialist team structure Gr=10	7	3	10	6
● HRT-Team design aligned with strategy	5	9	14	6
● HRT-Doughnut team interaction structure	0	9	9	5
● HRT-Selective staffing –fit	4	2	6	5
● HRT-technical panel of diverse specialists supporting operations	0	9	9	4
● HRT-Diversity	3	4	7	4
● HRT-Staff turnover	5	0	5	4
● HRI - individual ability to wear different hats	2	0	2	2
● HRI-Career development	2	0	2	2
● HRR- Career development	2	0	2	2

Human Resources codes	Engineering number of code references	Forestry number of code references	Total number of references per code	Number of respondents who referenced code
● HRR-Training	0	2	2	1
● HRR-Socialisation	1	0	1	1
● HRT-Balance of technical skills and relationship skills	0	1	1	1
● HRT-personal relationship-building culture	2	0	2	1
● HRT-Team training and development	1	0	1	1

