The role of absorptive capacity on incremental innovation

21767506

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Contents

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Title of Proposed Research Study

The role of absorptive capacity on incremental innovation

Nature of Study: Qualitative

Abstract:

The innovativeness of an organisation results in economic growth which foster organisational resilience. Learning is a significant capability for an organisation that promotes innovation. Learning capabilities comprise absorptive capacity which entails acquisition, assimilation, transformation, and exploitation. Organisations that have a positive absorptive capacity attain success through being innovative. This study will focus on the manufacturing and mining sectors within the scope of a qualitative study. Dynamic capability theory will be the foundation upon which this research is conducted.

Key Words:

Absorptive capacity, innovation, incremental innovation, learning capabilities, acquisition, assimilation, transformation, exploitation

1   Chapter One: Research Problem

1.1   Introduction

The ability to innovate is crucial to a company's success. Those companies who don't innovate may never reach their full potential because they will never be able to improve their efficiency (Navimipour et al., 2018).

Creativity and the pursuit or use of novel ideas were at the heart of innovation, as were the solutions they explored or exploited (Valcarcel et al., 2020).   However those ideas were based on external knowledge and the concept of absorptive capacity (Saemundsson & Candi, 2017). Therefore companies that were able to acquire, assimilate, transform and exploit knowledge successfully attained positive absorptive capacity which stimulated innovation and results in economic growth and resilience for a firm (Do et al., 2022a).

1.2   Background

Innovation was seen as an integral component of the mining and manufacturing sector, as it influenced performance. It further served as a tool to enhance the efficiency and effectiveness of organisational processes and practices, and facilitated cost reduction within firms. Furthermore, it played a role in addressing the growing social and environmental issues experienced by communities and authorities.

The mining and manufacturing sector is essential in driving the world's economy, however, the mining industry fell from 25% in 2010 to 11% in 2020 (Statista, 2022). The manufacturing industry contributed 17% in 2021, (World Bank, 2022). In 2020, the 40 Global mining companies recorded revenue of 656 Billion US dollars (UNIDO, 2022), indicated that a country's industrial capabilities and the size of the manufacturing industry were significant in contributing to resilience against the Covid-19 pandemic. Those countries with a reinforced manufacturing system adapted to the economic crisis.

Xie et al., (2018), mentioned that absorptive capacity played an integral role in the innovation performance of organisations but this was not investigated in the abovementioned sector. Han et al., (2020), concurred with this and indicated that

investigating absorptive capacity on incremental innovation was necessary to facilitate generalisation in various industries. The mining and manufacturing sector is significant in the supply of products that are essential for the sustenance of life. This included food, medicines, fuel and necessities. These industries are interlinked by providing inputs such as equipment and machinery, services and engineering to a country's infrastructure such as electricity, telecommunication and transport services. Strategically these industries, provide important products and services utilised during a certain crisis. More importantly, both the mining and manufacturing industries have been deemed the engine of growth as it contributes to productivity, employment and trade in a country and fosters world economic growth. Therefore this sector will be investigated in this research paper.

The business environment consists of internal and external stimuli. Adaptation mitigates economic and technological adversity within these environments to foster business sustainability and plays a significant role in the survival of the organisation through adaptation constituted by capacity (Mithani, 2020) . Uhl-Bien & Arena (2017), argued that threats triggered complexity which inherently required a firm to function as an adaptive system. Complex adaptive systems adapted and evolved. In response to adversity, organisations needed to adapt by fostering interactions that supported organisational resilience, innovation, and learning (Uhl-Bien & Arena, 2017).

Resilience, which organisations aimed to achieve, is made of modes that include avoidance, absorption, elasticity, learning, and rejuvenation, contributing to organisational adaptation. Each of these modes aimed for an equilibrium that introduced adversity under static resilience or pursues an alternative equilibrium with dynamic resilience (Mithani, 2020).

According to Do et al., (2022b) , organisational learning was beneficial in promoting organisational resilience and innovation. Organisations that supported a learning culture outperformed their competitors. Innovative organisations survived in the dynamic business environment because they had the ability to build organisational resilience. Innovation was seen as a key component in gaining an advantage in new or existing markets and providing a competitive edge to the organisation (Gault, 2018). The two dominant features of innovation are radical innovation and

incremental innovation (Jiang & Liu, 2022). Sabahi and Parast (2020), indicated that innovation enhanced the capabilities of agility, flexibility, and knowledge sharing within an organisation, and these capabilities, as a result, were influential on the resilience of a firm.

Learning is significant to organisational capability as it allows firms to successfully develop or modify new products and processes effectively and efficiently. (Alerasoul et al., 2021), stated that organisational learning comprised learning capabilities. Organisations were compelled to establish up-to-date learning abilities with the capability to mould rigid knowledge bases that promoted a business competitive advantage during unprecedented times. Li et al., (2018), emphasised that a key learning capability was absorptive capacity. According to Hoosbeek & de Vries (2021), absorptive capacity positively influenced or escalated the rate, magnitude, and frequency of innovations.

Industries including mining and manufacturing, construction, and information technology frequently acquired and integrated technically advanced products and services to facilitate operations. Innovative solutions in these fields can't be developed without the collaboration of highly skilled knowledge workers who help in identifying and sharing relevant information (Prior et al., 2018). Although there was a correlation between organisational culture and information sharing, researchers have not yet offered sufficient feedback on the internal and external elements and resources that together boosted innovation and firm performance (Rangus & Slavec, 2017).

Xie et al., (2018), mentioned that absorptive capacity played an integral role in the innovation performance of organisations. Han et al., (2020) , concurred with this and indicated that investigating absorptive capacity on incremental innovation was necessary to facilitate generalisation in various industries.

1.3 The Business Need

According to Stats SA (2021), the mining and manufacturing sector contributed to 22% of South Africa's GDP, making it the second-largest industry followed by finance at 23%. Although the core of growth and productivity in this industry was related to radical and incremental innovation, the World Bank (2022) stated that the essential component of research and development, together with the economic spending related to it has declined. The decline in innovation capacity was also confirmed by the decline in the Global Innovation Index (2021), as research and development comprised one of the contributing factors. Dynamic capabilities theory mentioned that strategic organisational practices were required to promote a competitive advantage and foster business continuity during uncertain economic times. For South Africa to grow and sustain its GDP, and to compete on a global level, improvement in strategising around innovation endeavours are therefore imperative.

In the first quarter of 2022, the manufacturing industry reported an increase of 4,9% which contributed to 0,6 % of South Africa's GDP growth. Mining, on the other hand, decreased by 1,1% due to a decrease in the production of PGMS, gold and iron ore. (Statistics South Africa, 2022). However, the export of goods and services increased by 3,9%, this was largely influenced by the trade in transport equipment, mineral products, vegetable fats and oil and paper.

The interface of the mining and manufacturing industry in South Africa has contributed to the development of a global mining equipment industry over the past few decades in 2020, South Africa was ranked 38th in the world in terms of GDP and 36th in terms of total exports. The top exports were Gold ($13B), Platinum ($11,9B), Coal Briquettes ($6,37B), Cars ($5,19B) and diamonds ($4,75B). China ($11,9B) and the United States ($10,2B) have emerged as the most important export trading partners followed by India($7,88), the United Kingdom($7,51B) and Germany ($6,93B) (OEC, 2022).

The challenge for South Africa was to improve on its global competitiveness and value add, where products or services were diversified and to penetrate the markets that were non-traditional or the developing and rapidly growing economies.

In this context, innovations enhanced economic growth and in the long run developed organisational resilience. (Gault, 2018). Mijiyawa (2017), discussed that manufacturing, mining, and construction made up the industrial sector which was pivotal for economic growth, creation of employment, and poverty alleviation in South Africa. Not only was this sector renowned for innovation but it created a full circle effect where it's interlinked with the transport, financial and agricultural sectors.

Ghebrihiwet (2019), discussed that research and development initiatives enhanced South Africa's capabilities to function at the forefront in the manufacturing and mining sector, however, there has been a decline, and the country is lagging in developing capabilities to propel successful innovation which negatively impacts the lower-income households as this reduction in cost in the respective sectors has repercussions that affect public transport, food and beverages, and agriculture. This is evident by the rising poverty line since the year 2015 which has increased from 57% to 60%.

The spinoffs from an innovative mining and manufacturing sector will not only benefit the industry but more importantly the economy as a whole. The increase in the supply of products from the mining sector utilised in further processes or the value added by a manufacturing base has the potential to relieve some of the pressure on the mining and manufacturing industry. This process can contribute to lowering the commodity concentration of the country's export goods and can aid in decreasing the volatile exchange rate.

An enhancement in the economies of large-scale manufacturing and production could have this snowball effect and shepherd augmented competitiveness in numerous sub-sectors in manufacturing and mining, which in turn can influence local procurement, increase the demand for products and services, positively impact the export market and substantially reduce the need to import.

Ultimately an innovative and resilient mining and manufacturing industry could have positive ramifications for the local environment, and capital structures, and in the process boost South Africa's marketability as an investment hub for both local and foreign investors. The increase in productive employment opportunities and the

upskilling would go hand in hand in reducing poverty and in achieving sustainable social and economic stability.

1.4 Scope of Research

The four components of absorptive capacity namely acquisition, assimilation, transformation and exploitation were found to influence the extent to which innovative processes and practices were executed within organisations (Xie et al., 2018).

Businesses have made conscious decisions to focus on incremental innovation rather than radical innovation because the latter was deemed more difficult to implement. However, just because radical innovations were more in line with long-term goals and incremental innovations were more in line with short-term goals, does not indicate that a company should prioritise one type of innovation over the other. (Z. Khan et al., 2019).

Existing literature on learning and the development of exploitative innovation in inter-organizational relationships has not properly scrutinised the relationship between absorptive ability and incremental innovation, which has been proposed as a key factor in organisations gaining a competitive edge. These fundamental aspects of multinational corporations in developing countries functioning in fiercely competitive marketplaces have not yet been fully understood in terms of management and strategy. (Enkel et al., 2017).

This research will be conducted within multinational corporations from South Africa in the mining and manufacturing sector. The focus will be around gaining insights from the lived experiences of employees relating to how their organisations fostered incremental innovation (ref).through absorptive capacity. The study will aim to identify the extent to which the components of absorptive capacity impacted incremental innovation. This will be limited to the research and development, processing, engineering and logistic departments. (Reference)

1.5 Purpose Statement

This research paper aimed to explore how the components of absorptive capacity, namely, acquisition; assimilation; transformation; and exploitation, collectively influenced incremental innovation. The outcome was therefore to ascertain whether absorptive capacity had a positive or a negative impact on incremental innovation.

1.5.1 Objectives

1.5.1.1 To understand how organisations, utilised the acquisition component of absorptive capacity to acquire knowledge relevant to processes and practices.

1.5.1.2 To understand how the analysis and interpretation of external knowledge was carried through assimilation

1.5.1.3 How did organisations combine the external knowledge with the internal knowledge and incorporate every day routines through transformation

1.5.1.4 How did organisations integrate the above three components through exploitation to develop new competencies, processes, practices and products.

1.5.1.5 To determine whether absorptive capacity had a positive or a negative impact on incremental innovation.

1.6 Outline of the Research Document

Section one comprised the justification for the continuity of the research study, which included the business need and the real-life problem at hand. This was followed by section two which delved into the theory of various authors to determine the research gap. The theory gave rise to the research questions depicted in section three. Section four then outlined the methodology of how the research was carried out.

2 Chapter Two: Literature Review

2.1 Introduction

The literature review outlined incremental innovation and the factors that influenced it. The learning capability of absorptive capacity is discussed with a focus on the main four elements which are acquisition, assimilation, transformation and exploitation. The factors that influence absorptive capacity were discussed. The theory of dynamic capability was also discussed

2.2 Innovation

The Schumpeterian process of "creative destruction" has not destroyed a firm but has rather allowed it to become more creative (Penrose, 1996). As elucidated by Penrose (1996), the internalisation of the Schumpeterian process of "creative destruction" together with the building of technology bases through innovation fostered success. Taking this into consideration, Escrig-Tena et al., (2021), affirmed that innovation has emerged as a critical solution to achieving sustainable competitive advantage in the business environment.

Expanding on this, modern-day scholars characterised innovation as the kind of capital for the firm which was further defined as a process to introduce and implement new ideas or improvements, technology, products, services, procedures, organisational structures, plans, and programs to increase a firm's performance and ultimately achieve organisational success (Zimmermann et al., 2020). Moreover, innovation entailed creativity and the cumulative process of innovation included organisational decision-making stages which commenced from the generation of a new idea until its implementation stage. Gault (2018), stated that innovation could be defined as the implementation and execution of an idea for a new product, process, marketing process, or organisational practice in a firm. In summary, product innovation entailed the introduction of new products or services to meet the requirements of an external market or user while process innovation was structured around introducing new elements into the production or service functions of an organisation that was utilised to provide a service or create a product.

Shujahat et al. (2019), mentioned that knowledge and innovation were interlinked and the application of this new knowledge resulted in innovation. Organisations had to therefore gather and absorb knowledge from all sources. Subsequently, the knowledge was developed and commercialised at the implementation stage. The result was either a new marketable product or a new process which was key to the reduction of costs and an increase in productivity. Furthermore, innovation was also be viewed as an opportunity to venture into new markets.

In essence, there were several methods to classify innovation. The most common was to divide this concept into radical innovation and incremental innovation (Jiang & Liu, 2022). Radical innovation related to the development of new products, services, or processes or unique improvements in existing features that improved costs and had a higher customer benefit.

To this point, Sabahi & Parast (2020), stated that radical innovation facilitated the adaptation of the latest technology and strategies required but not yet realised by the customers or the market. Apart from being associated with uncertainty, radical innovation was difficult to commercialise. In contrast, incremental innovation was defined as making minor improvements or additions to existing products, processes, or service models (Vercher et al., 2022). It comprised small configurational amendments in existing technology which were relative to price, quantity, or function and was relevant to the requirements of the current market or customers.

Creativity and productivity were the seeds from which innovation grew, and it was these qualities that allowed businesses to adapt to shifting market conditions, whether they were service or product improvements. Innovation played a crucial role in fostering economic growth and development, so it was crucial to foster it at both the individual and organisational levels (Mokhber et al., 2018).

Innovative work behaviour, leadership, organisational culture, organisational practices, organisational performance and technology, and resources were all elements that were hypothesised to have affected innovation in the past (Dodge et al., 2017).

2.3   Innovative Work Behaviour

Previous studies have established that an organization's innovative performance was affected by elements outside its control, such as resources, technology, the industry, and the market (Racela & Thoumrungroje, 2020).   However, recent studies have shown that additional investigation into the internal elements that affect innovation and the effectiveness of organisations is required (Ritala et al., 2021).   Inadequate engagement with other organisations, a lack of proactiveness, scarce resources, and restricted access to the external environment were some of the challenges that enterprised face while trying to innovate (Lam et al., 2021).   Considering this, it has been noted employees played an important role in the development of a company, and it was imperative that the firm selected individuals who exercised innovative work behaviour of the highest quality. According to Darwish et al. (2020), innovative work behaviour was an individual ability that enabled individuals to conduct work, such as implementing new processes or developing new products or services which was aligned to organisational processes and practices and management practices and improved both individual and team performances. To be innovative, organisations were dependent on the work behaviour of individuals. Schumpeter (2017), confirmed that employees with an entrepreneurial mind-set reshaped an organisation's resources and provided new capabilities. This correlated with (Teece et al., 2009), that this dynamic capability was been built on the foundation of a person's job experience, skills, expertise, learning, and know-how, acquired over time. It was stated that an organisation's positive absorptive capacity for acquisition, assimilation, transformation, and exploitation was facilitated by the learning process, which was galvanised with time (Cohen & Levinthal, 1990). However, it was argued by Millar et al., (2017), that people were valuable for firms to remain competitive however there were challenges especially in motivating the creation of knowledge or the exchange of knowledge which resulted in innovation.

2.4   Leadership

People management and strong leadership were essential to every business's success. One definition of leadership is the "soft skills" displayed or controlled through open and honest dialogue to accomplish set goals (Eliyana et al., 2019). Desired objectives or success was due to innovative thinking applied to already successful products and services. Leaders enabled innovators by constructing

creative environments. Leadership also encouraged investment and allocation of resources where it would do the most good to maintain competitiveness and relevance. Leaders who were overly preoccupied with everyday routines often stifled new ideas and businesses underperformed (Semuel et al., 2017). Strategic leadership was advocated as a means of achieving this balancing act between the organisation's immediate and long-term objectives. On the other hand, the impacts of both transactional and transformational leadership on employee productivity were the subject of substantial research (Alrowwad et al., 2020). Previous studies have shown a correlation between transformative leadership and increased productivity in the workplace (Eliyana et al., 2019). This was reiterated by Mokhber et al., (2018), that employees needed support and encouragement and help to foster enthusiasm and initiative in their work, particularly concerning the organisation's structures, processes, and practises, if they were able to think creatively and invent effectively (A. M. Khan et al., 2019). It was believed that a company's innovative capability would increase under the leadership of a transformative figure who could adapt to new circumstances and so inspire greater creativity throughout the organisation (Begum et al., 2022). In contrast, transactional leadership entailed an arrangement between leadership and an employee in which the latter's duties were laid out and rewarded or recognised for a job well done (Faraz et al., 2018). Both transformational and transactional styles of leadership have been claimed to play important roles in encouraging innovation (Alrowwad et al., 2020).

2.5 Organisational Culture

This change in both the micro and macro environments necessitated constant shifts inside the organisation. Organisations needed positive change inside their internal environment to stay competitive, but this required new strategies or the application of innovative solutions to fill gaps in the industry (Al Halbusi, 2022). Organisational effectiveness, according to these early studies was characterised by agility in making decisions, creativity in solving problems, and resilience in the face of change. (Holbeche, 2018). However, a company's culture evolved with time, and it's been unclear how to best address the cultural obstacles that helped ensure a productive and long-lasting workplace (Stokes et al., 2019). It was suggested that for a company to achieve its strategic goals, it must be able to effectively manage employee behaviours that were in step with the company's strategy and the dynamic external environment in which it operates (Al Ghazo et al., 2019). When a company's culture

doesn't align with its procedures, practices, routines, and modes of communication, then that company was seen to be operating with minimal effectiveness (Bhatia, 2021). Studies have noted the importance of a company's culture, but research on the effectiveness of culture has been scant (Potnuru et al., 2021). Crucial to the success of any business was its culture, which was largely shaped by how its leadership, managers, and employees interacted with one another (Al-Ali et al., 2017). There was also a lack of studies on how a company's culture and effectiveness affected innovation. (Navimipour et al., 2018). Overall there was a need for effectiveness to implement change. Change was encouraged since the company thought it will help workers become more productive and have a deeper appreciation for what they're doing. Although necessary, not everyone welcomed change, which can have an adverse effect on a business (Naveed et al., 2022).

2.6 Organisational performance

The pace of change was increasingly significant in today's corporate world, where constant transformation was a constant. Reduced product, process, and technology longevity meant businesses had to constantly innovate to stay ahead (Witkowski, 2017). For this reason, a company's strategy relied heavily on its dynamic capabilities. Change or a quicker response to the unpredictable business environment was made possible by the reconfiguration and integration of internal and external resources, competencies, and capabilities (Teece et al., 2009). A company's innovation strategy rested on the twin pillars of either radical innovation or incremental innovation (Lennerts et al., 2020). However, it was argued that radical innovation involved greater uncertainty than incremental innovation and was most likely not to be pursued based on the time frames to develop and the demands to return on investment over a shorter period (Kennedy et al., 2017). This caused tension inside an organisation, therefore businesses needed to put in place processes and systems that allowed employees to choose between incremental and radical innovation when allocating resources (Alizadeh & Jetter, 2019).Organisations that relied mostly on incremental innovation strategies have focused on familiar or easy opportunities to continue conducting the most fundamental types of searches. (Chen et al., 2018). Therefore, this innovation has thrived on pre-existing abilities, procedures, or customs, and operates on the principles of incremental innovation based on reproduction, refining, or changing and enhancing efficiency. According to Osiyevskyy et al., (2020), leadership and managerial qualities, as well as investment

in research and development, were identified in the literature as essential drivers for incremental innovation and organisational performance. It was reiterated that, human resource practices, support and encouragement, a learning and innovative culture and autonomy were identified as key drivers for incremental innovation that was seen to boost organisational performance (Oyemomi et al., 2019).

2.7 Organisational practises

According to Millar et al., (2017), the innovation process relied heavily on the contributions of its people and the knowledge they possess. Embedding that knowledge within the firm and using it per the firm's organisational practises and processes was how value was created for an organisation. Following the development of knowledge management, studies have looked into the factors that encourage innovative practises and processes (Ayoub et al., 2017). Many academics have claimed that a company's ability to innovate depended critically on how well its information was managed (Butt et al., 2019). Consequently, it was stated that organisations have achieved sustainability when knowledge was leveraged to improve products, services, processes, and practices in a way that was consistent with strategy and incremental innovation (Sadeghi & Rad, 2018). The term "knowledge management" referred to the process through which a company's personnel found, analysed, and used information and data from both internal and external sources to improve business performance (Shujahat et al., 2019). Documentation, processes, integral systems, and codified human knowledge were all examples of the many formats in which this information was stored since its acquisition by employees or networks of employees (Butt et al., 2019). According to M. Shahzad et al., (2020), it was the storage of this information that enhanced innovation. The result was not only an increase in the rate at which information was shared but also an improvement in the likelihood that business issues would be resolved (Butt et al., 2019).

2.8 Technology and Resources

As time progressed it was proven that technological advancements served as a catalyst for growth within an organisation, which in turn lead to economic expansion. (Chen et al., 2018). Conversely, technological advancement was a significant

environmental aspect that had the potential to lead to a company's demise (Karabag, 2019). On a positive note, technological advancements which consisted of the acquisition of technological competencies, promoted product, process and service improvements (Karabag, 2019). Some have also argued that businesses might increase their competitiveness, by building a solid foundation of knowledge, because there was a shift from tangible assets to intellectual capital and capabilities (Cai et al., 2019). In the creation of this knowledge base, firms were dependent on organisational learning for both radical and incremental innovation (Božič & Dimovski, 2019). Despite their unique approaches to innovation, that was believed to enhance one another and the organisation as a whole. While radical innovation has facilitated the acquisition of new information and skills, incremental innovation has helped increase the quality of those already in existence (Alamayreh et al., 2019). Until recently, the standard method of integration was creating and distributing products and services in-house through in-house R&D efforts. But now, with widespread advancements in technology and access to information, businesses have more tools at their disposal to make incremental improvements and foster innovation (Millar et al., 2017).

2.9 Working in Teams

Innovation's importance to a company's bottom line has been widely acknowledged, and studies into the causes and mechanisms of innovation inside businesses have been continuing (Martínez-Román et al., 2017). The ability to successfully explore existing resources to discover or develop new ideas was determined by whether or not an organisation had the capability to generate these changes (Hutton et al., 2021). Absorptive capacity which was an element of the learning capability required the ability to identify, analyse, transform and exploit external knowledge (Vlačić et al., 2019). Evidence from the past suggested that the capability to learn was fundamental for firms to be innovative (Bernat & Karabag, 2019). This understanding made it easier for employees to share and transfer knowledge within the organisation, whether through the accumulation of experience or the utilisation of external resources. Companies with a high absorptive capacity have encouraged work collaboration in their day-to-day operations, which accelerated the innovation process (Wang et al., 2018). Successful incremental solutions were the result of collaborative efforts by team members to analyse or understand information. Knowledge workers played a crucial role in improving an organization's capacity for

innovation and for making decisions in dynamic markets (Hoosbeek & de Vries, 2021). Team members that worked together to improve decision-making saw higher levels of incremental innovation performance, which ultimately lead to business sustainability. Knowledge acquisition, data analysis, and transfer of information that served the organisational strategic goals were commonplace outcomes of such collaboration (F. Shahzad et al., 2017). As a result of globalisation, businesses now had more opportunities to achieve and maintain competitiveness in markets that demanded teamwork and creativity (Batarseh et al., 2017). Technology advancements have made it possible for people to work together virtually, regardless of their physical proximity to one another. Members of the team have operated autonomously across physical distances, time zones, and institutional norms and procedures (Laitinen & Valo, 2018). Online teamwork was utilised in today's fiercely competitive market to pool resources, share technologies, and even learn about the competition. It was crucial to learn how teams made use of their absorptive capacity concerning knowledge (Cohen & Levinthal, 1990). Although there was research of absorptive capacity being applied to working in teams there were few studies on the influence of absorptive capacity in the virtual teams environment (Cao & Ali, 2018). Studies have shown that diverse teams have been known to respond better to turbulent environments and in adapting to change (Garcia Martinez et al., 2017). However, there has been little research on how diversity affected working in teams virtually (Dulebohn & Hoch, 2017). Furthermore, research on team communication was necessary for efficient team performance to maintain a competitive edge (Graesser et al., 2018). Previous research has looked at the sharing of information where the openness and the distribution of information was closely looked at (D'Innocenzo et al., 2016). In a team setting, communication has been noted as the sharing of knowledge and understanding between members through vocal or nonverbal means (Paxino et al., 2022). Communication within a team was often evaluated on how the information was received or if there was understanding, and there was a need to expand on this further. (Vandavasi et al., 2020). Team familiarity has also been investigated to determine if team communication was enhanced and overall work improved (Tiferes & Bisantz, 2018). This has entailed the level of knowledge that team members hold about each other. Team members have become more comfortable with the strengths of each other, as team familiarity increased. Thus, efficiency was increased while the amount of interaction was reduced (Shuffler et al., 2018). Another key factor was leadership structure that differed within firms.

Previous research has shown that leadership does affect teamwork, especially in situations where communication was essential (Hoch & Dulebohn, 2017).

2.10 Capabilities and Resilience

Sabahi & Parast (2020), indicated that innovation enhanced the capabilities of agility, flexibility, and knowledge sharing within an organisation, and those capabilities, as a result, were influential on the resilience of a firm (Hillmann & Guenther (2021), debated that both innovation and resilience were constructs that embroiled various ways for survival during unprecedented times but (Do et al., 2022b), outlined that by creating and transferring knowledge within an organisation, learning behaviours are cultivated for crises. In essence, this had the potential to drive innovation and foster oganisational resilience.

Kennedy et al., (2017), outlined that radical innovation entailed greater uncertainty in comparison to incremental innovation and had a higher possibility of being suspended or disrupted due to the timeframe or capital spending required for development versus the return on investment. With this in mind, even though there were lower benefits for incremental innovation, and the risk is lower, there was a consistent and at times a minute contribution to the economic growth of the organisation.

Not only was this type of innovation renowned for the skill and competency building of the firm's employees but it was also essential for preservation and growth in the industry, therefore this will be the focus of the study (Lennerts et al., 2020)

2.11 Theory - Dynamic Capability

Older scholars illustrated that dynamic capabilities allow firms to improve on skills and competencies. This enabled these organisations not only to adapt but to also respond to the evolving markets. During this process, those firms could learn whilst applying resources and skills both internally and externally (Teece et al., 2009). Following this, (Eisenhardt & Martin, 2000), outlined that a key element of dynamic capability was the significance of an organisation in raising its competitiveness levels in ever-changing environmental conditions.

Modern scholars Yeow et al., (2018), articulated that, to a obtain competitive edge during challenging times, a dynamic capability view was required. This view necessitated the identification of strategic organisational practices together with the reforming process of resources which entails integration, transferring, and acquiring. On balance, dynamic capability can be seen as the heart of an organisations strategy and aided the development of capabilities such as innovation and creativity which stimulated competitiveness and high performance (Ferreira et al., 2020a).

Building on the above Do et al., (2022b), believed that organisational learning could be considered a dynamic capability through which businesses cultivated a learning culture. It was this learning culture that facilitates learning and acquisition of new knowledge where skills and competencies were improved. A key indicator of an organisations learning capability was absorptive capacity. Significantly it is this capability that increased the organisational adaptability and responsiveness to the dynamic market (Li et al., 2018)

Dynamic capability will form part of the investigation as to how organisations utilise their learning capabilities to enhance innovation. The study will then aim to analyse organisational and strategic routines which are influenced by these capabilities and decision-makers.

2.12 Interlink between innovation and absorptive capacity

Both creativity and productivity were necessary for innovation to occur, and it was this combination that allowed businesses to adapt to shifting market conditions, whether they were service or product providers. Innovation could play a crucial role in fostering economic growth and development, so it's crucial to foster it at both the individual and organisational levels (Mokhber et al., 2018).

Businesses that can innovated in the face of enormous challenges established and maintained a sustainable competitive advantage. According to Cabrilo & Dahms (2020), this ability was built around a firm's knowledge-based resource, managerial capability, and intellectual capital.

Innovation involved acquiring new knowledge, creating new knowledge or combining existing knowledge in new ways. New knowledge was created through the process

of learning, and this knowledge served as both an input (in the form of ideas) and an output (in the form of solutions) in the innovation process. Learning capability, absorptive capacity, intellectual capital, knowledge management, and stakeholder management were some of the most important intangible assets in today's competitive business climate (Ahmed et al., 2020). Because of this connection between knowledge and innovation, it follows that learning capability, absorptive capacity, intellectual capital, managerial capability, and stakeholder management were important preconditions for innovation (Cabrilo & Dahms, 2020; Engelman et al., 2017).

2.13 Learning Capabilities

Alerasoul et al., (2021), indicated that early literature had decomposed organisational learning and learning organisation into two parts where organisational learning looked at the processes and practices whilst learning organisation focused on the behavioural change in an organisation. Tortorella et al., (2020) had a slightly different approach and outlined that organisational learning was based on trial and error firstly and secondly consisted of processes and routines developed from the organisational main frame of knowledge.

Irrespective of the division or the approach by previous scholars, organisational learning was seen as a dynamic capability that compromised acquiring, assimilating, transforming, and exploiting stages that contributed to flexibility in company strategy but also stimulated innovation and improved business performance (Do et al., 2022b). Ultimately organisational learning was deemed essential for the survival of an organisation. Therefore continuous development and organisational improvement were centered on the concept of organisational learning. "Solving a problem, introducing a product, and reengineering a process all required seeing the world in a new light and acting accordingly. In the absence of learning, companies and individuals-simply repeat old practices" (Garvin, 1993).

Organisations were compelled to establish up-to-date learning abilities with the capability to mould rigid knowledge bases that promoted a business competitive advantage during unprecedented times. Li et al., (2018) emphasised that a key learning capability was absorptive capacity.

2.14 Absorptive Capacity

Older scholars Cohen & Levinthal (1990), stated that organisations with the ability to acquire and value new external information and assimilate and apply it to commercial ends make significant progress in innovation. It was this capability of an organisation that was a three-dimensional model and was called absorptive capacity.

On the contrary, Zahra and George (2002) expanded on the definition by Cohen & Levinthal (1990), of absorptive capacity and reconceptualised it as a four-dimensional or multidimensional model. It was seen as a set of organisational processes where firms acquire, assimilate, transform and exploit knowledge with the vision of producing dynamic organisational capability.

This four-dimensional model which had two subsets was utilised by Ali et al., (2018), and the effect of organisational structures on absorptive capacity was argued. The first subset, potential absorptive capacity was relative to the acquisition and assimilation of knowledge capability. This element played a role in affecting entrepreneurial orientation (decision-making) on variability in the outcome of innovation. Following this, the second subset was realised absorptive capacity and focused on the transformation and exploitation of knowledge and aids variability relative to innovative outcomes that improve firm performances.

Cohen & Levinthal (1990), coined the three-dimensional absorptive capacity model to build business performance, however, Zahra and George (2002), built upon this model to include the fourth dimension exploitation as it was tied into the current theory of dynamic capabilities which holistically utilised an organisations capabilities to stimulate innovation. Although they incorporated the four dimensions of absorptive capacity into their model, Ahmed et al., (2020) ,countered their findings by proving that only realised capabilities played a role in business performance (Xie et al., 2018) argued that the four-dimensional model segregated into the two subsets by Zahra and George (2002) was more appropriately used when feedback mechanisms were employed and when the four components were integrated.

Taking into consideration that the four-dimensional models of absorptive capacity was comprehensive with the ability to produce dynamic organisational capabilities, this study will in particular break down the model into 4 components: acquisition,

assimilation, transformation, and exploitation but look into how they function collectively as illustrated in figure one.

In essence, absorptive capacity was been found to be beneficial to innovation, and this study will investigate learning capabilities through the 4 components of absorptive capacity on incremental innovation (Xie et al., 2018; Han et al., 2020)

Direction to achieve incremental innovation
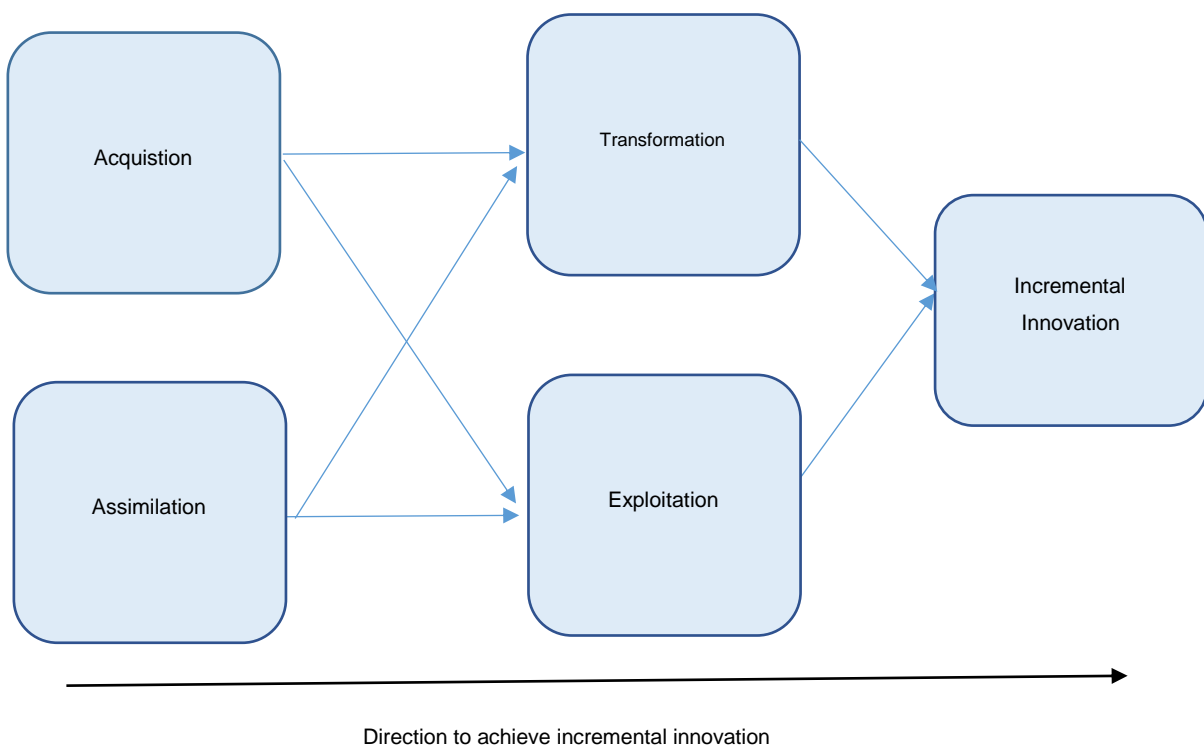
Figure 1: The Role of Exploitation and Transformation on Assimilation and Acquisition, Adapted from Knowledge absorptive capacity and innovation performance in high-tech companies: A multi-mediating analysis, by Xie, X., Zou, H., & Qi, G. 2018. *Journal of Business Research*, 289-297.

2.15 Components of Absorptive Capacity

2.15.1 Acquisition

Acquisition is the capability where an organisation identifies and acquires external knowledge relevant to its processes or practices (Engelman et al., 2017). Xie et al., (2018) supported this statement and pointed out that this initial stage of knowledge absorption occurred during interaction with the external and internal environments and in doing so, enabled an organisation to refine its skills and expertise which boosted its innovative status in preparation for turbulent times.

2.15.2 Assimilation

This capability entailed the analysis, processing, interpretation, and understanding of the information obtained from external sources (Engelman et al., 2017). Xie et al., (2018) argued that without a reinforced assimilation capability, firms would underutilise resources in troubleshooting and developing products that affect innovativeness.

2.15.3 Transformation

During this process, an organisations routines were developed or streamlined based on the assimilated and acquired knowledge (Engelman et al., 2017). Notably, the deviation in newly acquired knowledge as opposed to the existing knowledge could not be immediately understood and for this reason, the transformation capability was a necessity (Xie et al., 2018).

2.15.4 Exploitation

Exploitation was related to the organisation's capability to integrate into everyday routines, the knowledge that was acquired, assimilated and transformed (Engelman et al., 2017). Xie et al., (2018) emphasised that results in up skilling of personnel and the improved processes and technical abilities contributed to creating innovative products and services.

2.16 The Role of the Components of Absorptive Capacity on Incremental Innovation

In particular key focus areas for the determinants of absorptive capacity have been primarily the technical components of a firm or the intellectual property, Cohen & Leviathan (1990) however Ali et al. (2018) expanded on the debate of Zahra & George (2002), indicating that the focus shifted to non-technical components of a firm. Gao et al., (2017) supported this and categorised absorptive capacity literature into having technical behaviour aspects. Taking the nontechnical components into consideration, managerial practices and organisational capabilities such as integration and sharing of knowledge are seen as underlying factors of absorptive capacity and illustrate the significance of internal resources (Engelman et al., 2017).

Potential absorptive capacity and realised absorptive capacity were crucial to transforming and exploiting external knowledge Zahara & George (2002), but Saemundsson & Candi, (2017) Candi (2017) pointed out that organisations may understand technical problems however they may lack the ability to transform the acquired and assimilated knowledge into prosperous innovation. Xie et al., (2018), stated that this may be a result of the negative influence of potential absorptive capacity on realised absorptive capacity or the disconnect between these two components and proposed that newly acquired knowledge needs to be scrubbed and transferred to the organisation's database where it will be transformed to create new ideas.

Li et al., (2018) outlined that, organisational learning scholars have suggested that to understand the role of components of absorptive capacity the role of the firm's members which includes top managers together with learning orientation attributes and practices should be considered. Comparatively Cabrilo & Dahms, (2020), also argued that this absorptive capacity was structured around a firm knowledge-based resource which was the managerial capability and intellectual capital. However, the failure to acquire knowledge or the inability to exploit it negatively impacted absorptive capacity. Xie et al., (2018), countered the conventional acquiring and assimilation process for potential absorptive capacity and proposed that in acquiring the knowledge and exploiting the new knowledge for product or process development, an organisation promoted a positive innovation output.

According to Kang & Lee, (2017), potential absorptive capacity comprised acquisition and assimilation capabilities, but this did not assure its application. In other words, assimilation on its own did not add value. For this reason, Xie et al., (2018) proposed that the combination of new knowledge with old knowledge via the transformation element facilitated the creation of new ideas and stimulated innovation.

To achieve successful absorptive capacity, organisations needed to focus on the characteristics of external knowledge or focus on the internal characteristics of an organisation which included tangible and intangible resources (Engelman et al., 2017). However, the failure to assimilate knowledge or the inability to exploit it negatively impacted absorptive capacity. Xie et al., (2018), believed that investment in the assimilation and exploitation process function hand in hand and create opportunities that then fostered positive innovation outputs.

Xie et al., (2018) echoed that by processing and integrating the useful external distributed knowledge, an organisation was in a strong position to refine its existing products or processes, develop management practices, and ultimately boost outcomes related to innovation or innovation performance. Indeed the creativity and utility of knowledge assisted an organisation to gain a competitive advantage. This reiterated the definition of absorptive capacity as a dynamic capability emphasising its strategic characteristics.

Zou et al., (2018) reiterated that, the antecedents of absorptive capacity contributed to an organisations innovation performance by acting as a tool to action applicable external knowledge. Also, because there is a possibility of a flawed spread of knowledge across departments or business units can, there was the possibility that if information or ideas were communicated effectively the result may enhance an organisation's innovative performance. Subsequently, assimilation and acquisition could be seen as a vehicle to transfer knowledge of cross-departmental or business unit innovation activities.

By processing and integrating the useful external distributed knowledge, an organisation is in a strong position to refine its existing products or processes, develop management practices, and ultimately boost outcomes related to innovation or innovation performance.

Successful businesses were those that adapted to changing market conditions and continued to innovate. According to Cabrilo & Dahms, (2020), this ability was built around a firm's, tangible resources, intangible resources, and managerial capabilities.

2.17 Tangible Resources

Baškarada & Koronios, (2018), mentioned that strategic planning that emphasised the firm's absorptive capacity paved the way for the company to collect, assimilate, transform, and exploit external knowledge, which in turn galvanised the company's capabilities to make incremental adjustments and promote business sustainability. Conversely, Ávila, (2022), argued that the continued success of a business model or the demonstration of competitive efficiency could not be guaranteed by relying solely on traditional resources like technology, tools, or financial investment. Those assets or tangible resources were simple to duplicate or reconstruct. Over the years organisations have used internet-based communication to fulfil their absorptive capacity duties. However, over the years companies like technology have evolved and have adopted social media into their routines (Schlagwein & Hu, 2017). These assets or tangible resources were simple to duplicate or reconstruct. Companies need new methods of implementing dynamic capabilities for this very reason (Do et al., 2022a). Consequently, the firm's internal resources would be able to absorb new knowledge obtained from external sources, modify that information to fit the firm's needs, and finally capitalise on it. Millar et al., (2017), reiterated that it was for this reason, companies relied on knowledge as a resource to empower employees, and teams and implement change within an organisation to generate revenue and maintain the longevity of a business. Business needs or opportunities have traditionally driven organisations to begin the acquisition phase, during which they sought out relevant external knowledge (Cui et al., 2018). Alternately, businesses have teamed up with industry heavyweights or imitated what rivals have done (Vlačić et al., 2019).

2.18 Intangible resources- Intellectual capital

Some of the most important factors in a company's ability to compete in the market were its intangible resources, such as its absorptive capacity, knowledge management, and stakeholder engagement (Ahmed et al., 2020). Intangible resources or assets were also known as the intellectual capital of a firm. The idea of intellectual capital was developed through many years of study but the framing of it as a research subject is to some extent unknown but can be categorized into three dimensions: human, organisational, and relational capital (Cabrilo & Dahms, 2020). Upon a closer look at these multidimensional components, insight can be obtained from the interlink between the knowledge embedded in employees, managers, senior executives, highly intelligent people, and essential role players in the organisation who are all part of the notion because they are responsible for producing value (Mahmood & Mubarik, 2020)

2.19 Human Capital

The term "human capital" refers to an employee's contribution to the organisation in the form of new and usable knowledge. A worker's human capital could also encompass intangibles like creativity, flexibility, initiative, and commitment to the company, all of which were tied to their knowledge, whether implicit or explicit (Engelman et al., 2017). The organisation does not own this capital, as this capital comes to work and leaves work daily or may find a new job (Singh et al., 2021). Because of this, it cannot be stressed enough how much more vital human capital is compared to structural capital and relational capital (Pradana et al., 2020). According to research, the employees who have contributed the most to the company in terms of fresh ideas, innovative solutions, and advocacy for positive change have been its most knowledgeable and creative workers (Ferreira et al., 2020a). Employees who were highly skilled, motivated, and knowledgeable could question existing business practices and play an important role in creating and transferring knowledge through the process of innovation and learning (Hussinki et al., 2017).

 However, over the years human attributes have been broken down into can-do and will-do attributes. In terms of can-do attributes, these will include general knowledge, job know-how and troubleshooting skills. On the hand, will-do attributes have been referenced as the willingness to exert effort to contribute to idea creation or assist

fellow team members (Shipton et al., 2017). According to research, individuals that have gone beyond the bare minimum in their roles have contributed to innovation and business success however this has been dependent on the employee's motivation and willingness to promote such behaviours (Siregar et al., 2019). In addition, an employee's human capital consisted of accumulated expertise, knowledge, and experience throughout their career. Such an individual's knowledge, experience, and abilities were vital to a company's success economically (Diaz-Fernandez et al., 2017). Strategic goals, knowledge acquisition, transformation, and capital retention were essential for an organisation to reap the benefits of economic expansion.

Having focused on research by Cohen & Levinthal, 1990) individual cognition is a key component of absorptive capacity and Bogers et al., (2018) have agreed with the suggestion that training and development of employees have been vital to improving their capabilities to able to acquire, assimilate, transform and exploit knowledge. In addition, studies have shown that an organisation's absorptive capability improved when its workforce is comprised of people with diverse backgrounds of education and experience (Ferreira et al., 2020b)

2.20 Organisational Capital

Organisational capital is the firm's embodied and formally codified knowledge. Structure, culture, and routines of the organisation, as well as the storage and dissemination of knowledge, all play a role in this (Roos, 2017). However, this was the knowledge that remained within the organisation when the employee leaves (Liu et al., 2017). The potential for incremental innovation was boosted by the mix of old and new information, which was kept in the organisation and formalised (Sun et al., 2020). This knowledge base or organisational memory, enabled firms to combine the relevant external knowledge with that which was acquired resulting in creativity. (Abubakar et al., 2019).

Aligned with the business goal, the structure has connected the organisation's tools and resources for knowledge acquisition, integration, transformation, and exploitation (Sardo & Serrasqueiro, 2018). To the extent that knowledge can be transformed or exploited, this capital manifests in the form of an innovative culture and structure and is proportional to the values, attitudes, capacity, and commitment

employed within the organisation to transfer knowledge that results in incremental innovation (Engelman et al., 2017). Furthermore, studies have indicated that organisational or structural capital also compromised not only processes and procedures but other internal forces. This included things like employee trust, loyalty, productivity, customer information, practices and procedures, management structures, software and database systems, and patents (Zameer et al., 2022).

Ultimately, the potential for absorptive capacity increased thanks to the advances in information and communication technology, which in turn has simplified the promotion of processes and practices (Santoro et al., 2018). Organisational capital was a major factor in supporting incremental innovation by providing a shared framework upon which new activities can be built (Obeidat et al., 2021)

2.21 Relational Capital

The term "relational capital" has been used to describe the knowledge that has become ingrained in an organisation as a result of its relationships. Having established connections with customers, suppliers, service providers, technology partners, and other knowledge institutions outside of the organisation, this information was made available to be creative (Cabrilo & Dahms, 2020). However, since not all information could be found within an organisation, relational capital has helped spur innovation. Companies' ability to innovate has been boosted by their connections to the outside world, which has allowed them to adopt ideas and methods already in use elsewhere or to modify existing knowledge (Scuotto et al., 2017). According to Savino et al., (2017), transferring knowledge from one industry to another was responsible for the vast majority of significant innovations. With the knowledge of relational capital, businesses may better identify and respond to market opportunities and customer demands.

Furthermore, relational capital could be described as the sum of all of the resources that an individual or organisation has access to because of the people with whom they are connected. This capital was developed through communication and cooperation between individuals, teams, and organisational units (Ahmed et al., 2020). Studies have indicated that it facilitated the involvement of external sources such as clients to develop products or services and has encouraged continuous experiments (Randhawa et al., 2018). All things considered, the collaboration

between businesses has boosted information-sharing, provided a learning curve, and accelerated the development of new ideas (Ortiz et al., 2018).

Knowledge, products, or processes were generated via incremental innovation and diverse thinking with the interaction of team members. On the contrary team members might share some knowledge, but they might also withhold vital knowledge. The withholding of vital knowledge was known as knowledge hiding and Ahmed et al., (2020) argued that by members of a team keeping certain information to themselves, innovation was stifled.

2.22 Managerial Capability- Role of Leadership

Leadership and knowledge sharing was crucial in boosting innovation capacity and absorptive capacity, which in turn has helped businesses expand and remain competitive (Le & Lei, 2017). One of the most talked about and successful leadership styles that encouraged learning was transformational leadership. This type of leadership fostered an environment of trust, openness, support, motivation, and encouragement among employees, which in turn inspired them to think outside the box and come up with improvements to processes and practices that were in line with the organisation's overall goals (Liao et al., 2017). However, directive and aversive styles of leadership have been criticised for stifling creativity. This was because followers of these leaders tend to be submissive and rigid, unable to be creative (Fatima et al., 2018). It was for this reason that transformational leadership which was directed to empowerment and acknowledgement has been the style that has been utilised by most for supporting innovative ideas or solutions. However, the relationship between absorptive capacity was under-researched and the direct relationship between the two is yet to be confirmed (Jia et al., 2018)

2.23 Capabilities and Resilience

As described by Karman, (2020), resilience is considered the quality which enables humans, organisations, and other systems to cope with, adapt, and recover from unprecedented challenges or disturbances. Organisational resilience can then be developed for avoidance, absorption, and elasticity or through learning and rejuvenation. Organisations relied on internal capabilities and deployed external support when required or prioritised internal capabilities over external interventions

from assessments and improvements (Duchek, 2020). (Mithani, 2020) significantly described the mode of learning as being associated with the internal capabilities of an organisation to exercise resiliency. Therefore it was ideal for systems that practice autonomy through small modifications or the fostering of new routines and relationships or through effective and efficient improvements to address imminent threats. This lead to the understanding that, in essence, absorptive capacity was seen as a multidimensional concept comprising organisational practices and processes. Following this organisations generated organisational dynamic capability that synthesised various and complementary capacities of knowledge, which influences incremental innovation performance and competitiveness. Consequently, this cultivated organisational resilience. In particular, it is for reason that this study will focus on the four elements of absorptive capacity and its role in incremental innovation performance.

3 Research Questions

3.1 Introduction

Knowledge and innovation are inextricably intertwined, and the application of new knowledge leads to innovation. As a result, organisations must gather and absorb knowledge from all sources. Following that, at the implementation stage, the knowledge is developed and commercialised. The end result is either a new marketable product or a new method that is critical to cost reduction and productivity growth. Scholars of organisational learning have proposed that in order to comprehend the role of components of absorptive capacity, the role of the firm's members, including senior managers, as well as learning oriented qualities and practises, should be examined. The four-dimensional model of absorptive capacity is comprehensive and capable of producing dynamic organisational capabilities; this study will specifically break down the model into four components: acquisition, assimilation, transformation, and exploitation, as well as its role in incremental innovation.

3.2 Overarching Research Question

What is the role of absorptive capacity within your organisation to drive incremental innovation?

Scholars from the past have shown that a company's ability to flex and adapt is crucial to its success in the marketplace. Through this procedure, businesses can improve by utilising internal and external resources and expertise (Teece et al., 2009). A dynamic capability view is necessary to maintain a competitive edge even in the face of adversity. "(Yeow et al., 2018)" According to this theory, it was necessary to single out strategic organisational practises and the process of reshaping resources, which included acquiring, integrating, transferring, and exploiting. The examination into how businesses make use of their organisational learning capacities to foster innovation will include a focus on their dynamism (Ferreira et al., 2020b)

3.3   Research Question 1

What measures are employed to identify and acquire knowledge relevant to processes and practices?

The researcher aimed to understand the role of the employees, managers and the organisation in identifying and acquiring knowledge during the acquisition phase that was relevant to a firm's processes and practises.

The ability to acquire external knowledge pertinent to procedures or practises was known as "acquisition" (Engelman et al., 2017). According to Xie et al., (2018), this first stage of knowledge acquisition takes place during contact with both the external and internal environments, allowing a company to hone its skills and expertise in advance of challenging times and increase its inventive standing as a result. Research question one was then aimed to determine if acquisition influenced the learning capability of absorptive capacity and stimulated incremental innovation resulting in economic growth for organisations.

3.4   Research Question 2

What measures are employed to assimilate the external knowledge?

The researcher aimed to understand the role of the employees, managers and the organisation in analysing and understanding knowledge during the assimilation phase that was relevant to a firm's processes and practises.

Information gathered from outside sources can be assimilated if one possesses the ability to analyse, interpret, and comprehend it (Engelman et al., 2017). Without a stronger assimilation aptitude, enterprises will underutilize resources in diagnosing and producing goods that effect innovativeness (Xie et al., 2018).

Research question two was then aimed to determine if assimilation influenced the learning capability of absorptive capacity and stimulated incremental innovation resulting in economic growth for organisations.

3.5 Research Question 3

What measures are employed to transform the acquired and assimilated knowledge?

The researcher aimed to understand the role of the employees, managers and the organisation in transforming the acquired and assimilated knowledge during the transformation phase that was relevant to a firm's processes and practise. Organisational routines are created or improved upon in this phase by utilising the acquired and assimilated information (Engelman et al., 2017). It's important to note that it's not easy to grasp how much new information differed from pre-existing information, therefore the ability to transform is essential (Xie et al., 2018). Research question three was then aimed to determine, if transformation influenced the learning capability of absorptive capacity and stimulated incremental innovation resulting in economic growth for organisations.

3.6 Research Question 4

What measures are employed to exploit the transformed knowledge into everyday routine or processes that contributes to innovative products or services

The researcher aimed to understand the role of the employees, managers and the organisation in exploiting the transformed   knowledge during the exploitation phase that was relevant to a firm's processes and practise. The capability of an organisation to put to use the acquired, assimilated, and transformed knowledge is related to the concept of exploitation (Engelman et al., 2017). It's been emphasised Xie et al., (2018) that this has led to better procedures and technical abilities, which in turn aid in the development of novel goods and services. Research question four was then aimed to determine, if exploitation influenced the learning capability of absorptive capacity and stimulated incremental innovation resulting in economic growth for organisations

3.7 Conclusion

It was in this chapter that the study's research questions and their justifications were laid out. Answers and analysis to these questions are provided in Chapter five and Chapter six. Next, the researcher looked at the study's methodology and explained how it was conducted.

4 Research Methodology

4.1 Choice of Methodology

Exploratory: A qualitative research approach was employed to obtain new or further insight into the role of absorptive capacity on incremental innovation (Saunders & Lewis, 2018). As indicated in the literature review, further investigation was required to determine the role of learning capabilities through the four components of absorptive capacity on incremental innovation (Xie et al.,2018; Han et al., 2020).

Interpretivism: Although various research philosophies could be employed, this research took the route of interpretivism and was based on the know-how of the participants of the study (Greener & Martelli, 2018). The qualitative study approach, to investigate the role of absorptive capacity on incremental innovation, allowed for feedback from the employees exposed to the mining and manufacturing sector (Saunders & Lewis, 2018).

Inductive: The research focus was the development of incremental innovation which was facilitated by absorptive capacity. It was a "bottom-up" approach,that took into consideration the theoretical evidence (Saunders & Lewis, 2018) about the role of absorptive capacity on incremental innovation. This method allowed for broad generalisations which was made from specified observations that drew ideas and an understanding from the exploratory research design (Bickman & Rog, 2009).

The mono method qualitative research design firstly addressed the fact that this was a qualitative study. Notably, the limited time required to collect data supported this choice of method. Structured interviews was the tool of choice to assist in gauging the relationship between the constructs (Saunder & Lewis, 2018).

The qualitative approach of phenomenology was utilised to gain insight through the experiences and routines of employees (Nayak, Bhattacharyya & Krishnamoorthy, 2019). Likewise, this study aimed to address phenomenology to gauge how employees went about their days at work and at the same time obtained a perspective from their respective managers.

This approach was beneficial in providing in-depth feedback on how absorptive capacity influenced incremental innovation.

A cross-sectional study was appropriate considering the research design heeded to the procedure of collecting data over one period (Saunders & Lewis, 2018).

4.2 Population

A population as described by Saunders and Lewis (2018), is a collection of group members that would be on hand to convey insight to the researcher. For this proposed research, the population comprised employees from private organisations within the manufacturing and mining sectors in South Africa, who were exposed to absorptive capacity at their respective firms. To support a comprehensive understanding from the point of view of both the individual and the organisation, the population was extended to include managers within these firms.

4.3 Unit of Analysis

According Hair Jr., Celsi, Money, Samouel & Page (2019) the unit of analysis was referred to as the measurement source. It was from this source that data was collected. To this point, two measurement sources (a primary unit and a secondary unit) were identified to facilitate the triangulation of the persons interviewed (Natow, 2019). Significantly this also validated this research.

-       The primary unit of analysis – The insights and lived experiences of employees that were exposed to absorptive capacity to foster incremental innovation.

-       Secondary unit of analysis - The insights and lived experiences of managers that have been exposed to absorptive capacity to foster incremental innovation.

4.4 Sampling Method and Size

A sample size of 16 participants was employed. Maximum variation and purposive sampling was applied. As an initial target, a sample size of 5 to 25 participants sufficed however termination of sampling was determined by the data saturation (Cresswell, 2016). Saunders and Lewis (2018), have indicated that a sample is referred to as a subset of the population from which data was gathered. These samples were then analysed, information was gathered on the research topic and a

conclusion was deduced.To investigate different viewpoints within the study, maximum variation was allowed for the collection of data over a wide range (Sharma, 2017). According to Han et al. (2020), the role of absorptive capacity on incremental innovation was investigated across other industries. Therefore the mining and manufacturing industries have been chosen for this study.

The purposive sampling method was adopted based on judgment by the researcher (Saunders & Lewis, 2018). Cresswell (2016), indicated that this intentional sampling method informed the researcher of the constructs in the study. To eliminate bias, sampling criteria was applied to determine the selection of the participants. Participants were selected through the researcher's personal network, and be limited to the criteria stipluated in (4.4.1, and 1.4.2). The potential participants were approached via mobile or telephone, electronic mail and social network platforms such as Whatsapp. Respondents who met the stipulated criteria (4.4.1 and 4.4.2) were asked to recommend other candidates who met the criteria.

The initial selection was based on a sample size of 16 participants which compromises 12 employees and 4 managers. Based on whether saturation was reached, the sample size had the potential to increase or decrease in each category. This confirmed that new data was not excluded from the study and that the research was not compromised (Lowe, Norris, Farris & Babbage, 2018).

Based on the unit of analysis, the criteria for this research :
4.4.1 Employees of both genders who were employed in the mining and manufacturing sectors, that were involved in the research and development, financial, engineering, manufacturing, and logistics, departments. These participants should have been employed in their respective positions for at least a minimum of 2 years at their organisation.
4.4.2 Managers of both genders who were employed in the mining and manufacturing sectors, that were involved in the research and development, financial, engineering, manufacturing, and logistics departments. These participants should have been employed in their respective positions for at least a minimum of 2 years at their organisation.

	Company	Role	Naming	group
O4	Anglo American R and D	Head of Technical Solutions	**M4**	Senior Manager(23
O4	Anglo American Logistics	Logistics and Marketing (10)	**E9**	Employee(10)
O4	Anglo American Process	Process Engineer	**E10**	Employee(3)
O4	Anglo American Engineerin	engineering mechanical (20)	**E11**	Employee(20)
O2	Omnia Engineering	Optimisation and Technology	**M2**	manager(10)
O2	Omnia R and D	Senior Research and Development Che	**E3**	employee (9)
O2	omnia Process	plant manager	**E2**	employee
O2	Omnia	Distribution co ordinator	**E8**	employee(10)
O3				
O3	Sasol Engineering	Electrical Foreman (10)	**E7**	Employee(10)
O3	Sasol Process	Sustainable Business Partner(20)	**E6**	Employee (20)
O3	Sasol R and D	Senior Manager Research and Technolc	**M1**	Manager (13)
O3	Sasol Logistics	Demand manager	**E5**	Employee (15)
O1	Johnson Matthey R and D	R and D- Projects Industrial manager	**M3**	Manager(7)
O1	Johnson Matthey Logistics	warehouse and logistic manager	**E4**	Employee(22)
O1	Johnson Matthey Process	Process Engineering manager	**E1**	Employee
O1	Johnson Matthey Engineer	Automation Maintenance Manager	**E12**	Employee(22)

Figure 2: Respondent Information
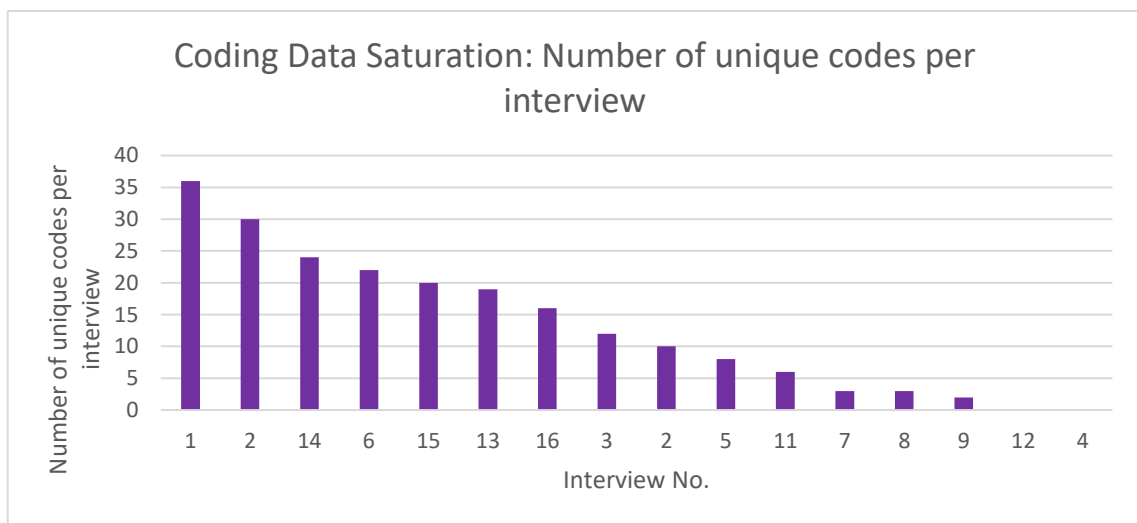
Figure 3: Saturation Graph

Saturation was achieved after the 14th interviewee was interviewed.

4.5 Measurement Instrument

The quality of the research was influenced by how the data was collected. The most common method of data collection was the interviews. As described in Saunders and Lewis (2018), the qualitative study process was supported by structured

interviews. These interviews facilitated the building of the theory. Although the role of learning on innovation was defined in the literature, further investigation was required to determine the role of absorptive capacity on incremental innovation (Xie et al.,2018; Han et al., 2020).

The focal point of the discussion was based on the interview guide supported by insights related to absorptive capacity associated with incremental innovation to achieve dynamic organisational resilience. These insights were collected through exploratory questioning (Moser & Korstjens, 2018). Due to the examining nature of the data collection, this structure entailed central themes that alleviated the risk of collecting data that was pointless to the research. The exploratory nature of the study supported by the semi-structured interviews allowed for the researcher to ask candidates follow-up questions based on their answers.

4.6   Data Gathering Process

Primary data was be collected via the semi-structured interview platform to ascertain how absorptive capacity improved incremental innovation (Han et al., 2020). The interview guide consisted of subject matter questions which formed part of two pilot interviews for employees that have characteristics similar to that of the selection conditions of the candidate. This plotted the path for the interview and assessed the necessity for further probing questions. (Saunders & Lewis, 2018).

Interviews were conducted at venues that were free from distraction and appropriate for the candidate.   Due to the current Covid-19 regulations, candidates were interviewed online via Microsoft teams, with the video function enabled to replicate the face-to-face interview scenario, others were interviewed in person adhering to social distancing protocols. There was note-taking during these interviews, and the added benefit of the online platform which allowed for the session to be recorded, subject to permission granted by the candidate. The interview process continued to the point of data saturation. All information obtained from the interviewees were stored in duplicate in a secured cloud storage platform.

The integrity and sensitivity of private information was protected by the implementation of the new legislation which was The Protection of Personal Information (POPI) Act. The researcher was required to maintain the safety and

integrity of the respondent's personal information during both the data gathering and data storage phases. Furthermore, the anonymous approach was applied during the data gathering and data reporting process. Neither names of the respondents nor the name of the employers was divulged during the data gathering and data reporting processes. Organisations and the respondents were allocated unique codes.

4.7 Analysis Approach

According to Hennik, Hutter, and Bailey (2020), the design stage of the research influenceed the analysis approach. The analysis and the data collection was conducted simultaneously to consolidate the interviews and observations to deduce the conclusions. The qualitative analysis software, ATLAS.ti was utilised to upload the interview transcripts. This formed a part of the categorising strategy employed for this research (Saunders & Lewis, 2018). Based on the qualitative analysis procedure, the data that was collected was coded using the ATLAS.ti software. Themes or keynotes were generated and analysed once the individual codes were categorised into groups. (Saunders & Lewis, 2018)

The six steps of thematic analysis are (Braun & Clark, 2006):
1. The researcher's familiarity with the data through repetitive reading of the documented data and transcription of it.
2. Generating codes systematically.
3. Categorising the codes into themes.
4. Reviewing of the categorised themes to confirm that they are suitable. This should take place until the themes are rational and logical.
5. Define the themes
6. Interpret the themes

4.8 Quality Controls

Maher, Hadfield, Hutchings, and Eyto (2018) indicated that a trustworthy research study is constituted by characteristics such as credibility, dependability, transferability, and confirmability. Furthermore, it should consist of an audit trail. Overcoming researcher bias was achieved by sample creation before contacting possible candidates. Validity of the research was ensured by considering alleviated

measures throughout the research methodology process (Saunders & Lewis, 2018). The quality and the validity of the outcomes were strengthened by the respondent triangulation. The themes or keynotes were comprehensive and in the process, a more educative view was formulated (Natow, 2019). Understanding of the research problem was gained by thematic analysis where the views of the candidates were analysed. Inconsistencies arose during theme development due to the flexible nature of this procedure. However, the researcher could trace back the process of decision-making and the raw data via the audit trails to authenticate the outcomes (Maher et al., 2018).

4.9 Limitations

A longitudinal study provided more depth than a cross-sectional study (Saunders & Lewis, 2018). Maximum variation or heterogeneous sampling was regarded as a non-sampling method (Sharma, 2017). The deduction extracted from the study could be impacted by biased participant selection. Also, concluding the sampling before achieving data saturation could lead to inaccurate results and had the potential to impact the authenticity of the research (Creswell, 2016). Interrogating questions during the semi-structured interviews had the potential to result in gathering data that was unrelated to the research (Moser & Korstjens, 2018).

5   Chapter Five

5.1 Introduction

Knowledge workers with extensive experience in the mining and manufacturing sectors were the primary focus of the interviews. These experts from various fields communicated their personal experiences and described their own and others' roles in absorptive capacity, which fuelled incremental innovation. Insightful themes that were distilled from the interviews were employee and manager responsibilities, value

of specific knowledge and experience, the need of making good use of available resources and technology, the function of effective leadership, and the role of the organisation. From these the respective categories that were formulated were, Employee responsibilities, (Experience, Expertise and Educational qualifications), Personal skills, Conducting research, External resources, Internal resources, Tools and technology, The role of the employee's manager, The role of manager's manager, The role of the manager, Organisational strategy, Risk management, Organisational culture, Organisational processes and practises, Human resource practises and Training and development. To kick off the discussion, the researcher asked each candidate to introduce themselves and discuss the state of innovation at their company.

> "*OK, so I'm a chemical engineer. By qualification, I have a background in process engineering and that's probably one of the key functions in terms of what I do daily debate daily basis. So engineering and optimization and technology is really the game that I play in.*"

The personnel who were interviewed provided details about their background and responsibilities at work. Additionally, individuals verified each company's innovation standing.

> *"We definitely are innovative . We continuously having the need to improve our processes."* (E1)

The majority of businesses were found to be committed to incremental innovation, and the importance of this type of innovation to the continued financial health of the business was emphasised.

> "*I mean incremental has to be there because the current assets are the one that will fund the new the you know the new expansion or the new*
>
> *innovation drive, right. So it means incremental innovation will never stop actually is sort of the the bloodline of of the organization and of the future, the future company. So that will always remain and it will probably still remain a significant portion of what we do*" (M1)

Minority of companies appeared to take a reactive role in the incremental innovation process.

"I think we focus a bit on incremental innovation, but very often it's not intentional. It's more so that we have a problem. Then we try to fix the problem and we find something out through that process." (M2)

5.2 Results for RQ1

In order to answer the first research question, the researcher looked at how different employees within different organisations went about identifying and acquiring knowledge that was useful to the processes and practises of their workplaces. The goal in asking this particular question was to better comprehend the interplay between employees, managers, and the organisation's internal and external environments during the earliest stages of acquisition. Insightful themes that were distilled from the interviews were employee and manager responsibilities, value of specific knowledge and experience, the need of making good use of available resources and technology, the function of effective leadership, and the role of the organisation.

Themes: Employee and manager responsibilities
Employee responsibilities
Employee accountability was determined to revolve around three primary activities: decision-making, problem identification, and problem understanding.

"My decision-making role is in that initial is the basic deciding what relevant or not from the data from the research I've done." (E3)

According to the interviews, the acquisition stage is the beginning of the learning process, so it was crucial that the worker selected the right information at the start. Employees from a wide range of organisations and walks of life confirmed that making decisions was an integral part of their ability to learn and grow, but others were held back by their company's policies and procedures.

"So with regards to replacement of equipment, we go like for like on a foremen level, you do like for like if it's the same component, same rating systems I can replace by myself if we going to do changes with regards to rating systems then we must follow the management MOC process. " (E7)

All personnel that was interviewed were key players in their respective companies. As such, it was incumbent upon them to remain pro-active in spotting issues and putting forth viable alternatives that could help the company progress.

"So it's my responsibility to bring up the problems that we have and the new equipment or the new technology that we'll be doing." (E1)

Issues were uncovered through conversations with employees who were grounded in typical operations. This disseminated the means to collect the information necessary to develop innovative solutions.

"So starting by looking at just the guys that I do manage, so your operators in your plant and your supervisors, they mostly acquire the knowledge for innovations just through the practices or through their everyday routine work." (E10)

In order to make incremental improvements to a product or service after a problem was identified, a thorough understanding of the issue was required.

"You have specific problem you need to work on or a service or product that you need to improve upon the first step would be obviously understanding exactly what, it is that you need to do" (E3)

The information gap prompted problem-solving initiatives and necessitated cooperation among various departments within an organisation.

"Sure. So I think the first thing would be to say, once you identify that there's a gap I would firstly just identify where are the opportunities to improve and then we engage with different stakeholders within the company to understand the actual gap in the system" (E5)

Theme: Value of specific knowledge and experience
Experience, Expertise and Educational qualifications

The majority of employees reported that conducting research was helpful in finding solutions, and both managers and employees used a variety of research methods to collect external data pertinent to the problems being faced by each department. Furthermore, most employees relied on specialised expertise. The managers emphasised that this was due not only to the employee's academic credentials or technical expertise, but also to the years of training they received in tertiary institutions, as well as the technical abilities of individuals working together in a diverse team, all of which helped in the identification of external knowledge.

> *"So for starters, obviously it's from my own tertiary training in terms of the field that I'm practicing. So most of the research capability comes from there how one was trained to identify knowledge and stuff."* (E10)
>
> *"Starting with people, obviously, it's the right people, so it's technical experts, technically competent individuals. And a nice blend between metallurgy and chemical engineering."* (M4)

Similarly, only a minority of employees relied solely on their experience and training, and instead turned to a different section of the business unit for assistance when confronted with unfamiliar situations.

> *"So anything that is theoretical we give them that type of work to handle and then the practical installation and stuff is done by the artisan"* (E7)

It was also discovered through the study that organizations' internal resources were used to acquire knowledge, which was unique to a given division or field and ensured that each employee had access to the specific information they needed to perform their job.

> *"We use the resources that we have internally and it's all about the experience. If you in supply chain you need supply chain experience. If you in projects you need project experience. "*(E9)

It was highlighted by most of the employees that experience which was gained from everyday work or through years of service in the industry contributed to the individual's ability to acquire knowledge confidently.

> *"But mostly it's from the experiences that one goes through on a day-to-day basis on the plan to identify what kind of changes or innovations would actually be applicable for their particular process."* (E10)
>
> *"Definitely, the experience will help because it makes you more confident to ask the questions that you otherwise may be afraid to ask."* (E6)

Personal skills

Only a minority of the managers agreed that research and knowledge acquisition were significantly aided by highly technical specialists with Master's or Doctoral degrees. On the other hand a few managers thought that individuals needed more than just technical expertise; they should also be resilient and have great potential in the business world.

> *" departments are generally made-up of chemical engineers or chemists, preferably with a Masters or a doctorate, but that understands reactive chemistry well enough to be able to introduce new products and use our database of knowledge to reengineer new products."* (M3)
>
> *"I'm looking for resilience.I'm looking for high potential. I'm looking for technical skills. Somebody who can who understands engineering at its core"* (M2)
>
> *"The skill sets, then they need is more than just the technical. They also need to have that business acumen"* (M4)

The acquisition of knowledge was not fully dependent on educational qualifications or technical proficiency alone. Personal abilities and interaction were necessary.

The minority of those interviewed also detailed some of the soft skills, such as patience, resilience, and interpersonal abilities that were required. Communication was mentioned and this tied into the points of the usage of resources required to acquire knowledge.

> *"So for me, critical thinking, and that's something I test for in the interviews."* (M2)

"No, I think the only thing that they need is basically patience and to go along the journey" (E11)

"So I would say that in O1 we have people that are technically inclined and are people inclined, " (E1)

"So based on that they need to have good communication skills, being able to put that on paper" (M4)

Conducting Research

Many employees looked into case studies from other companies to see how they implemented change, then compared those methods to the ones already in place. Others combed through online data bases and journals and learned how other industries operated in the innovative space.

"So I'll read some of those reports just to see what is it that they found and what improvements they introduce in the process if any or what did they remove for instance and how we were operating previously to how they are operating currently." (E10)

"You definitely do extensive reading and literature searches and using databases as it's available to you." (E3)

Importantly, these employees searched for information by utilising well known organisation's that were first to market with a given technology or process.

"For example, if I'm looking for something like what for example, if I see what patents other companies might have done and so on, I would to a company's website and also look at the business of the company's profile" (E3)

Managers echoed this sentiment, noting that dedicated personnel have been established to scour the web for relevant data and existing patents and designs. Employees took advantage of external knowledge and the work of their predecessors, which they then incorporated into the company's already established infrastructure, procedures and practices which encouraged incremental innovation.

"The way we do that is we have a we have a set, a group of people, quite senior people in the team that will do what is called patent landscaping and

> *they will do patent landscaping across align with the technology of interest at that point to try and learn how other people have solved a particular problem. "* (M1)

According to the interviews, businesses improved their processes, services and products and boosted growth by searching for external knowledge and bench marking themselves against competitors, industry leaders and even sister companies.

> *"And better benchmarking ourselves with other similar industries, to say are we competing with the right, team members out there? Are we at the same level? Is there anything that we can do to make sure that we get an edge over them to improve and get it and to be the best that we can be in us in our field"* (M4)

Theme: Making good use of available resources and technology
External Resources
The process of acquiring knowledge relied heavily on access to external knowledge. External resources are key to the process of acquiring knowledge. This collaboration was a perspective provided by both a large number of managers and employees. Equally, communication was crucial during the engagement with external teams or stakeholders that contributed to the solution which was intertwined with the strategy of the business.

> *"Identify suppliers and I and identify the need for, the plans and be able to meet that need and communicate with suppliers or whoever the need might, whatever the need might be"* (E5)
> *"So you know, stuff like that is the information that we would acquire both from our people on the ground at site, and review with a multidisciplinary team including, including regional guys or sector guys or global projects teams. Once we've shared that information and collaborated, we would come up with a strategy that meets our key performance areas for the next financial year."* (M3)
> *"We will either tell them that we either need additional capacity whether it will be additional resources, it will be collaborators, it will be in sourcing I mean*

there's many other options we can do to deliver et cetera, et cetera. Then they will use that information to, you know communicate further with the stakeholders," (M1)

Internal Resources

On the contrary, some of the employees leveraged internal resources when was no access to information and networking within the organisation facilitated the process where the external data was obtained.

"And remember, if I can't get it directly from any, you know source, then I try to use my network around me within the company" (E6)

Just as organisations were dependent on external resources external tools such as magazine material were utilised to obtain knowledge and to gauge where an organisation was at in terms of its processes and practices. Not only did this drive change but it also provided a map for organisations to view their positions in the competitive market.

"And in some cases, it will also be, magazine articles and things like that mean there's these things they call prep documents, which is a description of technologies within a certain space. So we use that information mostly to either guide us in what you want do to see what other people are doing to help us improve our system." (M1)

Tools and Technology

Some businesses, meanwhile were committed to the tried-and-true approach of gathering information online via established channels like search engines and electronic mail.

"I think the first thing is, your Google you know, you first Google and understand what is the service." (E5)

"That would be doing some research on the Internet, contacting if, for example, if if I might give an example, say maybe want to purchase a vehicle, a truck. Then I'll go to the Internet and then first get contacts of several suppliers." (E8)

Many managers and employees agreed that google was an invaluable resource because of how fast it returned results, how easy it was to use and how reliable it is.

" yesterday we were debating something around you can only improvement strategy for O4 and I wasn't sure what about something and it took me 5 minutes to use Google to get on to search net and onto the right site to get a paper that was published on a similar topic " (M4)

Minority of the organisations did not provide adequate resources for their knowledge employees in today's modern world. As a result of this antiquated way of thinking, employees were confined to the office where they could only contribute to research or problem solving efforts.

"For certain people to get that, you know the company was still in in the old way, that if you're in, if you're an engineer, if you're, you know, a scientist in the company, you just need a desktop. So you can't work from home." (M2)

Most businesses however had databases and well equipped labs for the simulation of information used the in acquisition phase. Some even went so far as to give their employees access to virtual reality technology, and others relied on online videos from companies in the same industry or group.

" In our labs, we've got this thing called a sketch rig and that simulates basically what the engine of the VW or the Mercedes or the Audi is creating" (M3)
"but I like looking at maybe videos from our sister plants on what they do" (E1)

Theme: The function of effective leadership
This theme confirmed the roles that managers played in the acquisition of knowledge. The conversations centred on positive reinforcement, with both managers and employees having their opinions considered.

Employee perspective

The role of the employee's manager

Many employees praised the helpful suggestions made by their managers. When asked for it, the direct report provided the employees with direction and specialised information on the topic at hand. The most prominent category that emerged was support and encouragement. When in a bind, these employees sought counsel from their managers who were a wealth of information thanks to their years of experience.

> *"The role from my manager would be a person that would be accommodating, housing, supporting that journey because you already at that point in time, obtained approval of the initiative. "* (E11)
>
> *" my manager plays a good role of being a soundboard around it, just to bounce off ideas here and find out whether I'm on the right track or not or if there is any improvement to what I'm currently thinking."* (E10)

However, there was a different perspective from a minority of the employees who confirmed that the manager is either not involved or seldom gets involved at this stage. The research showed that a small portion of those managers at this time were focusing on the strategic elements of the business.

> *"He doesn't really get involved in any of those type of things or discussions. that he's focused more on strategy and of course capital expenditure."* (E12)

Manager point of view

Role of the Managers Manager

> *"He's the final decision maker on quite a number of things on whether it's a feasible technology option, whether it makes, we obviously tell them that it makes financial sense, but he also has applied his mind. He has to make alliance and makes the decision whether it fits with the overall organisational strategy"* (M1)

The researcher found that some of the managers were not the decision-maker at this stage. The processes in place indicated either individuals or a senior team higher up

in the management chain determined early on that the acquired knowledge was consistent with the company's overall strategy. Conversely minority of the manager's manager lacked the ability to acquire knowledge relevant to the process of innovation.

"Its that typically those leaders also don't have that foresight to acquire knowledge to, you know, to innovate." <u>(M2)</u>

Role of the manager

The study indicated that the managers were instrumental in steering their teams through the phase of knowledge acquisition. These managers were tasked with driving the strategic agenda for the most important areas of focus and monitoring progress against key performance indicators. These leaders also established connections to outside resources and people active in the innovation process.

" I manage quite a number of resources and those resources will have will have expertise in in the various areas that I've told you about in the previous question, whether it's landscaping and open literature assessment, innovating around that will have people that you have quite extensive knowledge in engaging with multiple third parties" (M1)

" So my role is to look at this to say, well, there's definitely evidence yet, so there's evidence that whatever you were doing that it's gonna add value" (M4)

"So acquiring knowledge from people reporting into me, we've got , let's look at the continuous improvement side" (M3)

Theme: The role of the organisation

Organisational Strategy

Most employees stressed that the organisation was not involved in the process at this point, but the knowledge that was gathered was still relevant to the company's long term objectives. At this juncture, the onus was on the employees to make sure that the aforementioned key performance indicators and objectives were achieved. The employees need to keep abreast of the latest industry trends, if they were to remain effective.

> *"At that point in time, just to make sure that everything is sustainable. You if you hitting the salient points, everybody else is gonna be either posting about it"* (E11)
>
> *"So I think the organisation also just play a supporting role,"* (E9)

The researcher found that most managers based their incremental innovation initiatives on the overall organizational strategy. The objective of the organisation was to maintain its commercial viability through the internal process enhancements and external environment evaluations yielding positive results. As a result these businesses gained a positive edge in the manufacturing process or in the market.

> *"Either an advantage whether it is we have a feedstock advantage or we have a market advantage or we have some kind of like of an integration advantage we bring that and then we use that as an increment. So the basis for incremental innovation."* (M1)
>
> *" to understand where the waste is to tag times and understand you know where your pinch points and your process is and then starts eliminating those pinch points so that you process can go faster"* (M3)

The minority of the managers voiced their opinions that there was a misalignment between the organisation and the employees with the strategic innovation objectives.

> *" if we want to be serious about innovation, we need to start taking it seriously, right? And the role of the organization right is firstly to lead the strategic direction in terms of innovation."* (M2)

Risk Management

Minority of the managers outlined how the technical aspects of the business had to be prioritised when managing the risks associated with implementing technological improvements. When trying to model their efforts after those of others, businesses had to take care that the incremental enhancements were compatible to the facilities current design. Also the organisation would have been at risk if it had not made any upgrades or investment in innovation which would have resulted in a potential shutdown due to technical difficulties or non- compliance with regulations.

> *" those global objects team are usually working with the newer plants as they have more space for introduction of newer technologies. And there's less risk to introduce a newer technologies into newer plants."* (M3)
>
> *"the DI water plant are required by legislation to be in place and working well for the rest of the plant to function."* (M3)

Organisational culture

The study showed that there was counter- productive attitude towards innovation in a small number of organisations. Managers implied that employees did not feel encouraged to be inventive and therefore did not come up with novel approaches. Employees preferred to keep doing their jobs as usual operating under the assumption that if something had been successful for a long time, it was probably best to keep doing it the same way and not bother with any changes. On the contrary, most managers and employees mentioned that the organisation established the strategy and the firm's goals encouraged employees to take initiatives which boosted creativity.

> *"I think it's very difficult for them. I don't think the company has really driven that innovation culture at this point."* (M2)
>
> *" a culture or environment suitable for people to thrive to be themselves, to show their creativity and you just support that."* (E2)
>
> *" I mean the group will set up a theme in terms of company strategy and then the people that will have to deliver and think about."* (M1)

Organisational processes and practices

The majority of the companies attributed their innovative culture to the institutionalisation of processes and practises that encouraged employees to think of new ways of doing things. It was those measures that compelled employees to acquire knowledge that is in line with their everyday work. Moreover, many employees and managers felt empowered acquire knowledge thanks to the organisations policies and resources that were put into place

> *"they mostly acquire the knowledge for innovations just through the practices or through their everyday routine work to say how can we do this better"* (E10)

> *" Resources is in putting policies in place, resources and then you know, the allowing the Google searches on the desktop."* (E5)
>
> *"No, the company doesn't play any role except that they give us money to go wherever we want to go to get some information. But they just support and sponsor. "* (M3)

Human resource practices

A small number of managers complained that their company hindered the acquisition of knowledge by not realising that providing higher pay would be beneficial.

> *"because that's the only way to keep them and give them more money. We need to start paying people for those skills "* (M2)

Training and development

> *" we aren't developing people so that we can extract the most out of it."* (M2)
>
> *"you have to go the the actual equipment or to the actual training area and make sure that they know how to use their equipment or how to perform at certain tasks"* (E1)

Some companies had systems in place that is made it easy for employees to extract the relevant data or knowledge , which facilitated the development of skills from the onset, whilst other organisations failed to invest in their employees growth which slowed down the absorptive capacity process.

5.2.1   Conclusion

The majority of businesses used a combination of internal and external sources to learn about developments in their field. Technical expertise and academic credentials were helpful, but key personal skills such as resilience, critical thinking and strong business acumen were also important. Companies that promoted an outdated worldview encouraged a stifling environment for innovation.

5.3 Results for RQ2

5.3.1 Introduction

The second research question investigated the methods used by employees to evaluate the significance of new information acquired for existing organisational procedures and practises. The purpose of asking this question is to learn more about the internal and external factors that affect employees' and managers' ability to absorb new information. Insightful themes that were distilled from the interviews were the value of specific knowledge and experience, the need of making good use of available resources and technology, the function of effective leadership, and the role of the organisation.

Themes: Employee and manager responsibilities
The responsibility of the employee

During the assimilation stage, employees were responsible for making decisions, analysing problems, and making sense of the results.

> *"So I'd say in terms of decision-making outgo as far as just sort of doing a feasibility study for the proposed solution before it's implemented"* (E10)
> *"I'll be leading the analysis you know that would be my role just to make sure that we have all the information that's required and then share it with the broader team"* (E9)

According to the findings, most employees at the assimilation stage of absorptive capacity were not the ultimate decision makers, but they did contribute significantly to the outcome. It's important to note that some people led the analysis process while others did their own feasibility study. Each of the people interviewed was a key player in their respective companies. According to the findings, a company's ability to absorb new information is enhanced when it is led by seasoned workers who show initiative and curiosity.

> *"It's not necessarily about my experience, but it's experience as well as being informed, having that curiosity to be informed."* (E2)

Most employees needed full comprehension of the information they were absorbing while applying skills and experience. Some employees took advantage of their colleagues' prior knowledge to assist with assimilating the acquired knowledge.

> *"does it assist me with my current problem? Do the principles apply?"* (E6)
> *"we tend to run away from there, but the experience people, can teach you a lot and then they still can"* (E7)

Theme: Value of specific knowledge and experience
Experience , Expertise and Educational qualifications
Educational qualifications

At the time of assimilation, a certain group of employees stood out for emphasising the value of a solid educational foundation. These employees utilised their technical skills and experience to make decisions based on the information available. It was highlighted by a prominent category of employees that an educational background was an asset in the phase of assimilation. As a result of this interconnected strategy, these individuals were able to examine potential resolutions from multiple angles.

> *" So when you when you would then make a decision, I would employ my experience, be it with the plant itself or the area itself. I have a lot of technical background. So that also acts in my favour"* (E5)
> *" because both of them are educated.Both of them bring different skill sets to the workforce"* (M4)

It was highlighted by the managers that irrespective if the employee had attended a university or a technikon, both individuals were highly educated and brought a unique set of skills to the organisation.

Experience
Employees needed to have experience with a data analysis and interpretation background according to the research. The employees' work experience was instrumental in finding a workable solution. Some employees were equipped with

both academic credentials and relevant work experience , while others relied on their more experienced co workers to get by in the this phase of assimiliation.

> *"So with this one, I'd say your background and maybe your study background is probably important depending on what type of problem you're trying to solve, right. So you would definitely then apply your competencies and your experiences."* (E6)
>
> *"but because of the experiences that they have, some of them have been working a bit longer than me or quite longer than me"* (E10)

Expertise and Know How

Expertise needed by employees to assimilate knowledge emerged as the most salient category at this stage. Most positions required candidates who could analyse data and use their technical knowledge to develop an appropriate technical solution.

> *"knowledge of data analysis, especially if one has to look at the figures as well. So one should be able to at least have a little bit of knowledge of our to analyze numerical data"* (E8)
>
> *"And obviously you need to have a strong report writing or interpretation skill to be able to make sense of the data as well."* (E3)

The vast majority of managers surveyed reported that they used a deliberate strategy when hiring their staff. Assembling a capable team for design and modelling required workers who were well suited to their roles and possessed solid technical qualifications. Also the company hired people who published academic research on the same kind of technology that is used on the firms facilities.

> *"they need to be able to understand the processes that they are, you know trying to assimilate and say, well, how will this affect my process."* (M4)
>
> *"we would actively try to go in and recruit bit post doctrates that have done the citations in something similar."* (M3)

Personal skills

Some of the managers confirmed that employees are capable of analytical and critical thinking on their own but the company was not doing enough to encourage these employees to use their skills during the assimilation process. Mangers at other companies have had similar experiences, and praised their staff for the ability to think outside the box and come up with creative solutions that met the needs of the market.

> *"So those are the two skills that that are required and the thing is I think our employees have that ability. We're just not getting them to use that"* (M2)
> *"There needs to be able to new interpret customer requirements and be able to think outside of the box settings. Be innovative "* (M3)

Some employees concluded that at times an individuals competencies and background are irrelevant if they cannot apply a portion of learning at this phase of assimilation, especially when tools were utilised to analyse the data on hand.

> *"That tool is useless. So it's more about you as a person, how knowledgeable to what extent do you know and"* (E2)
> *"I think there has to be some level of learning before you implement and before you can utilize these tools that you acquire."* (E6)

Theme: The need of making good use of available resources and technology
External tools and resources

Majority of the employees and managers stated that the tools of external resources were utilised to assimilate the knowledge at this phase. In some cases external resources provided tools that did not form a part of the interviewed firms every day routines. Companies pooled their resources in this way, drawing on existing knowledge and experience in the field to better comprehend the nature of the needed enhancements and devise an approach to implementing them.

"who are the suppliers? Can they supply the right amount of plastics, the right quality of plastics? Is it dirty? Is it clean? What form is it? Is it pelletized? Is it flaked?" (E6)

" when we are analyzing, interpreting and processing, we would bring in, the various expertise bit in house or external like subcontractors or contractors or specialists within that field, to review the issue," (M3)

Internal tools and resources

Similarly, a large number of employees and managers verified that in-house tools were use for data analysis. In addition to these methods, the organisations overall strategy guided the assimilation process, guaranteeing that the business case's goals would be met across the board.

"We use statistical methods and lot specifically because we do gather a lot of raw data and the raw data doesn't mean anything once you've analysed it or interpret it, basically. So yeah, you use different techniques like graphs and statistics" (E3)

"Today you've got MATLAB and Mathcad and you got all of these and as semio packages where you can model these things and and use models, " (M4)

The solution was integral to the company's overarching strategy, and this was due in no small part to open lines of communication and collaborative effort among various internal teams and stakeholders.The process of analysing, interpreting and understanding the acquired knowledge involved a cross pollination between departments.

"There are things that done in other teams that we work at all internally but collaboratively that fits into the agenda that we deliver." (M1)

To further ensure that the knowledge at hand met business requirements and provided a clear return on investment, the investigation was based on financial analysis criteria.

When it came to the technical side of things, some organisations confirmed a solutions long term viability by adhering to standard and processes that were specific to the organisation.

> *"So with financial modelling. I mean we would use things like discounted cash flow modeling, right?" (E6)*
>
> *"the R and D department works together with the operations Department, then there will be some sharing of analysed data" (E3)*

While most employees used generic software for data analysis, some specialised programmes were used by a select few during this stage because they were specifically tailored to the needs of the organisation.

> *"The tool is customized for O1 processes, so it's easy when you have data, it's easy to populate the data onto the system."* (E4)
>
> *"So it basically would use you your normal Excel, PowerPoint or whatever reports that you can actually pull from the system, from the systems that we currently use."* (E9)

Communication with stakeholders

Managers and employees alike emphasised the importance of open dialogue among all parties involved in an idea's development. Before presenting a solution to the stakeholders, the employee was responsible for ensuring that the process was not harmed and that the adequate research had been performed on the idea.

> *"you're engaging multiple parties, testing for stability, and then once that information is been assimilated and we have a better understanding of what*

we're working with, then we will put together what we call an idea framing document." (M1)

"And so that would happen between managers and it would be a meeting for that and then we'll agree or disagree on a change that needs to be made." (E1)

Theme: The function of effective leadership

The theme demonstrated the significance of managers in the knowledge assimilation process. Managers and employees alike were encouraged to share their perspectives and have their voices heard during these conversations.

Employee point of view

The positive role of the employees manager

Majority of the employees praised the helpful feedback they received from their managers during the assimilation process. While some employees only offered criticism of their own solutions, others sought out their manager's insight and experience.

Employees highlighted the positive input of their respective managers at the phase of assimilation. Respondents confirmed that managers were instrumental in assessing the project when questions arose about the originality of the proposed innovative solution.

"I think the manager's role at that point , is just follow up and basically what they doing is just asking if everything is fine." (E12)

" you sort of give also like a progress report to say this is where we are in the stage and this is what we've done. And then if there's anything that maybe you might have neglected to attend to then maybe they will advise." (E5)

Role of the manager

Managers were found to be instrumental in the reporting and management of key stakeholders within the organisation in regards to the effect that the innovative idea had on resource allocation or solution delivery.It was the managers job to see to it that their teams correctly analysed the data and crafted a solution that was ready to be presented to the key stakeholders during this phase of knowledge assimilation.

> *"So if there is a risk I need to manage my stakeholders, which is the rest of the leadership team and the director to to sensitize them on whether there's going to be And overspend on budget"* (M3)
>
> *"And once that document is there the right level now we're going to take it through what we call a gate A meeting."* (M1)

Theme: The role of the organisation

Organisational Strategy

Those who were interviewed at this juncture stressed the importance of making sure the newly acquired information was relevant to the company's long term objectives. These innovative solutions were tied up to the investment of the firms budget which in turn was aligned to the strategic objectives. In such meetings where key stakeholders were involved, the idea was evaluated from a holistic business point of view and the market and also legal aspects were considered.

> *"our budget or what's the best strategy to invest our the budget that was allocated to us to meet the savings?"* (M3)
>
> *"We don't only make money from the technical aspect of things, right. So when you go there, there's a lot of things that needs to be in place. "* (M1)

Organisational culture

Based on the research, it was the responsibility of the organisation to cultivate a setting in which employees were encouraged to think critically and creatively. In order for the company to reap the benefits of these novel approaches to enhancing processes and services, it was necessary for employees to put them into practise.

> *" the companies role is providing these individuals with exposure and experience across the value chain so that when they get into a position now to assimilate all this information is around they know how the business works"* (M3)
>
> *" depends on the people whether or not they want to implement the solution"* (E10)

Organisational processes and practices

The interviewed employees confirmed that the organisation was passive at this moment but there were measures in place to guide individuals and stimulate these improvements within the business.

> *" But at this time, companies not do anything, we just utilising the system for the company just to understand the information that we acquired."* (E4)
> *"resources would be my, your governance. You know my supply chain procedures."* (E5)

Minority of organisations reported that information was not assimilated in depth and the process came to an end at that stage.

> *"There's no processing of it and and anything further than that."* (M2)

On the other hand, the majority of companies that institutionalised processes and practises have helped employees to come up with new ideas. Those actions made it possible for workers to evalauate the efficacy of the modifications online or in a controlled environment.

> *"to do a feasibility just to test out in, in the lab or either whether it is is a desktop exercise or in a lab. Just test out if the concept can work."* (M1)

Human resource practices

The researcher found that some organisations implemented markers or key performance indicators which ensured that the interviewed personnel contributed regularly to incremental improvements.

> *"so we need to ensure that we're delivering our KPIs in time so that the savings can be realized by the production team."* (M3)

5.3.2   Conclusion

Employees' educational credentials and work experience played a crucial role in the knowledge assimilation process. Process of understanding and interpreting the gained knowledge was greatly aided by employees with excellent data analysis skill sets. Employees were reminded of the need of keeping all relevant parties informed and in the loop, and of their responsibility to perform necessary due diligence.

5.4   Results for RQ3

The third research topic centred on the methods by which employees shared information about their organisations' processes and practises with one another. The researcher picked this inquiry to better comprehend the interplay between employees, managers, and the internal and external environments during the third stage of absorptive capacity, when new information is processed and integrated. Insightful themes that were distilled from the interviews were employee and manager responsibilities, the value of specific knowledge and experience, the need of making good use of available resources and technology, the function of effective leadership, and the role of the organisation.

Themes : Employee and manager responsibilities
The responsibility of the employee

The employee's responsibility was centred on decision-making and transformation of the knowledge.

> *"At this stage, no, I think it's more of a collaborative decision making."*
(E5)

The third phase of the study revealed that the vast majority of employees from a wide range of companies and professional backgrounds stated they participated in the decision-making process but did not have ultimate decision-making authority. Organisational procedures and norms controlled the end result.

> *"I cannot make a decision here. Here I can only advise and give a supporting evidence based on the trials that you have conducted."* (E4)

Key roles in their respective companies were held by all of the individuals questioned. Acquired and assimilated knowledge was used to shape new practises for the organisation. In this phase, employees from various companies transferred their newly transformed knowledge to their colleagues.

> *"For me here is to hand over monitor , that's all, maybe monitor for three months, six months "* (E2)
> *"Once you deliver it, you have to ensure that it's adopted well so that the people, the end users, know how to use it. The maintenance team know how to maintain it, and it can be transferred across to the site successfully."* (M3)

Theme: Value of specific knowledge and experience
Experience, Expertise and Educational qualifications

> *"in our sense you would need, operational expertise because now we have a new process"* (E6)

The most salient theme that emerged was that individuals at this stage needed to exhibit a unique combination of skills that originated from their robust educational background, coupled with experience, and this aided the transfer of information onto their colleagues.

> *"It will be an analytical chemistry background, or it will be automation. It should be the quality. It should be engineering skills."* (E4)
> *" Yeah, I think I think experience relevant."* (E5)

Personal skills
Most of those surveyed stressed that technical knowledge and skills were not the main criteria for hiring at this time. According to the study's findings, these employees needed to demonstrate a range of intangible abilities for the solution to be well grasped and executed.

"As a technical person, how do I describe a technical solution to someone who runs production? How do I make sure that they understand the technical necessity of implementing this solution in a productive way or a productive understanding?" (E10)

"You need to have the guts to be able to take those things forward." (M2)

Theme: The need of making good use of available resources and technology

External Resources

The study's findings underscore the need of leveraging external resources for internal knowledge transfer. Many different managers and employees worked together to contribute their input. It was equally important to keep the lines of communication open while working with external teams or stakeholders to shape operational routines that supported the company's strategic goals.

"So we may have to partner with the technology provider that does that right. So that's another way in which you can get the knowledge." (E6)

" They will be bringing their expertise and I think collaboration in this instance will actually be a way of actually transforming the inputs into outputs and so on, on our side." (E9)

Internal Resources

Most of the interviewed personnel used internal resources to transfer the external acquired knowledge. The knowledge transfer technique influenced regular operations across multiple divisions of the company.

"so you have to, work with it to ensure that a work with a multidisciplinary team and look at the data and prioritise accordingly." (M3)

"you obviously going to need to acquire like the IT department and so on to put it on there or write a small program for you if you don't have the skills to do that." (E3)

Tools and Technology

It was emphasised that just as businesses rely on outside sources for information, they also use the external, specialised tools provided by those sources to incorporate that information into their everyday operations. This motivation not only prompted a shift, but also laid the groundwork for new administrative practices.

" let's say then suppliers decide to bring a simulation tools to simulate certain things, if that's available, that would be used." (E5)

However, the study discovered that in some situations the transformation relied on technical reports sent to the end user, while in some cases the firms indicated that the transfer of this information relied completely on the persons themselves.

" transformation for us predominantly is through technical reports." (M3)
"So, there's no, there's no special tools at this point, you know, and that's why I say it's highly dependent on the person." (M2)

Communication

The interviewed personnel spoke about the importance of communication and that it was integral in the process to transfer the external knowledge to other parts of the organisation. However mixed feedback was received on the usage of communication and the effectiveness of it whilst the the changes occurred in the organisational routines to improve processes , services or products.

"Is there any reason why we are changing how we are implementing the idea? Is there perhaps a misunderstanding in how I transferred or how I communicated the idea to start with?" (E10)
" but there isn't necessarily right information on the why things have happened or how things have come about." (M2)

Theme: The function of effective leadership

Managers' roles in facilitating the transfer of knowledge inside the company and encouraging incremental innovation were reaffirmed by this theme.

Employee point of view

The positive role of the employee's manager

The majority of workers cited their superiors' helpful suggestions. During the transformation phase, one of the most salient themes that surfaced concerned the responsibility of managers to sell the idea of the innovative solution to the rest of the organisation in light of the company's long-term objectives.

> *"I think that for the better part they would have to play the role of painting the bigger picture, showing all the disciplines where we are trying to go with the solution"* (E10)
>
> *"Seeing if it's still giving that return on investment in NPV or IRR towards the business executing plan,"* (E11)

Manager point of view

Role of the Managers Manager

> *" So what happens is that those decisions now need to take place at A at a slightly higher position where they there becomes discussions around prioritization, alignment between research and technology and let's say operations. "* (M1)

According to the research, managers play an essential role at this juncture. The information was assimilated and developed so that it could be used to persuade stakeholders of the merits of incremental innovation.

Role of the manager

> *"The work has been done by the individual on a technical basis. People have read the report, or the memo.I'm going there and I'm selling the concept, so I go in there and say, look, this is what we've developed,"* (M4)

Managers in this role oversaw the transformation phase's strategic agenda, ensuring that key performance metrics were monitored and consistently satisfied. In addition, those managers were crucial in involving stakeholders, developing partnerships with innovators, and implementing necessary changes. However, some managers have addressed the challenge of managing employees' resistance to change.

> " stakeholder management at this stage is understanding and taking on alot of heat" (M3)
>
> "we are a manufacturing company and in a manufacturing company change is something that you don't want." (M2)

Theme: The role of the organisation
Organisational Stratetgy

The majority of employees who were interviewed agreed that it was critical at this time to stay in step with the company's long-term goals and ambitions. It was up to those specific inidiviudals to guarantee that the process's critical indicators and goals were achieved. It is noteworthy that the competitive market and the company's strategy were taken into account throughout this stage of transformation.

> "the payoff in terms of cost return on investment, looking at your NPV and your IRR at this stage." (E11)
>
> "Is the role of the the technology function is to also develop a strategy and align on priorities." (M1)

Only few of the managers have seen a disconnect between the company's strategic innovation goals and the employees' daily work.

> " if we want to be serious about innovation, we need to start taking it seriously, right? And the role of the organization right is firstly to lead the strategic direction in terms of innovation." (M2)

Organisational culture

An important finding of the study was that technical expertise alone was insufficient to ensure successful knowledge transformation. There was a need to take into account people management in order to implement the novel changes to the procedures or practises. Notably, a successful conclusion was achieved thanks to the positive contributions of the vast majority of those participating in the dissemination of information.

> *"So the first one will just be understanding. Try and understand if they see the problem as you see it, that will be the first deal."* (E10)
> *"ensuring that the end users have understood the, improvement well and there's no resistance to the improvement"* (M3)

Organisational processes and practices

At this juncture, when institutionalised practises were being shaped, it was crucial that resources and deadlines were in sync with the financial gain that resulted from the incremental changes. Those who were interviewed reaffirmed the notion that the company had made strategic use of the transformed knowledge to set new benchmarks in the industry.

> *"So and then it's just to align the resources to stay on course, align the resources in terms of the project plan, "* (E11)
> *"also uses that external knowledge to then develops its own standards within the company."* (E6)

There were learning curves associated with this change, but in the end, the lessons learned were incorporated into the regular operations of the company, leading to vast improvements in organisational processes and practises.

> *"you take that knowledge, you take that stats or whatever if you find in your in your, basically make it part of a like a either working instruction or addition to a spreadsheet that's already part of if I can say with existing quality system."* (E3)

In addition, the majority of those interviewed noted a change in their responsibilities during this time, one in which they ensured that results were in line with the firm's strategic objectives by monitoring improvements using organisational process and practise guidelines.

> " we work on the RACI .Where you basically have, you're responsible and accountable. And we we you have to just provide some information to somebody and inform somebody else" (E12)
>
> "so we've got automated systems that we can monitor for downtime for stuff like Lty or reject rates or quality of product." (M3)

The company had no active part in the implementation of these changes, but the processes and practises that were standard across most organisations served as a guide. As a result of the organisation's policies and resources, many employees and managers have reported feeling empowered to perform their knowledge-transformation duties.

> "in terms of the organization is just having systems that would make sure that whatever implementation or whatever new idea that you brought into the system is actually properly recorded as a change to your original process." (E10)
>
> "At this phase the organization does play a big role because they have said the policies and standards in place of how things needs to be done" (E3)

Training and development
> "He goes through the manual, the training manual that is designed with them and he does a knowledge sharing session." (E12)
>
> "but normally for me I prefer to teach first, do the changes, review the training later." (E2)

It was generally agreed upon by those who were surveyed that training and development were crucial components of the absorptive capacity process. By doing so, they facilitated the gradual changes by ensuring that the appropriate information

was communicated throughout the organisation. However, a small percentage of businesses provided negative feedback about the training and development aspect due to a lack of open lines of communication.

"train the relevant people to use equipment and finally hand over the rest of the information to keep the equipment running" (M3)

"people will have their training sessions.If there are changes that need to be made, they will be informed of the changes, but there isn't necessarily right information on the why things have happened or how things have come about." (M2)

5.4.1 Conclusion

Companies reported difficulties in establishing open lines of communication within their own ranks. Managers' primary responsibility throughout the transformation phase was to oversee the strategic agenda's key focus areas. The failure to involve the organisation with the newfound knowledge incorporated into a firm's practices was the root cause of the pushback against incremental advances.

5.5 Results for RQ4

The fourth research question investigated the methods by which employees incorporated the acquired, assimilated, and transformed knowledge into the existing processes and practises already in place at their workplaces. In the end, the integration contributed to the incremental innovative improvements to processes and practises.

By asking this, the researcher hoped to better comprehend the fourth phase of absorptive capacity, which is devoted to the exploitation of knowledge, and the responsibilities played by employees, managers, and the internal and external environments. Insightful themes that were distilled from the interviews were employee and manager responsibilities, the value of specific knowledge and experience, the need of making good use of available resources and technology, the function of effective leadership, and the role of the organisation.

Themes: Employee and manager responsibilities
The responsibility of the employee

An employee's primary role, the study found, was in a supportive one; this role required the employee to make suggestions for, and report back to management and the rest of the organisation on, the results of efforts to enhance the company's processes, products, and services. Knowledge transfer within the internal environment was essential to the sustainability of the exploitation process.

> *"I would be doing the recommendation as and leading the process and also just filtering back to management and back to the organization that this is what the outcome is of the entire process. "* (E9)
>
> *".Probably looking at it how it has impacted the rest of the department and the rest of the company where it has been introduced in those spaces." (E11)*

Handover and monitoring phase

This phase of absorptive capacity, which required minimal participation from the employee, entailed passing on this knowledge to the rest of the organisation, where new competencies, processes, practices, and products were created, which in turn resulted in economic growth. The monitoring role had been established despite the employees' minimal participation. The improvements were monitored , with feedback offered as needed.

> *"So my involvement becomes less once the production batch becomes much smoother. So we as a process department we handed over to production and then we move on to other tasks because we have different tasks that we need to do."* (E1)
>
> *"It's selling that to the business and making sure that the business sees the value of that converting that now into a big capital project."* (M3)

Theme: Value of specific knowledge and experience

Experience, Expertise and Educational qualifications

Employees used their technical knowledge and expertise during the monitoring stage, the study found. When problems arose, an analytical approach was taken to find a resolution.

> *"we do something called problem solving which is your fish bone analysis "* (E1)

Personal skills

At this stage, it was emphasised how important it was to have strong personal skills. The employees eagerness to demonstrate their skills led to a greater sharing and application of the company's exploited knowledge.

> *"it's through a lot of the personal skills, a persons motivation, a persons ambition, a persons desire. (M2)*

Theme: The utilisation of tools, resources and technology

External Resources

Using outside resources was crucial to the process of capitalising on the knowledge that was acquired, assimilated, transformed and exploited. The ability to pool the insights of numerous managers and workers and put their technical knowledge to good use had a profoundly positive effect on incremental innovation. Equally important was maintaining open lines of communication with any external teams or stakeholders involved in developing the solution, as their input was integral to the success of the overall business strategy.

> *"But there is also an external exploitation that comes in that if we went through the transform phase using working great closely with an expert company from outside ours, right. And we get to understand their competency, how they work and the level of expertise they have in there."* (M1)
>
> *"When we went to Czech Republic, we replaced switch gear. We learned about the new type of switch gear we were given on-site training there"* (E7)

Internal Resources

Similarly, some of the employees leveraged internal resources that provided a higher level of experience and expertise within the organisation during the exploitation phase.

> *"then you use more senior and technical experience people to give you other information."* (E7)

Tools and Technology

The majority of the interviewed personnel use tools at this stage of absorptive capacity, but the researcher found conflicting responses regarding the nature and sophistication of the chosen applications. There was a mix of hand tools, more simplistic data analysis and reporting tools, and advanced software.

> *"So for data, you'd obviously rely on things like Python, for your data analytics, or rely on Excel depending on how complex the problem is And you rely on your visualization tools like your power BI and stuff depending on what you want to see."* (E10)
>
> *" I say software as well, stuff like Excel going through, especially if this calculation so on you would have to go through each and every step. "* (E3)

Theme: The function of effective leadership

Managers' roles in the exploitation of knowledge that aided in the creation of novel competencies and routines that ultimately resulted in innovative products or services were reaffirmed by this theme. Both managers' and employees' perspectives were evaluated according to how they contributed to decision making and their inputs at this phase.

Employee point of view

The positive role of the employee's manager

The majority of employees cited managers' constructive feedback. A strategic role was played, and in some cases, managers played a supporting role and stepped in to help with decision making, while in other cases, a manager served as the project's ambassador, making sure that procedures were followed and adequate resources were allocated.

> *"At this stage it's more to just enforce the standard"* (E12)
>
> *" your manager would have had to start thinking about even before this stage to say how am I going to get my investment back essentially if this project doesn't work?"* (E10)

Manager point of view

Role of the Managers Manager

> *"Like, especially with the leadership team we need, we get their assistance, myself included, in trying to, publicise the change in a positive light as far as possible and focus the entire plant on the wins for that."* M3

The researcher discovered that the managers' managers helped spread word about this creative solution within the company. Part of the exploitation process included establishing the brand for the improvement and then gaining support for it from across the organisation.

Role of the manager

According to the interviews, it is the manager's responsibility to ensure that the opportunity discovered during the early stages of absorptive capacity is fully exploited, resulting in not only an enhanced business model but also a substantial financial gain.

> *" my role is opportunity identification and opportunity exploitation, right? So these are concept called economy of scale."* (M1)

Theme: The role of the organisation

Organisational Performance

Most of the interviewed personnel stressed the importance of incremental innovation having a constructive effect on the business's processes, employees, and overall culture.

> *"So obviously as an organization one is to then have a sort of vetting system to see which ideas are actually good ideas and which ones are bad ideas"* (E10)

In addition, key partnerships were established through the absorptive capacity process and through collaboration with external parties. By establishing these crucial

connections, businesses were able to pinpoint dependable and valuable resources with little effort on their part.

> *"If you work with a company and don't leverage on the relationship, it means that at the end of the day you'll have a million companies that you work with."* (M1)

Organisational culture

The majority of managers and employees at this phase agreed that the organisation determined the strategy, and that the firm's goals encouraged employees to take initiative, which aided in the exploitation of knowledge. The successful implementation bred a culture within the company that welcomed change and encouraged the introduction of additional enhancements, all of which stoked a spirit of innovation.

> *"so the organization will be more open collectively to change, and then also to introduction of new innovations"* (E11)

Organisational processes and practices

Most businesses' institutionalised processes and practises encouraged and enabled employees to make use of this knowledge. In addition, many employees and managers felt the organization's resources and policies, processes, and practises allowed them to perform their duties during this phase of absorptive capacity.

> *"Everything that will all will be incorporated in the future will be in the asset. In this case will be governed by the company procedures."* (E8)
> *"All of the organization is to support what we're trying to achieve."* (E4)

Human resource practices

Only a small fraction of those surveyed said they were compensated for coming up with innovative solutions and implementing them successfully.

> *"we've, come up with various reward programs for innovation and, improvements."* (M3)

"Well, I'm from the organizational perspective, it's basically recognition and reward." (E12)

Training and development

"And then once they have been trained. Then they must be monitored to ensure that they use the asset The way it should also in accordance with the company's procedures." (E8)

"at this stage you like I say. Yeah, you have to be able to teach somebody. You have to have to, like, say you have to be a type of person that that's able to, to, to, to teach somebody or transfer knowledge." (E3)

The vast majority of businesses have disclosed that training and development were critical components of the exploitation process. The information was shared in accordance with the established protocols of the company. Particularly crucial to the process's success was a set of people skills.

Time frame

According to the majority of the employees and managers, the time it took to turn an idea into a workable solution depended on things like the severity of the problem, the accessibility of relevant resources, and the significance of the project at hand.

"Knowing it varies all over the place because it really depends on the magnitude of the problem" (M1)

"So time frames you would say depends on the situation and the priority." (E7)

Interaction

Although it was reported that both online and face-to-face interaction took place, the vast majority of employees and managers favoured the latter. Internal communication within the company relied heavily on nonverbal cues like facial expressions and body language, which was stressed once again.

"Yes.Well the face to face. I personally do like face to face much more because things are always open to interpretation sometimes. " (E3)

Process improvement

"There needs to be enough sufficient flexibility within each and every step." (M1)

Some of the interviewed personnel have said that process flexibility is necessary to stimulate creative thinking and foster innovative behaviour that improves processes and practices and ultimately generates economic value for the business.

"So I think just being flexible around it would help a lot in streamlining how fast or how quick the implementations of the solutions are or implementing or stimulating more innovation." (M1)

5.5.1 Conclusion

During this stage, employees use not only their technical knowledge and expertise, but also their motivation, desire, and ambition, to push the process forward. An effective manager was one who not only was a facilitator of the process but also an analyst and a leader. It stressed how important patience and understanding were during the training and development phase. Most candidates indicated that, the time frame to convert an idea into a solution is dependent on variables such as urgent Consequently, the time it took to go from an idea to an incremental innovation was affected by the nature and severity of the problem, as well as the accessibility of relevant resources. The next point is that when asked how they ideally worked together during the various stages of absorptive capacity, the vast majority of the interviewed personnel indicated a preference for face-to-face interaction. The researcher concluded that flexibility and agility were necessary for ideas to be exploited at ease or with speed.

5.6 Final Conclusion

The purpose of the study was to identify the impact of absorptive capacity on incremental innovation within the studied organisations. All four stages relied heavily on the presence of high levels of education and technical expertise. Personal skills such as resilience, critical thinking, and strong business acumen stood out during the acquisition phase, while guts and persuasion were helpful during the transformation phase. Acquisition, assimilation, transformation and exploitation are all stages in the knowledge life cycle of innovation. Positions within the company shift as a result; most employees play a facilitating role during this stage. The time it takes to go from

an idea to an incremental innovation is affected by the nature and severity of the problem.

6 Chapter Six: Discussion and Results

6.1 Introduction

6.2 Research Question 1: What measures are employed to identify and acquire knowledge relevant to processes and practices?

Knowledge acquisition heavily involved gaining exposure to new information. Using outside sources is essential to the learning process. Many managers and employees have contributed their input. It was crucial to maintain unanimity when collaborating with other teams or stakeholders to design a solution that would fit into the broader corporate strategy. Insightful themes that were distilled from the interviews were the

value of specific knowledge and experience, the need of making good use of available resources and technology, the function of effective leadership, and the role of the organisation.

6.2.1 Employee and Manager Responsibilities

The researcher found that the acquisition phase placed primary responsibility for making an accurate determination on the employee's part. Knowledge like this was gathered externally and was found to be beneficial to the processes or standard operating procedure, as shown by (Engelman et al., 2017). The employee, however, was expected to first recognise an opportunity that would benefit the company. This correlates to (Lam et al., 2021) where anticipatory action toward problems with the goal of innovation was essential. In this preliminary phase, it is clear that the company relies on the person. Individual creative action is what kickstarts the process. (Darwish et al., 2020). Human capital includes the employee, who must be the initiator in some cases. (Engelman et al., 2017).

6.2.2 Value of specific knowledge and experience

The study's findings highlighted the practical implementation of the dynamic capability concept since a variety of techniques were used to gather information from the outside world, including external and internal resources (Teece et al., 2009). Regarding special skills, most of the employees were reliant on their educational qualifications, technical expertise and years of experience acquired in the industry. The minority that did not possess the applicable expertise or skill set, turned to other resources to aid with the process of acquiring knowledge (Teece et al., 2009). Organizational resilience has resulted from the cultivation of an innovative capability. (Hillmann & Guenther, 2021). Subsequently, employees that were interviewed did not only possess technical skills but also had the personal skill of resilience (Karman, 2020) The manager explained how employees who have a good understanding of business are an asset to the company. This has elucidated the requirement for a certain type of person to have an entrepreneurial attitude to radically alter an organisation and provide creative ideas (Schumpeter,2017).

6.2.3 Making good use of available resources and technology

Employees have kept an eye on the technological and external environments to identify any gaps or new chances for the company. It was confirmed that a need in a new market or from a client was the impetus for starting the procedure (Cui et al., 2018).

The strategic acquisition of this information served to forward the organisation's aims. Much people polled said they had to rely on external sources for most of their knowledge. (Millar et al., 2017) To collect this information, businesses have incorporated dynamic capabilities and tapped into external sources (Do et al., 2022b).

Numerous interviewees have indicated that conventional methods of data collection are still being used at this point in the acquisition process. The company's provision of such aids facilitated the reduction of laborious tasks. This is because of how easy it is now for businesses to access data that can help them refine their methods and procedures (Schlagwein & Hu, 2017).

Additionally, there have been companies that have provided staff with cutting-edge tools like virtual reality to help them identify this knowledge. The opposite is true; some companies have stifled employee creativity by failing to supply them with adequate resources. As a result, they had to rely on their own R&D to discover novel approaches to problems (Božič & Dimovski, 2019).

6.2.4 6.2.4 The function of effective leadership

Many of the employees expressed gratitude for their supervisors' insightful comments and guidance. The theme of encouragement and support came out on top. This fits the mould of transformational leadership, which has been the prevalent theory as of late. Encouragement, inspiration, and support are plain to see. (Le & Lei, 2019). This enabled the employees to be inspired to identify the knowledge at this stage of acquisition. However, some employees mentioned that their mangers were absent during the acquisition process. This likely indicated that the subordinate in question was misconstrued as a strategic leader despite their involvement in day-to-day operations (Semuel et al., 2017). Managers who were surveyed at this juncture

said they relied on the knowledge acquired their teams and were responsible for communicating the results of that expertise to the rest of the organisation in a way that supported the company's strategic goals. In addition, this demonstrated characteristics of a strategic leader (Semuel et al., 2017).

6.2.5   The role of the organisation

Most of those interviewed felt that the company was "passive" at the moment, but it was still crucial that they kept their knowledge acquisition efforts in line with the company's overall mission. From the company's vantage point, the necessary organisational capital had been established. At this point, the process would have been helped along by the structure, routines, and culture (Roos, 2017).

In this stage, it was crucial to follow all of the established procedures and norms for the organisation. Risks were discussed during this phase's interviews, but those risks were mitigated thanks to institutional mechanisms that ensured employees followed best practices (Zameer et al., 2022).

Only a fraction of businesses claimed to have an anti-innovation culture. Companies' adaptability, initiative, and dedication all stem from their human capital, thus this was crucial (Engelman et al., 2017). As a result, it was obvious that the organisation was functioning at minimum effectiveness, and that the company was not aligned with its procedures, processes, or modes of communication, both of which may have contributed to the eventual demise of the business (Bhatia, 2021).

On the contrary, many employees and managers have claimed that their companies actively promote an innovative culture that inspires people to take the initiative, be enthusiastic, and be creative when it comes to expanding their knowledge (Siregar et al., 2019).

Managers and employees attested to the fact that their innovative culture was built around the processes and practices that were institutionalised. This enabled employees to be creative and acquire knowledge that was in line with their daily routines. Also, this confirmed , it was the structure that was a part of the organisational capital that connected the tools and resources for the acquisition of

knowledge (Sardo & Serrasqueiro, 2018). This fostered the innovative culture that stimulated commitment from the employees.

A few managers also complained that the company failed to provide adequate compensation, which they said stifled creativity. These businesses clearly did not value their human capital as highly as they valued their organisational capital or their relational capital, as evidenced by (Pradana et al., 2020).

While some businesses had provided their employees with the training and development they needed to acquire knowledge, others had not. This runs counter to the trend of investing in staff training and development, which has been shown to be an effective way to boost creativity and incremental innovation (Osiyevskyy et al., 2020). Human resource practises, support and encouragement, training and development , and autonomy have all been cited as significant drivers of creating a culture of innovation and improving business results (Oyemomi et al., 2019).

6.3   Research Question 2: What measures are employed to assimilate (analyse, interpret, process and understand) the external knowledge?

The second line of inquiry looked into how employees assessed the relevance of newly acquired knowledge to pre-existing institutional norms and practises. The goal of this question was to discover what personal and professional factors influenced the role of absorptive capacity of employees and supervisors. Insightful themes that were distilled from the interviews were the value of specific knowledge and experience, the need of making good use of available resources and technology, the function of effective leadership, and the role of the organisation.

6.3.1 Employee and Manager Responsibilities

The interviews revealed that most employees were expected to make decisions during the assimilation period. As indicated by, Xie et al., (2018) the employees' capabilities required to analyse, process, evaluate, and understand the information came into play when making these decisions.

6.3.2 Value of specific knowledge and experience

During the assimilation stage, employees emphasised the importance of having a solid educational foundation. Mahmood & Mubarik, (2020) confirmed the inclusion of brilliant minds, assigning them the duty of adding value and aiding the organization's overall strategy.

It was highlighted by the managers that they have constructed a team of diverse individuals with different educational backgrounds. Research has indicated that diverse teams have promoted absorptive capacity with their education and experience (Ferreira et al., 2020a)

In addition, it became clear from the interviews that managers' primary responsibility was to make sure that all new hires had strong technical credentials. This was consistent with the findings of Teece et al., (2009), which showed that acquiring such dynamic capabilites necessitated on-the-job training and experience. Organisations also hired people who had done academic study on related technologies and published findings. This was relative with the findings of previous studies, showing the significance of highly skilled workers in assimilating both highly technical and business-relevant information (Hussinki et al., 2017).

Yet it was found that some managers actively discouraged critical thinking among their employees despite the fact that it was known to exist among some personnel. Contrarily, there were managers who lauded their employees' use of critical thinking skills in absorbing new information. That fitted well with what Engelman et al., (2017) said about the value of critical thinking to an organisation's human capital and how it fostered creative actions among employees.

6.3.3 Making good use of available resources and technology

Both managers and employees have acknowledged that they used outside resources to help them analyse and comprehend the information. That also included making use of any specialised resources that the service or technology partner had made available to them. These businesses have gained insight through their collaborations with external service providers and technology partners, as evidenced by (Cabrilo & Dahms, 2020).

On the other hand, businesses have traditionally relied on in-house methods and resources for analysing data. This was accomplished by making full use of existing resources and personnel while also guaranteeing that all efforts were directed toward achieving the organisation's stated goals. According to (Ahmed et al., 2020), the smooth flow of information between members of the analytic team was made possible by the company's well-developed relational capital.

In addition, these businesses have demonstrated their capability to understand the information on hand through in-house teamwork and shared expertise. In accordance with (Wang et al., 2018), companies that encourage work collaboration across departments and within the organisation to assimilate knowledge have a high absorptive capacity.

Not only were these teams able to conduct the technical analysis but they ensured that the financial analysis was a part of the assimilation process. According to studies, these highly knowledgeable workers have collaborated to enhance the company's decision-making process and are aligned with the company's objective (F. Shahzad et al., 2017).

In the design of in house specialised tools for the analysis, teams within the organisation have also depended on the special skills and expertise of personnel to ensure that the knowledge has been understood or analysed correctly. This however as per research is debatable. According to Ávila, (2022), firms cannot rely on tools and technology to assimilate data as these tangible assets can be easily replicated.

6.3.4 The function of leadership

Employees were very appreciative of the management' constructive criticism during the assimilation period. While some managers were just supportive, others were crucial in imparting both technical knowledge and managerial expertise. According to Le & Lei, (2017), transformational leadership is vital for increasing absorptive capacity since it fosters motivation, builds trust among employees, and encourages innovative thinking.

Managers played a crucial role in reporting solution and resource allocation to upper management and other key stakeholders inside the organisation. The manager's job also included making sure the team had conducted thorough data analysis and had presented a coherent and well-thought-out proposal to the relevant parties. The role of the leader was to enable innovators by creating constructive environments was outlined by Eliyana et al., (2019), who also affirmed that it was the role of leadership to encourage financial investment and the allocation of the relevant resources.

6.3.5 The role of the organisation

The interviewees all agreed that the assimilated knowledge had to be useful to the organisation's overall mission. This also had to fit within the company's financial constraints. All relevant parties were consulted, and the proposition was assessed from a business and legal standpoint. Whether a business chooses to focus on radical or gradual innovation depends on the company's innovation strategy (Lennerts et al., 2020). The literature suggested that businesses needed to weigh the time commitment and potential payoff when deciding which innovation strategy to use. Enhanced productivity and new ideas came from strong leadership and management (Osiyevskyy et al., 2020).

The interviewed managers and employees all agreed that it was the company's responsibility to foster an environment where employees were free to use their imagination and critical thinking skills in the service of the company's goals, processes and procedures. Studies have indicated that a firms success is dependent on the business culture, which is largely shaped by the way leadership, managers and employees interact (Al-Ali et al., 2017).

This correlated with the company's innovative prowess, which in turn was dependent on the information that was controlled by the knowledge management process (Butt et al., 2019). This method corresponded to what had been discussed in the literature. Following its acquisition, the data had to be analysed by the company's staff in accordance with the document control, integrated systems, or other forms in which it was stored (Shujahat et al., 2019).

However, some businesses have claimed that their employees did not fully assimilate the information and that the process had ended at that point, therefore killing any chance of further innovation. This went against the grain of the company's capital structure, which was vital in encouraging small, steady improvements in processes by giving everyone a stable base from which to branch out (Obeidat et al., 2021).

Employees who were interviewed said the organisation used key performance indicators to track things like the amount of knowledge assimilated for improving processes and the number of new ideas generated. This was aligned to the human resource practices and support and encouragement provided by the organisation to boost organisational performance (Oyemomi et al., 2019).

6.4 Research Question 3: What measures are employed to transform (develop organisational routines based on) the acquired and assimilated knowledge?

The third area of inquiry concerned the channels via which employees disseminated knowledge about operational procedures and processes inside their companies. The study's third stage of absorptive capacity involves processing and integrating new information, and the development of organisational routines, thus the researcher chose this question to better understand the interaction between mangers, employees, and the internal and external settings at this stage.

6.4.1 The employee and manager responsibilities

Employees' roles, according to those interviewed, revolved upon making decisions to some extent and transforming this new found knowledge. This was reiterated by

Engelman et al., (2017), where the discovered and analysed external knowledge had paved the way for new organisational procedures. Despite not being the ultimate decision-makers, these highly competent knowledge workers played a vital part in developing and transforming information via the process of innovation and learning, as defined by (Hussinki et al., 2017).

Moreover, as confirmed by Darwish et al., (2020), it was employees' creative actions at work that made it possible for the company to retain and transfer this knowledge. It was role of the employee to this transfer of newly generated information occurred across departments within the corporation, and spoke to studies where it was established that companies are dependent on the employees to absorb this knowledge and convert it to suit the business needs (Millar et al., 2017).

6.4.2 Value of specific knowledge and experience

Employees demonstrated a combination of their strong academic background, blended with on-the-job experience, at this stage of knowledge transformation, when organisational procedures were developed based on the acquired and assimilated knowledge. This spoke to the literature where it was revealed that highly skilled and knowledgeable individuals are required to transfer knowledge at this stage (Hussinki et al., 2017).

These individuals had to display intangible abilities such as initiative and creativity together with their technical expertise. It has reiterated the importance of human capital to the organisation (Pradana et al., 2020). It was those knowledgeable, highly skilled and motivated individuals that have played an important role in transferring this newly formed knowledge. This was in line with what was said by Ritala et al., (2018), that these employees were a part of the internal aspects that affected incremental innovation and contributed to the efficiency of an organisation.

6.4.3 Making good use of available resources and technology

The study found that using outside resources was necessary for effective knowledge transfer within the organisation. Both the manager and the employee had put up an effort in this direction. It was crucial for the process that all parties involved in the knowledge transformation be in constant contact with one another. This was in keeping with the importance of relational capital, which was founded on the expertise

gained via the firm's interactions with its clients, suppliers, joint venture partners, and other entities in the knowledge economy (Cabrilo & Dahms, 2020).

The vast majority of the individuals who were interviewed stated that they had utilised internal resources to transfer the newly obtained information. This information was shared with a number of different departments around the organisation. This was emphasised by Bernat & Karabag, (2019), who stated that the capacity for enterprises to learn was essential in order for them to be innovative. The process of transformation was made easier by having this capability.

It was emphasised that firms do not exclusively rely on sources from the outside for their information. The respondents have stated unequivocally that the organisation does, in fact, use external resources to gain access to the specialised tools necessary to integrate newly acquired information into its daily operations.

According to the research that was conducted, this was a component of relational capital. The established connections that a company had with its clients, service providers, and technology partners made it possible for the company to leverage these resources in order to acquire tools with which to transform its knowledge (Cabrilo & Dahms, 2020). In addition, it was confirmed that , technological advancements, which entailed the acquisition of technological capabilities, encouraged improvements in product, process, and service (Karabag, 2019).

However, the study also showed that the organisation relied on technical reports that were produced by internal resources in order to facilitate the transfer of information throughout the organisation. In other situations, it was made abundantly obvious that the employees themselves were responsible for the transformation of the knowledge. This correlated to previous research that suggested that firms now have the tools at their disposal to make adjustments to stimulate incremental innovation as a result of breakthroughs in technology and access to relevant tools and information (Millar et al., 2017).

The majority of those interviewed confirmed that communication was integral at this stage of integration of the new knowledge with the firms existing knowledge. This resonated with what was mentioned by , Mahmood & Mubarik, (2020), that

intellectual capital is crucial for the transformation of knowledge within an organisation because that embedded knowledge is interlinked with all of the major stakeholders.

6.4.3   The function of leadership

Most employees credited their managers with providing them with constructive feedback. One of the most prominent observation that emerged during the transformation phase was the need for managers to effectively communicate the value of the creative solution to the rest of the organisation in light of the business's long-term goals. Consistent with what was indicated by Le & Lei, (2019), leadership and information sharing have been crucial in increasing absorptive capacity, which has sparked incremental innovation and kept organisations competitive.

Managers who took on this role were accountable for managing the strategic agenda during the transformation phase. As part of this responsibility, they were tasked with ensuring that significant performance metrics were monitored and that they were meeting their targets on a consistent basis. This was also supported by Mokhber et al. (2018), who noted that better productivity in the workplace might be linked to transformational leadership that offered assistance to employees. They said that this was something that could be linked to transformational leadership that offered assistance to employees. They cited this as a potential explanation for the occurrence that was seen. The managers continued to offer their assistance despite the fact that they were merely viewing from a distance. At this point in time, there was also transactional leadership. According to research conducted by (Faraz et al., 2018). The solutions were evaluated by managers based on a number of metrics. The employee's responsibilities have been outlined, and they have receive compensation or praise for doing a good job.

On the other hand, managers have noticed a disparity between the strategic innovation goals of the organisation and the work that the employees do on a daily basis in terms of transferring this knowledge. This is something that has been observed by a very small percentage of the managers. This was in contrast to what was stated by A. M. Khan et al., (2019), where it was outlined that managers who focused on fostering enthusiasm promoted initiative in employees to be creative, and

that this innovativeness was aligned to the processes and practices of the firm, as well as the overall long-term goals of the organisation.

6.4.4   The role of the organisation

One of the most significant takeaways from the research was that only possessing technical skills was not enough to guarantee successful knowledge transformation. In order to put into practise the innovative alterations to the procedures or practises, it was necessary to take into the management of the individuals involved. This was consistent with the relational capital that the organisation had generated through the process of individuals, teams, and organisational departments communicating with one another and working together (Ahmed et al., 2020).

Resources and timeframes needed to be in sync with the financial advantage from the incremental improvements being made at this moment when institutionalised practises were being shaped. Respondents confirmed that the firm had made strategic use of the changed information to establish new standards in the business world. This was also stated in the article by Sardo and Serrasqueiro (2018); in alignment with the business aim, the structure has connected the organisation's resources for knowledge transformation. According to research, investigations of organisational or structural capital showed that it consisted of more than just processes and procedures. Trust, loyalty, productivity, customer data, practises, procedures, management structures, software, databases, and patents all played roles in the incremental innovation that led to the company's success (Zameer et al., 2022).

In this stage, the organisation did not play a hands-on role, but rather relied on previously established procedures and norms. Knowing that the company was there to support people in their knowledge-transformation efforts boosted morale and productivity across the board. This was consistent with the views of Osiyevskyy et al., (2020), who argued that R&D expenditures were crucial to the development of incremental innovation and the overall success of an organisation.

Training and development were seen as essential parts of the absorptive capacity process by most respondents. Taking these measures allowed for the modifications to be implemented more smoothly by spreading the necessary information more

widely. This spoke to the potential for absorptive capacity that was increased thanks to advances in information and communication technology, which in turn simplified the promotion of processes and practices (Santoro et al., 2018). Agreeing with this and reiterating its importance, Oyemomi et al., (2019) noted that a learning and an innovative culture, as well as autonomy, have been identified as major drivers of incremental innovation that has enhanced organisational performance.

6.5 What measures are employed to exploit (integrate the acquired, assimilated and transformed knowledge into everyday routine or processes that contributes to innovative products or services) the external knowledge?

The fourth research topic examined how employees incorporated acquired, assimilated, and transformed information into workplace procedures and practises. Integration helped enhance processes and practises incrementally. By asking this, the researcher intended to better understand the fourth phase of absorptive capacity, knowledge exploitation, and the roles of employees, managers, and internal and external settings.

6.5.1 The employee and manager responsibilities

At this point, it was determined that the employees' roles were supportive of the overall mission. The employee was required to make recommendations and provide feedback to management and the rest of the organisation, on the results of the efforts to improve company products, services, and practises at the stage of exploitation. This was in line with what was mentioned by Engelman et al., (2017) where at this stage, the knowledge that was acquired, assimilated and transformed is integrated with the organisations everyday routines. While the worker's input was low at this level, the monitoring function was critical in spreading this exploited information throughout the organisation to create new processes, practises, or services that contributed to economic growth. As a result, Schumpeter's (2017) research was corroborated, proving that innovative employees can change an organisation's resources and introduce new capabilities. Moreover, Mahmood & Mubarik, (2020)

explained how employees' links to the institutional knowledge within the company contributed to value creation generally.

6.5.2 Value of specific knowledge and experience

The study found that throughout the monitoring phase, personnel made use of their technical knowledge and skills. In the case of problems, a systematic approach was used to identify and implement fixes.

According to the findings of a study that was conducted Ferreira et al., (2020a), it was found that employees who have been the most knowledgeable and creative workers at the company have been the ones who have contributed the most to the company in terms of new ideas, innovative solutions, and advocacy for positive change.

Employees demonstrated their enthusiasm, drive, and passion to make a good contribution to the end goals through the sharing of exploited knowledge based on personal ability and traits. This was consistent with the findings of the studies carried out by Diaz-Fernandez et al. (2017), in which it was emphasised that experience as well as skills were essential to the economic success of a company.

6.5.3 Making good use of available resources and technology

During the process of capitalising on the knowledge that was acquired, assimilated, transformed, and exploited, it was stated by both managers and staff that outside resources were used. This was done in order to meet the needs of the process.

According to a number of studies, a firm's relational capital has made it easier to incorporate outside parties, such as technology partners, in the process of developing new products or services, and it has fostered ongoing incremental innovation (Randhawa et al., 2018). Ortiz et al., (2018), shared the same insights and mentioned that taking into account all factors, inter-organisational collaboration has increased knowledge sharing, provided a learning curve, and accelerated the creation of innovative new products and services. Wang et al., (2018), agreed with this research and was aligned to these findings, and stated that, those businesses with a high absorptive capacity have fostered teamwork in their day-to-day operations, which has sped up the innovation cycle.

This understanding has made it easier for employees to share and transfer knowledge within the organisation, whether through the accumulation of experience or the utilisation of external resources. Companies with a high absorptive capacity have encouraged work collaboration in their day-to-day operations, which has accelerated the innovation process

Also it was pointed out by those interviewed that numerous managers and workers and put their technical knowledge to good use that had a profoundly positive effect on incremental innovation. The critical and analytical thinking amongst team members had a positive effect sharing of knowledge within the organisation. During the exploitation phase, some workers similarly made use of in-house resources that gave them access to more seasoned and knowledgeable colleagues. This was consistent with findings from the prior study Bernat & Karabag, (2019) that demonstrated how vital the capacity to learn was for businesses to be innovative. Employees were able to make use of the organisation's accumulated knowledge as a result of this awareness.

When people worked together, new insights, ideas, and solutions emerge from their combined efforts and perspectives. The findings contradict those of (Ahmed et al., 2020), who argued that team members may share some knowledge but withhold other, more crucial details. Team members who did this were said to be limiting creativity and suppressing incremental innovation; this behaviour was termed as "knowledge hiding," and it involved keeping key information to oneself.

Most of the individuals surveyed made use of tools at this level of exploitation, although the researcher received different accounts of the types and levels of sophistication of these tools. Some tools were manual, some were simple data analysis and reporting programmes, and some were complex computer programmes. This was in line with what was stated by Millar et al., (2017) regarding how widespread improvements in technology and access to information have provided firms with more tools to make incremental improvements and stimulate innovation.

6.5.4 The function of leadership

This interviewed personnel, reaffirmed the important role that managers played in the exploitation of knowledge, which ultimately led to the development of processes and practises that, in turn, resulted in the creation of creative products or services. Consistent with findings from the work of Eliyana et al., (2019), this study confirmed what many of the interviewed personnel mentioned: that effective people management and guiding principles are crucial to any company's success.

In certain circumstances, managers were given a strategic role to perform in order to facilitate the process of exploitation. Leaders were actively involved in day-to-day operations, which helped them assist in this stage while also assuring that the company's strategic goals were met. According to the findings of several studies, this may have had the effect of stifling creative endeavours because managers were attempting to fulfil this requirement while also achieving their long-term objectives (Semuel et al., 2017).

Managers, on the other hand, acted as the project's representatives, vouching for it to ensure that all necessary steps were taken and resources were made available. The managers in the organisation helped get the word out about this innovative approach. Branding the upgrade and getting buy-in from departments throughout the company were both steps in the exploitation process. It was consistent with research showing that a company's ability to innovate increased when led by a transformational leader, flexible and motivating individual who encouraged employees to think outside the box in response to shifting conditions (Begum et al., 2022).

It was the manager's job to make sure the early-stage absorptive capacity opportunity was fully explored, leading to a better company model and a healthy profit. Consistent with Eliyana et al., (2019), leaders should drive for financial spend and resources where it will have the greatest impact on the company's ability to compete and stay relevant.

6.5.4   The role of the organisation

The vast majority of the persons who were interviewed emphasised the significance of incremental innovation having a positive effect on the processes of the company, its employees, and the culture of the organisation as a whole. As Ahmed et al., (2020) noted, these businesses were successful because of their high levels of intellectual capital.

Reconfiguring and integrating internal resources, competences, and capabilities enables change or a faster reaction in business. Furthermore, alignment to organisations strategy confirmed which ideas where deemed good or bad and which innovation to target. This was in line with , Kennedy et al., (2017) mentioned that firms , had to select between incremental and radical innovation. The latter is less likely to be pursued because of the longer development times and the higher requirements for a faster return on investment than incremental innovation.

Organisational memory that has been permanently imprinted by its history of interaction. This agreed with Cabrilo & Dahms, (2020) because the increased levels of relational capital resulted from having developed ties with various knowledge institutions including consumers, suppliers, service providers, technology partners, and so on.

Most managers and workers at this stage also agreed that the organisation itself established the strategy, and via exploitation and successful implementation sparked a newfound willingness to adapt to new circumstances and fueled the introduction of a positive innovative culture. This coincided with what was said by, Engelman et al., (2017), company-wide adoption of a set of shared beliefs, norms, practises, skills, and behaviours designed to facilitate the spread of information that ultimately led to small but meaningful innovations was a sign of a healthy culture.

The standard operating procedures and practises of most companies encouraged and enabled workers to make use of such expertise. During this period of exploitation, many staff members and managers also felt they had the tools and support they needed to do their jobs successfully. This is consistent with what was

said by Sardo & Serrasqueiro (2018), who noted that the organization's structure has connected its processes and practices for knowledge exploitation, which is in line with the company's overall purpose.

For coming up with innovative solutions and carrying them out effectively, just a minority of respondents reported receiving financial reward. This could have had an adverse effect on the incremental innovation output and the organisation performance of the organisation (Oyemomi et al., 2019).

The great majority of companies have come forward to say that training and development were essential parts of the exploiting process. Following the company's standard operating procedures, the material was disseminated. People skills were important to the achievement of the incremental innovation. This was in line with what was mentioned by Obeidat et al., (2021) that oorganisational capital had been a major factor in supporting incremental innovation by providing a shared framework upon which new activities were built. In line with this, Oyemomi et al., (2019) noted that human resource practises and a learning and inventive culture have been highlighted as major drivers for incremental innovation that has enhanced organisational performance.

6.5.5   The role of time frames

The majority of the employees and managers agreed that the amount of time required to convert an idea into a solution that could be implemented depended on factors such as the gravity of the issue, the ease with which relevant resources could be accessed, and the significance of the project that was currently being worked on. This correlates to that what was said by, Witkowski, (2017) in today's business world, where change is continual, the need of keeping up with the rapid pace of change is growing. With the lifespan of products, processes, and technologies on the decline, it is imperative that companies constantly innovate in order to remain competitive.

6.5.6   How does interaction take place

While both online and in-person communication were mentioned, it was found that the latter was much more popular among workers and supervisors. Nonverbal indications like facial expressions and body language were emphasised once more as crucial to the success of the company's internal communication. In keeping with what was indicated by Paxino et al., (2022), communication in a team context has been defined as the exchange of information and ideas through both verbal and nonverbal means.

6.5.7   How can the process be improved

Some of the managers and employees agreed that process flexibility was critical to inspiring the kind of original thought and entrepreneurial spirit that enhances existing procedures and introduces new ones, all of which contribute to the bottom line. This was in inline with that which was mentioned by Engelman et al., (2017), that an employees human capital also encompasses intangibles like flexibility and initiative which contributes to the organisational performance.

6.6   Critical Evaluation of Results

Research question : Acquisition

Only a small number of employees have any say in the matter of discovering or accumulating this information. Instead, they are constrained by rules and regulations that put a damper on their ability to think beyond the box. Contrary to what was indicated by (Hussinki et al., 2017), highly skilled and knowledgeable workers might question corporate methods and play a significant role in knowledge acquisition. There were also those employees who relied on their more seasoned co-workers for assistance. That fits with what has been mentioned about the need of combining expertise and knowledge with experience for innovation (Diaz-Fernandez et al., 2017). Although the majority of the employees interviewed by the researcher had

met the suitable recruitment criteria, a handful had said that having a higher qualification was necessary for their organisation. According to (Ferreira et al., 2020a), this confirmed the idea that the most knowledgeable and creative workers have made the most contributions to the development of incrementally new solutions.

Some interviewees mentioned resilience as a crucial trait necessary for learning after analyzing personal talents. (Karman, 2020b) echoed this sentiment, noting that resilience was one of the abilities that have allowed people to survive and thrive in the face of extraordinary adversity. The ability to recognise market openings was also seen as crucial, as experienced in the business. An employee's entrepreneurial spirit can change an organisation's resources and introduce novel capabilities, as Schumpeter (2017) noted.

In this early period, only a few had access to and made use of external resources for knowledge identification. Keeping with what was mentioned by (Cui et al., 2018), organisations that seek external knowledge can fulfil their business needs.
While some companies have said they have used Virtual reality to acquire knowledge, in line with what was mentioned by,(Bernat & Karabag, 2019), that technological advancements promote incremental improvements, maintaining a competitive edge others have not given their staff the tools they need to do their jobs.

Since most leaders are preoccupied with more strategic duties, only a small amount of managers are participating in the process at this point. Previous research had already established that leaders who are too wrapped up in the day-to-day tend to hinder innovation and cause their firms to underperform, whereas strategic leadership strikes a balance between the two, allowing for both long-term and short-term objectives to be met. (Semuel et al., 2017)

Several businesses suffered because their workers and management were not on the same page strategically. This contradicted what was stated by, (Chen et al., 2018), namely that companies who have depended mostly on incremental innovation strategies have tended to pursue possibilities that are both comfortable and straightforward, thereby sticking to the most fundamental forms of search.

Some organisations needed to focus on risk management during the process of acquisition. This was consistent with the findings of prior studies, which found that risks were highlighted during this period, but was ultimately managed by institutional systems that ensured employees followed best practices (Zameer et al., 2022)

Those who were asked about the company's innovative culture were in the minority. Consistent with earlier research, this finding highlighted the importance of a company's culture, which is formed mostly by the interactions of its leadership, managers, and employees (Al-Ali et al., 2017). Further, interviewees complained about the company's low pay structure, and this spoke to what was mentioned by (Potnuru et al., 2021), that companies operate with minimal effectiveness when they are not aligned to processes and practices.

Lastly, during this time, some businesses did not give enough thought to training and growth. This spoke to what was mentioned by (Oyemomi et al., 2019), that learning was a key driver for innovation

Research question two :Assimilation

Few of those polled said they relied solely on their past knowledge and experience when trying to make sense of and draw conclusions from new data which spoke to what (Diaz-Fernandez et al., 2017), mentioned that an individual's knowledge, experience, and abilities are vital to a company's success economically.

Some of the interviewees mentioned that employees would need to use a learning curve at this stage because critical thinking was not being used (Engelman et al., 2017). As stated by (Do et al., 2022a), this view of organisational learning as a dynamic skill that contributes to strategic agility, innovation, and enhanced business performance was shared by many.

At this point, just a small amount of people needed external tools, consistent with what was stated by (Vlačić et al., 2019) regarding how businesses have joined forces with industry giants or copied what competitors have done.

Upon investigating the nature of leadership, few individuals disclosed consulting with superiors for advice and guidance, which spoke to what was mentioned by, (Liao et al., 2017), that this leadership style created an atmosphere of openness and trust

among workers, which in turn motivated them and encouraged them to come up with novel solutions to problems and enhanced the quality of existing ones, and others criticised the validity of their hypotheses, can-do characteristics, which were previously addressed in the literature (Shipton et al., 2017), included familiarity with both the industry and the task at hand, which facilitated a smoother transition into the workforce.

A minority of respondents said that the solution's long-term viability was evaluated, specifically to ensure that it was in line with the organisation's strategy which was in line with prior work by (Witkowski, 2017) and argued that in order to succeed, businesses needed to constantly innovate, and hence, the success of any business plan hinged strongly on the organisation's adaptability.

Only a few confirmed that the material was not assimilated thoroughly and the procedure was not carried out to a logical conclusion. However, research by (Butt et al., 2019) suggested that the quality of a company's information management directly impacts its capacity for innovation.

The majority of businesses lacked KPIs to measure the value of the acquired information which corroborated findings from the literature (Oyemomi et al., 2019) that Human practices are a primary source of incremental innovation that has improved the performance of organisations.

Research question three: Transformation
In the transformation phase, technical reports submitted to the end user are used by a minority of companies, which was in line with that which was mentioned by (Butt et al., 2019) since its acquisition by employees or networks of employees, this data has been maintained in a wide variety of formats, including documentation and processes.

 Consistent with what was said by (Shipton et al., 2017), some employees believed that it was ultimately up to the individual to share their experience with others and

that having a "will do" attitude has been defined as being ready to put up an effort to help generate ideas or aid other team members.

It was important to confront the resistance from several organisations during the transformation phase. Since the corporation believes that employees became more productive and had a greater appreciation for their work, literature suggested that change was fostered. The change was inevitable but often met with resistance; this can have unintended consequences for an organisation.(Naveed et al., 2022)

Employees were not provided with enough opportunities for growth and development at some companies which was in line with (Oyemomi et al., 2019), who mentioned that human resource practices, a learning and innovative culture and autonomy have been identified as key drivers for incremental innovation that has boosted organisational performance.

Research question four : Exploitation

Only a small proportion of businesses at this stage are making use of highly experienced personnel to maximise the use of the transformed knowledge. This matched the findings of (Teece et al., 2009), which revealed that a person's employment experience, abilities, knowledge, learning, and know-how provide the groundwork for this dynamic capability

Very few companies offered financial incentives to workers who successfully transformed an idea into a measurable improvement. As has been said previously, HR practises have been recognised as essential catalysts for incremental innovation that has improved the performance of organisations. (Oyemomi et al., 2019).

A small number of respondents said that they would like to engage in the process via online discussion forums and this was in line with literature that Individuals on the team have worked independently despite geographical separation, time zone differences, and the need to adhere to established protocols and customs (Laitinen & Valo, 2018). Online collaboration has been utilised to pool resources, share innovations, and even gain intelligence on competitors.

Companies have underlined the need for flexibility and agility to speed the utilisation of knowledge. Previous research has shown that a company's absorptive ability contributes to strategic flexibility, innovation, and enhanced business performance. (Do et al., 2022a).

7 Chapter 7: Conclusion and recommendations

7.1 Introduction

The outcomes of this study, which were the stated purpose of the research problem, shed light on the role of absorptive capacity in incremental innovation. The researcher gave a presentation in which the four key research questions were

discussed. These questions led the efforts that were made to accomplish the unified study objectives and provided insight into the overall research issue.

7.2   Principal conclusion

This study's findings shed light on the role of absorptive capacity in incremental innovation, which was the stated goal of the research problem. The researcher presented the four primary research questions that guided efforts to achieve the unified study objectives and provide insight into the overall research topic.

What is the role of absorptive capacity in organisations to drive incremental innovation?

The prevalent four questions are as follows:

- What measures are employed to identify and acquire knowledge relevant to processes and practices?
- What measures are employed to assimilate the external knowledge?
- What measures are employed to transform the acquired and assimilated knowledge?
- What measures are employed to exploit the transformed knowledge into everyday routine or processes that contributes to innovative products or services

7.2.1   How do organisations, utilise the acquisition component of absorptive capacity to acquire knowledge relevant to processes and practices?

By participating in the decision-making process, workers questioned established practices within the company (Hussinki et al., 2017). The process was accelerated by using in-house expertise and top talent (Diaz-Fernandez et al., 2017; Ferreira et al., 2020a) Resilient people cultivated learning (Karman, 2020b).   Opportunities in the market were identified by those with an entrepreneurial spirit (Schumpeter 2017). The acquisition of new information and the development of new technologies were two key drivers of incremental innovation (Cui et al., 2018; Bernat & Karabag, 2019). To achieve organisational objectives, companies needed leaders with a strategic perspective (Semuel et al., 2017). Alignment with the overall business plan was then

essential (Chen et al., 2018). Methods for minimising potential business harm were implemented (Zameer et al., 2022). The firm's culture and productivity were influenced by the salaries of its employees (Potnuru et al., 2021). Education and training were major factors (Oyemomi et al., 2019)

7.2.2   How do organisations utilise the assimilation component of absorptive capacity which involves the processing, analysis, and interpretation of information gained from outside sources?

 Assimilation of information was achieved through people's own experiences and insights (Diaz-Fernandez et al., 2017). The analysis of fresh data required critical thinking (Engelman et al., 2017). As a result of strategic agility, information was assimilated, and company output was improved (Do et al., 2022a). Technological collaborators or rivals altered the procedure (Vlačić et al., 2019). Leadership fostered an environment of candour and trust (Liao et al., 2017). "Can do attributes" formed a part of personal traits (Shipton et al., 2017). Strategy analysis in organisations ensured consistency (Witkowski, 2017). Continuing until a workable answer is reached (Butt et al., 2019). Indicators of key performance were used as a map (Oyemomi et al., 2019).

7.2.3   How do organisations develop everyday routines by combining externally acquired knowledge with existing knowledge through the transformation component of absorptive capacity?

Sharing knowledge is facilitated by technical reports (Butt et al., 2019). An employee's "can do" attitude is the conduit through which information is disseminated (Shipton et al., 2017). Through communication, internal resistance was managed (Naveed et al., 2022). Knowledge is changed through a learning and innovative culture and by providing opportunities for workers Oyemomi et al., (2019), which in turn fostered incremental innovation, increased productivity and boosted economic growth.

7.2.4 How do organisations integrate the acquired, assimilated and transformed knowledge and through the absorptive capacity component of exploitation develop new competencies, processes, practices and products that foster economic growth?

Knowledge was transformed and exploited through the efforts of highly skilled professionals (Teece et al., 2009). The process of exploitation was aided by financial incentives for workers (Oyemomi et al., 2019). Information gained through online discussion was put to good use (Laitinen & Valo, 2018). Adaptability in business strategy aided in knowledge exploitation, which in turn boosted incremental innovation (Do et al., 2022a).

7.3 Practical contribution – Improving incremental innovation through the four components of absorptive capacity

7.3.1 Acquisition

The acquisition process will benefit from the possibility of a wide range of decisions being made at once (Engelman et al., 2017). It is suggested by the study's author that these highly educated and knowledgeable individuals can play a significant role in knowledge creation by challenging the status quo of conventional business procedures (Hussinki et al., 2017). Individuals' ability to bounce back from adversity is key to building a company culture that can weather external storms (Hillmann & Guenther, 2021). Even if staff members have an entrepreneurial mindset, they may need additional encouragement to effectively manage the information at their disposal (Millar et al., 2017). Developing technologies spur incremental innovations, yet this resource can be duplicated. Therefore, businesses should count on equipping workers with the means to develop advantageous levels of absorptive capacity. Although transformational leadership, which promotes encouragement and support, is advocated, strategic leaders maintain equilibrium (Liao et al., 2017). Individuals should be as aligned with the corporate goal or the requirement to manage risk as possible, yet innovation requires imagination, therefore workers should be adaptable and challenge established procedures (Engelman et al., 2017). Investing in employees through pay and training can help enhance company culture, but companies don't control their workers, and employees can always look elsewhere for employment if they're unhappy (Singh et al., 2021).

7.3.2 Assimilation

People's experiences are valuable to the assimilation process, but that's a secondary characteristic, while their willingness is essential to the generation of new ideas (Shipton et al., 2017) It is suggested that businesses give authority to their employees so that their success can be replicated easily (Pradana et al., 2020). The use of KPIs and other strategy analyses can lead to an unyielding work climate that stifles employee initiative and adaptability (Engelman et al., 2017).

7.3.3 Transformation

Because technical report sharing is so easily copied, businesses must either encourage staff to be more open-minded and resourceful or develop novel approaches to bolstering their adaptable capacities (Do et al., 2022a). It is advised that internal forces, such as employee trust and loyalty, be controlled in tandem with cultural and transitional management (Zameer et al., 2022).

7.3.4 Exploitation

Knowledge use shouldn't be reserved for experts solely. Individuals at all echelons and in all divisions of an organisation can make significant contributions (Ahmed et al., 2020). Human capital may be affected by financial incentives because workers may look for work elsewhere (Singh et al., 2021). Participants in a virtual team may withhold information or choose to withhold their full expertise (Ahmed et al., 2020).

7.4 Contribution to Literature

This research adds to the expanding body of knowledge on incremental innovation and hence contributes to the literature. However, this study indicated that the proposed model may be used flexibly to reduce time frames, promote flexibility, and foster incremental innovation, in support of what was suggested by (Xie et al., 2018).

7.5 Implications for management and other stakeholders

7.5.1 Rewards and recognition

When businesses are not in sync with established procedures, they perform at a subpar level. A possible cause is the absence of any system of incentives for creative thinking. It has been suggested that businesses review their compensation plans.

7.5.2 Flexibility and adaptability

Time constraints can be minimised by permitting certain leeway in procedures and methods. In order to effectively manage tasks, it is necessary to first assess the potential dangers involved. Organizations should strive to learn and act quickly if they need to bypass intermediate stages in the solution-generation process.

7.5.3 Training and development

Due to a lack of training and growth, absorptive capacity has been affected. For incremental innovation learning is essential. Organisational capital takes the form of an innovative culture, and the methods and practises used to transfer information that leads to incremental innovation should reflect these values, attitudes, capacity, and dedication.

7.6 Limitations of research

- Accessibility to the researcher was also a factor in choosing respondents. The study may lack depth because it was a cross-sectional analysis rather than a longitudinal one.
- Because it was a mono-method study, its findings may not have been as comprehensive as they would have been had the researchers used a mixed-method approach.

7.7 Suggestions for future research

Here, indicated some potential areas for future study.

- The study revealed that transactional, transformational and strategic leadership styles were applied. Future research should focus on other leadership styles that influence absorptive capacity and incremental innovation.
- The study focused on the manufacturing and mining sector in South Africa. Further depth could be added by investigating organisations in other sectors

7.8 Conclusion

Theoretical evaluation through literature found that the components of absorptive capacity influence incremental innovation through themes of employee and manager responsibilities, the value of specific knowledge, the need of making good use of available resources and technology, the function of effective leadership and the role of the organisation.

The study highlighted the practical recommendations to organisations to improve innovation as well as the managerial and stakeholder recommendations.

8 References

Abubakar, A. M., Elrehail, H., Alatailat, M. A., & Elçi, A. (2019). Knowledge management, decision-making style and organizational performance. *Journal of Innovation and Knowledge*, *4*(2), 104–114. https://doi.org/10.1016/j.jik.2017.07.003

Ahmed, S. S., Guozhu, J., Mubarik, S., Khan, M., & Khan, E. (2020). Intellectual capital and business performance: the role of dimensions of absorptive capacity. *Journal of Intellectual Capital*, *21*(1), 23–39. https://doi.org/10.1108/JIC-11-2018-0199

Al-Ali, A. A., Singh, S. K., Al-Nahyan, M., & Sohal, A. S. (2017). Change management through leadership: the mediating role of organizational culture. *International Journal of Organizational Analysis*, *25*(4), 723–739. https://doi.org/10.1108/IJOA-01-2017-1117

Al Ghazo, R. H., Suifan, T. S., & Alnuaimi, M. (2019). Emotional intelligence and counterproductive work behavior: The mediating role of organizational climate. *Journal of Human Behavior in the Social Environment*, *29*(3), 333–345. https://doi.org/10.1080/10911359.2018.1533504

Al Halbusi, H. (2022). Who pays attention to the moral aspects? Role of organizational justice and moral attentiveness in leveraging ethical behavior. *International Journal of Ethics and Systems*, *38*(3), 357–379. https://doi.org/10.1108/IJOES-09-2021-0180

Alamayreh, E. M., Sweis, R. J., & Obeidat, B. Y. (2019). The relationship among innovation, organisational ambidexterity and organisational performance. *International Journal of Business Innovation and Research*, *19*(4), 554–579. https://doi.org/10.1504/IJBIR.2019.101656

Alerasoul, S. A., Afeltra, G., Hakala, H., Minelli, E., & Strozzi, F. (2021). Organisational learning, learning organisation, and learning orientation: An integrative review and framework. *Human Resource Management Review*, *xxxx*, 100854. https://doi.org/10.1016/j.hrmr.2021.100854

Ali, M., Ali, I., Al-Maimani, K. A., & Park, K. (2018). The effect of organizational structure on absorptive capacity in single and dual learning modes. *Journal of Innovation and Knowledge*, *3*(3), 108–114. https://doi.org/10.1016/j.jik.2017.03.007

Alizadeh, Y., & Jetter, A. J. (2019). Pathways for Balancing Exploration and Exploitation in Innovations: A Review and Expansion of Ambidexterity Theory. *International Journal of Innovation and Technology Management*, *16*(5). https://doi.org/10.1142/S0219877019500329

Alrowwad, A., Abualoush, S. H., & Masa'deh, R. (2020). Innovation and intellectual capital as intermediary variables among transformational leadership, transactional leadership, and organizational performance. *Journal of Management Development*, *39*(2), 196–222. https://doi.org/10.1108/JMD-02-2019-0062

Ávila, M. M. (2022). Competitive Advantage and Knowledge Absorptive Capacity: the Mediating Role of Innovative Capability. *Journal of the Knowledge Economy*, *13*(1), 185–210. https://doi.org/10.1007/s13132-020-00708-3

Ayoub, H. F., Abdallah, A. B., & Suifan, T. S. (2017). The effect of supply chain integration on technical innovation in Jordan: The mediating role of knowledge management. *Benchmarking*, *24*(3), 594–616.

https://doi.org/10.1108/BIJ-06-2016-0088

Baškarada, S., & Koronios, A. (2018). The 5S organizational agility framework: a dynamic capabilities perspective. *International Journal of Organizational Analysis*, *26*(2), 331–342. https://doi.org/10.1108/IJOA-05-2017-1163

Batarseh, F. S., Usher, J. M., & Daspit, J. J. (2017). Absorptive capacity in virtual teams: Examining the influence on diversity and innovation. *Journal of Knowledge Management*, *21*(6), 1342–1361. https://doi.org/10.1108/JKM-06-2016-0221

Begum, S., Xia, E., Ali, F., Awan, U., & Ashfaq, M. (2022). Achieving green product and process innovation through green leadership and creative engagement in manufacturing. *Journal of Manufacturing Technology Management*, *33*(4), 656–674. https://doi.org/10.1108/JMTM-01-2021-0003

Bernat, S., & Karabag, S. F. (2019). Strategic alignment of technology: Organising for technology upgrading in emerging economy firms. *Technological Forecasting and Social Change*, *145*(May 2018), 295–306. https://doi.org/10.1016/j.techfore.2018.05.009

Bhatia, M. S. (2021). Green process innovation and operational performance: The role of proactive environment strategy, technological capabilities, and organizational learning. *Business Strategy and the Environment*, *30*(7), 2845–2857. https://doi.org/10.1002/bse.2775

Bogers, M., Foss, N. J., & Lyngsie, J. (2018). The "human side" of open innovation: The role of employee diversity in firm-level openness. *Research Policy*, *47*(1), 218–231. https://doi.org/10.1016/j.respol.2017.10.012

Božič, K., & Dimovski, V. (2019). Business intelligence and analytics use, innovation ambidexterity, and firm performance: A dynamic capabilities perspective. *Journal of Strategic Information Systems*, *28*(4), 101578. https://doi.org/10.1016/j.jsis.2019.101578

Butt, M. A., Nawaz, F., Hussain, S., Sousa, M. J., Wang, M., Sumbal, M. S., & Shujahat, M. (2019). Individual knowledge management engagement, knowledge-worker productivity, and innovation performance in knowledge-based organizations: the implications for knowledge processes and knowledge-based systems. *Computational and Mathematical Organization Theory*, *25*(3), 336–356. https://doi.org/10.1007/s10588-018-9270-z

Cabrilo, S., & Dahms, S. (2020). The Role of Multidimensional Intellectual Capital and Organizational Learning Practices in Innovation Performance. *European Management Review*, *17*(4), 835–855. https://doi.org/10.1111/emre.12396

Cai, Q., Ying, Y., Liu, Y., & Wu, W. (2019). Innovating with limited resources: The antecedents and consequences of frugal innovation. *Sustainability (Switzerland)*, *11*(20), 1–23. https://doi.org/10.3390/su11205789

Cao, X., & Ali, A. (2018). Enhancing team creative performance through social media and transactive memory system. *International Journal of Information Management*, *39*(November 2017), 69–79. https://doi.org/10.1016/j.ijinfomgt.2017.11.009

Chen, C. J., Lin, B. W., Lin, J. Y., & Hsiao, Y. C. (2018). Technological diversity, knowledge flow and capacity, and industrial innovation. *Technology Analysis and Strategic Management*, *30*(12), 1365–1377. https://doi.org/10.1080/09537325.2018.1472759

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive Capacity : A New Perspective on Learning and Innovation Author (s): Wesley M . Cohen and Daniel A . Levinthal Source : Administrative Science Quarterly , Vol . 35 , No . 1 ,

Special Issue : Technology , Organizations , and Innovation (Mar .,. 8/*Administrative Science Quarterly, 35*(1), 128–152.

Creswell, J. W. (2016). Qualitative inquiry and research design: Choosing among five approaches (second ed.). SAGE.

Cui, L., Fan, D., Guo, F., & Fan, Y. (2018). Explicating the relationship of entrepreneurial orientation and firm performance: Underlying mechanisms in the context of an emerging market. *Industrial Marketing Management*, *71*(September 2017), 27–40. https://doi.org/10.1016/j.indmarman.2017.11.003

D'Innocenzo, L., Mathieu, J. E., & Kukenberger, M. R. (2016). A Meta-Analysis of Different Forms of Shared Leadership–Team Performance Relations. *Journal of Management*, *42*(7), 1964–1991. https://doi.org/10.1177/0149206314525205

Darwish, T. K., Zeng, J., Rezaei Zadeh, M., & Haak-Saheem, W. (2020). Organizational Learning of Absorptive Capacity and Innovation: Does Leadership Matter? *European Management Review*, *17*(1), 83–100. https://doi.org/10.1111/emre.12320

Diaz-Fernandez, M., Pasamar-Reyes, S., & Valle-Cabrera, R. (2017). Human capital and human resource management to achieve ambidextrous learning: A structural perspective. *BRQ Business Research Quarterly*, *20*(1), 63–77. https://doi.org/10.1016/j.brq.2016.03.002

Do, H., Budhwar, P., Shipton, H., Nguyen, H. D., & Nguyen, B. (2022a). Building organizational resilience, innovation through resource-based management initiatives, organizational learning and environmental dynamism. *Journal of Business Research*, *141*(November 2021), 808–821. https://doi.org/10.1016/j.jbusres.2021.11.090

Do, H., Budhwar, P., Shipton, H., Nguyen, H. D., & Nguyen, B. (2022b). Building organizational resilience, innovation through resource-based management initiatives, organizational learning and environmental dynamism. *Journal of Business Research*, *141*(December 2021), 808–821. https://doi.org/10.1016/j.jbusres.2021.11.090

Dodge, R., Dwyer, J., Witzeman, S., Neylon, S., & Taylor, S. (2017). The Role of Leadership in Innovation: A quantitative analysis of a large data set examines the relationship between organizational culture, leadership behaviors, and innovativeness. *Research Technology Management*, *60*(3), 22–29. https://doi.org/10.1080/08956308.2017.1301000

Duchek, S. (2020). Organizational resilience: a capability-based conceptualization. *Business Research*, *13*(1), 215–246. https://doi.org/10.1007/s40685-019-0085-7

Dulebohn, J. H., & Hoch, J. E. (2017). Virtual teams in organizations. *Human Resource Management Review*, *27*(4), 569–574. https://doi.org/10.1016/j.hrmr.2016.12.004

Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal*, *21*(10–11), 1105–1121. https://doi.org/10.1002/1097-0266(200010/11)21:10/11<1105::AID-SMJ133>3.0.CO;2-E

Eliyana, A., Ma'arif, S., & Muzakki. (2019). Job satisfaction and organizational commitment effect in the transformational leadership towards employee performance. *European Research on Management and Business*

Economics, 25(3), 144–150. https://doi.org/10.1016/j.iedeen.2019.05.001

Engelman, R. M., Fracasso, E. M., Schmidt, S., & Zen, A. C. (2017). Intellectual capital, absorptive capacity and product innovation. *Management Decision, 55*(3), 474–490. https://doi.org/10.1108/MD-05-2016-0315

Enkel, E., Heil, S., Hengstler, M., & Wirth, H. (2017). Exploratory and exploitative innovation: To what extent do the dimensions of individual level absorptive capacity contribute? *Technovation, 60–61*(October 2016), 29–38. https://doi.org/10.1016/j.technovation.2016.08.002

Escrig-Tena, A. B., Segarra-Ciprés, M., & García-Juan, B. (2021). Incremental and radical product innovation capabilities in a quality management context: Exploring the moderating effects of control mechanisms. *International Journal of Production Economics, 232*(April 2020). https://doi.org/10.1016/j.ijpe.2020.107994

Faraz, N. A., Yanxia, C., Ahmed, F., Estifo, G. Z., & Raza, A. (2018). LIT SEARCH The Influence of Transactional Leadership on Innovative Work Behavior-a Mediation Model. *European Journal of Business and Social Sciences, 07*(01), 51–62.

Fatima, T., Majeed, M., & Shah, S. Z. A. (2018). Jeopardies of aversive leadership: A conservation of resources theory approach. *Frontiers in Psychology, 9*(OCT), 1–12. https://doi.org/10.3389/fpsyg.2018.01935

Ferreira, J., Coelho, A., & Moutinho, L. (2020a). Dynamic capabilities, creativity and innovation capability and their impact on competitive advantage and firm performance: The moderating role of entrepreneurial orientation. *Technovation, 92–93*(February 2017), 102061. https://doi.org/10.1016/j.technovation.2018.11.004

Ferreira, J., Coelho, A., & Moutinho, L. (2020b). Dynamic capabilities, creativity and innovation capability and their impact on competitive advantage and firm performance: The moderating role of entrepreneurial orientation. *Technovation, 92–93*(November 2018), 102061. https://doi.org/10.1016/j.technovation.2018.11.004

Gao, S., Yeoh, W., Wong, S. F., & Scheepers, R. (2017). A literature analysis of the use of Absorptive Capacity construct in IS research. *International Journal of Information Management, 37*(2), 36–42. https://doi.org/10.1016/j.ijinfomgt.2016.11.001

Garcia Martinez, M., Zouaghi, F., & Garcia Marco, T. (2017). Diversity is strategy: the effect of R&D team diversity on innovative performance. *R and D Management, 47*(2), 311–329. https://doi.org/10.1111/radm.12244

Garvin, D. (1993). Building a learning organisation. Harvard Business Review, 78

- 91.

Gault, F. (2018). Defining and measuring innovation in all sectors of the economy. *Research Policy, 47*(3), 617–622. https://doi.org/10.1016/j.respol.2018.01.007

Ghebrihiwet, N. (2019). FDI technology spillovers in the mining industry: Lessons from South Africa's mining sector. *Resources Policy, 62*(April 2018), 463–471. https://doi.org/10.1016/j.resourpol.2018.04.005

Graesser, A. C., Fiore, S. M., Greiff, S., Andrews-Todd, J., Foltz, P. W., & Hesse, F. W. (2018). Advancing the Science of Collaborative Problem Solving. *Psychological Science in the Public Interest, 19*(2), 59–92. https://doi.org/10.1177/1529100618808244

Greener, S., & Martelli, J. (2018). An Introduction to Business Research Methods (3rd ed.). Sheffield: Bookboon.

Hair Jr, J. F., Celsi, M. W., Money, A. H., Samouel, P., & Page, M. J. (2019). Business Research Methods (Vol. second edition). London: M E Sharpe

Han, S., Lyu, Y., Ji, R., Zhu, Y., Su, J., & Bao, L. (2020). Open innovation, network embeddedness and incremental innovation capability. *Management Decision*, *58*(12), 2655–2680. https://doi.org/10.1108/MD-08-2019-1038

Hennik, M., Hutter, I., & Bailey, A. (2020). Qualitiative Research Methods (2 ed.). Sage.

Hillmann, J., & Guenther, E. (2021). Organizational Resilience: A Valuable Construct for Management Research? *International Journal of Management Reviews*, *23*(1), 7–44. https://doi.org/10.1111/ijmr.12239

Hoch, J. E., & Dulebohn, J. H. (2017). Team personality composition, emergent leadership and shared leadership in virtual teams: A theoretical framework. *Human Resource Management Review*, *27*(4), 678–693. https://doi.org/10.1016/j.hrmr.2016.12.012

Holbeche, L. S. (2018). Organisational effectiveness and agility. *Journal of Organizational Effectiveness*, *5*(4), 302–313. https://doi.org/10.1108/JOEPP-07-2018-0044

Hoosbeek, A., & de Vries, J. (2021). Stakeholder influence on teaming and absorptive capacity in innovation networks. *Creativity and Innovation Management*, *30*(3), 632–650. https://doi.org/10.1111/caim.12448

Hussinki, H., Ritala, P., Vanhala, M., & Kianto, A. (2017). Intellectual capital, knowledge management practices and firm performance. *Journal of Intellectual Capital*, *18*(4), 904–922. https://doi.org/10.1108/JIC-11-2016-0116

Hutton, S., Demir, R., & Eldridge, S. (2021). How does open innovation contribute to the firm's dynamic capabilities? *Technovation*, *106*(April), 102288. https://doi.org/10.1016/j.technovation.2021.102288

Jia, X., Chen, J., Mei, L., & Wu, Q. (2018). How leadership matters in organizational innovation: a perspective of openness. *Management Decision*, *56*(1), 6–25. https://doi.org/10.1108/MD-04-2017-0415

Jiang, Z., & Liu, Z. (2022). Policies and exploitative and exploratory innovations of the wind power industry in China: The role of technological path dependence. *Technological Forecasting and Social Change*, *177*(February), 121519. https://doi.org/10.1016/j.techfore.2022.121519

Kang, M., & Lee, M. J. (2017). Absorptive capacity, knowledge sharing, and innovative behaviour of R&D employees. *Technology Analysis and Strategic Management*, *29*(2), 219–232. https://doi.org/10.1080/09537325.2016.1211265

Karabag, S. F. (2019). Factors impacting firm failure and technological development: A study of three emerging-economy firms. *Journal of Business Research*, *98*(July 2017), 462–474. https://doi.org/10.1016/j.jbusres.2018.03.008

Karman, A. (2020). An examination of factors influencing the application of mechanisms of organizations' resilience to weather extremes. *Business Strategy and the Environment*, *29*(1), 276–290.

https://doi.org/10.1002/bse.2364

Kennedy, S., Whiteman, G., & van den Ende, J. (2017). Radical Innovation for Sustainability: The Power of Strategy and Open Innovation. *Long Range Planning*, *50*(6), 712–725. https://doi.org/10.1016/j.lrp.2016.05.004

Khan, A. M., Jantan, A. H. Bin, Salleh, L. B. M., Dato'Mansor, Z., Islam, M. A., & Hosen, S. (2019). The impact of transformational leadership effects on innovative work behavior by the moderating role of psychological empowerment. *Journal of Reviews on Global Economics*, *8*, 925–938. https://doi.org/10.6000/1929-7092.2019.08.79

Khan, Z., Lew, Y. K., & Marinova, S. (2019). Exploitative and exploratory innovations in emerging economies: The role of realized absorptive capacity and learning intent. *International Business Review*, *28*(3), 499–512. https://doi.org/10.1016/j.ibusrev.2018.11.007

Laitinen, K., & Valo, M. (2018). Meanings of communication technology in virtual team meetings: Framing technology-related interaction. *International Journal of Human Computer Studies*, *111*(October 2017), 12–22. https://doi.org/10.1016/j.ijhcs.2017.10.012

Lam, L., Nguyen, P., Le, N., & Tran, K. (2021). The relation among organizational culture, knowledge management, and innovation capability: Its implication for open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, *7*(1), 1–16. https://doi.org/10.3390/joitmc7010066

Le, P. B., & Lei, H. (2017). How transformational leadership supports knowledge sharing: Evidence from Chinese manufacturing and service firms. *Chinese Management Studies*, *11*(3), 479–497. https://doi.org/10.1108/CMS-02-2017-0039

Le, P. B., & Lei, H. (2019). Determinants of innovation capability: the roles of transformational leadership, knowledge sharing and perceived organizational support. *Journal of Knowledge Management*, *23*(3), 527–547. https://doi.org/10.1108/JKM-09-2018-0568

Lennerts, S., Schulze, A., & Tomczak, T. (2020). The asymmetric effects of exploitation and exploration on radical and incremental innovation performance: An uneven affair. *European Management Journal*, *38*(1), 121–134. https://doi.org/10.1016/j.emj.2019.06.002

Lowe, A., Norris, A. C., Farris, A. J., & Babbage, D. R. (2018). Quantifying Thematic Saturation in Qualitative Data Analysis. Field Methods, 191-207.

Li, C., Sun, L. Y., & Dong, Y. (2018). Innovating via building absorptive capacity: Interactive effects of top management support of learning, employee learning orientation and decentralization structure. *Creativity and Innovation Management*, *27*(4), 431–443. https://doi.org/10.1111/caim.12261

Liao, S. H., Chen, C. C., Hu, D. C., Chung, Y. C., & Liu, C. L. (2017). Assessing the influence of leadership style, organizational learning and organizational innovation. *Leadership and Organization Development Journal*, *38*(5), 590–609. https://doi.org/10.1108/LODJ-11-2015-0261

Liu, D., Gong, Y., Zhou, J., & Huang, J. C. (2017). Human resource systems, employee creativity, and firm innovation: The moderating role of firm ownership. *Academy of Management Journal*, *60*(3), 1164–1188. https://doi.org/10.5465/amj.2015.0230

Mahmood, T., & Mubarik, M. S. (2020). Balancing innovation and exploitation in the fourth industrial revolution: Role of intellectual capital and technology

absorptive capacity. *Technological Forecasting and Social Change*, *160*(June), 120248. https://doi.org/10.1016/j.techfore.2020.120248

Martínez-Román, J. A., Tamayo, J. A., & Gamero, J. (2017). Innovativeness and its influence on growth and market extension in construction firms in the Andalusian region. *Journal of Engineering and Technology Management - JET-M*, *43*, 19–33. https://doi.org/10.1016/j.jengtecman.2016.11.002

Mijiyawa, A. G. (2017). Drivers of Structural Transformation: The Case of the Manufacturing Sector in Africa. *World Development*, *99*, 141–159. https://doi.org/10.1016/j.worlddev.2017.07.007

Millar, C. C. J. M., Chen, S., & Waller, L. (2017). Leadership, knowledge and people in knowledge-intensive organisations: implications for HRM theory and practice. *International Journal of Human Resource Management*, *28*(2), 261–275. https://doi.org/10.1080/09585192.2016.1244919

MITHANI, M. A. (2020). Adaptation in the face of the new normal. *Academy of Management Perspectives*, *34*(4), 508–530. https://doi.org/10.5465/AMP.2019.0054

Mokhber, M., Khairuzzaman, W., & Vakilbashi, A. (2018). Leadership and innovation: The moderator role of organization support for innovative behaviors. *Journal of Management and Organization*, *24*(1), 108–128. https://doi.org/10.1017/jmo.2017.26

Moser, A., & Korstjens, I. (2018). Series Practical guide to qualitative research. Part 3: Sampling, data collection and analysis. European Journal of General Practice, 24, 9-18.

Naveed, R. T., Alhaidan, H., Halbusi, H. Al, & Al-Swidi, A. K. (2022). Do organizations really evolve? The critical link between organizational culture and organizational innovation toward organizational effectiveness: Pivotal role of organizational resistance. *Journal of Innovation and Knowledge*, *7*(2), 100178. https://doi.org/10.1016/j.jik.2022.100178

Navimipour, N. J., Milani, F. S., & Hossenzadeh, M. (2018). A model for examining the role of effective factors on the performance of organizations. *Technology in Society*, *55*(June), 166–174. https://doi.org/10.1016/j.techsoc.2018.06.003

Nayak, B. (2019). *Integrating wearable technology products and big data analytics in business strategy*. *21*(2), 255–275. https://doi.org/10.1108/JSIT-08-2018-0109

Obeidat, U., Obeidat, B., Alrowwad, A., Alshurideh, M., Masa'deh, R., & Abuhashesh, M. (2021). The effect of intellectual capital on competitive advantage: The mediating role of innovation. *Management Science Letters*, *11*, 1331–1344. https://doi.org/10.5267/j.msl.2020.11.006

Ortiz, B., Donate, M. J., & Guadamillas, F. (2018). Inter-organizational social capital as an antecedent of a firm's knowledge identification capability and external knowledge acquisition. *Journal of Knowledge Management*, *22*(6), 1332–1357. https://doi.org/10.1108/JKM-04-2017-0131

Osiyevskyy, O., Shirokova, G., & Ritala, P. (2020). Exploration and exploitation in crisis environment: Implications for level and variability of firm performance. *Journal of Business Research*, *114*(July 2019), 227–239. https://doi.org/10.1016/j.jbusres.2020.04.015

Oyemomi, O., Liu, S., Neaga, I., Chen, H., & Nakpodia, F. (2019). How cultural impact on knowledge sharing contributes to organizational performance:

Using the fsQCA approach. *Journal of Business Research*, *94*(February 2018), 313–319. https://doi.org/10.1016/j.jbusres.2018.02.027

Paxino, J., Denniston, C., Woodward-Kron, R., & Molloy, E. (2022). Communication in interprofessional rehabilitation teams: a scoping review. *Disability and Rehabilitation*, *44*(13), 3253–3269. https://doi.org/10.1080/09638288.2020.1836271

Penrose, E. (1996). Growth of the firm and networking. International Encyclopaedia of Business and Management, 1716 - 1724.

Potnuru, R. K. G., Sahoo, C. K., & Parle, K. C. (2021). HRD practices, employee competencies and organizational effectiveness: role of organizational learning culture. *Journal of Asia Business Studies*, *15*(3), 401–419. https://doi.org/10.1108/JABS-06-2020-0237

Pradana, M., Pérez-Luño, A., & Fuentes-Blasco, M. (2020). Innovation as the key to gain performance from absorptive capacity and human capital. *Technology Analysis and Strategic Management*, *32*(7), 822–834. https://doi.org/10.1080/09537325.2020.1714578

Prior, D. D., Keränen, J., & Koskela, S. (2018). Sensemaking, sensegiving and absorptive capacity in complex procurements. *Journal of Business Research*, *88*(June 2017), 79–90. https://doi.org/10.1016/j.jbusres.2018.03.009

Racela, O. C., & Thoumrungroje, A. (2020). Enhancing Export Performance through Proactive Export Market Development Capabilities and ICT Utilization. *Journal of Global Marketing*, *33*(1), 46–63. https://doi.org/10.1080/08911762.2018.1549302

Randhawa, K., Wilden, R., & Gudergan, S. (2018). Open Service Innovation: The Role of Intermediary Capabilities. *Journal of Product Innovation Management*, *35*(5), 808–838. https://doi.org/10.1111/jpim.12460

Rangus, K., & Slavec, A. (2017). The interplay of decentralization, employee involvement and absorptive capacity on firms' innovation and business performance. *Technological Forecasting and Social Change*, *120*, 195–203. https://doi.org/10.1016/j.techfore.2016.12.017

Ritala, P., Baiyere, A., Hughes, M., & Kraus, S. (2021). Digital strategy implementation: The role of individual entrepreneurial orientation and relational capital. *Technological Forecasting and Social Change*, *171*(May), 120961. https://doi.org/10.1016/j.techfore.2021.120961

Roos, G. (2017). Knowledge management, intellectual capital, structural holes, economic complexity and national prosperity. *Journal of Intellectual Capital*, *18*(4), 745–770. https://doi.org/10.1108/JIC-07-2016-0072

Sabahi, S., & Parast, M. M. (2020). Firm innovation and supply chain resilience: a dynamic capability perspective. *International Journal of Logistics Research and Applications*, *23*(3), 254–269. https://doi.org/10.1080/13675567.2019.1683522

Sadeghi, A., & Rad, F. M. (2018). The role of knowledge-oriented leadership in knowledge management and innovation. *Management Science Letters*, *8*(3), 151–160. https://doi.org/10.5267/j.msl.2018.1.003

Saemundsson, R. J., & Candi, M. (2017). Absorptive capacity and the identification of opportunities in new technology-based firms. *Technovation*, *64–65*(November 2016), 43–49. https://doi.org/10.1016/j.technovation.2017.06.001

Santoro, G., Vrontis, D., Thrassou, A., & Dezi, L. (2018). The Internet of Things: Building a knowledge management system for open innovation and knowledge management capacity. *Technological Forecasting and Social Change*, *136*, 347–354. https://doi.org/10.1016/j.techfore.2017.02.034

Sardo, F., & Serrasqueiro, Z. (2018). Intellectual capital, growth opportunities, and financial performance in European firms: Dynamic panel data analysis. *Journal of Intellectual Capital*, *19*(4), 747–767. https://doi.org/10.1108/JIC-07-2017-0099

Saunders, M., & Lewis, P. (2018). Doing research in business management (2nd ed.). Harlow, England: Pearson.

Savino, T., Messeni Petruzzelli, A., & Albino, V. (2017). Search and Recombination Process to Innovate: A Review of the Empirical Evidence and a Research Agenda. *International Journal of Management Reviews*, *19*(1), 54–75. https://doi.org/10.1111/ijmr.12081

Schlagwein, D., & Hu, M. (2017). How and why organisations use social media: Five use types and their relation to absorptive capacity. *Journal of Information Technology*, *32*(2), 194–209. https://doi.org/10.1057/jit.2016.7

Scuotto, V., Del Giudice, M., & Carayannis, E. G. (2017). The effect of social networking sites and absorptive capacity on SMES' innovation performance. *Journal of Technology Transfer*, *42*(2), 409–424. https://doi.org/10.1007/s10961-016-9517-0

Semuel, H., Siagian, H., & Octavia, S. (2017). The Effect of Leadership and Innovation on Differentiation Strategy and Company Performance. *Procedia - Social and Behavioral Sciences*, *237*(June 2016), 1152–1159. https://doi.org/10.1016/j.sbspro.2017.02.171

Shahzad, F., Xiu, G. Y., & Shahbaz, M. (2017). Organizational culture and innovation performance in Pakistan's software industry. *Technology in Society*, *51*, 66–73. https://doi.org/10.1016/j.techsoc.2017.08.002

Shahzad, M., Qu, Y., Zafar, A. U., Rehman, S. U., & Islam, T. (2020). Exploring the influence of knowledge management process on corporate sustainable performance through green innovation. *Journal of Knowledge Management*, *24*(9), 2079–2106. https://doi.org/10.1108/JKM-11-2019-0624

Sharma, G. (2017). Pros and cons of different sampling techniques. International Journal of Applied Research.

Shipton, H., Sparrow, P., Budhwar, P., & Brown, A. (2017). HRM and innovation: looking across levels. *Human Resource Management Journal*, *27*(2), 246–263. https://doi.org/10.1111/1748-8583.12102

Shuffler, M. L., Diazgranados, D., Maynard, M. T., & Salas, E. (2018). Developing, sustaining, and maximizing team effectiveness: An integrative, dynamic perspective of team development interventions. *Academy of Management Annals*, *12*(2), 688–724. https://doi.org/10.5465/annals.2016.0045

Shujahat, M., Sousa, M. J., Hussain, S., Nawaz, F., Wang, M., & Umer, M. (2019). Translating the impact of knowledge management processes into knowledge-based innovation: The neglected and mediating role of knowledge-worker productivity. *Journal of Business Research*, *94*(November 2017), 442–450. https://doi.org/10.1016/j.jbusres.2017.11.001

Singh, S. K., Gupta, S., Busso, D., & Kamboj, S. (2021). Top management knowledge value, knowledge sharing practices, open innovation and organizational performance. *Journal of Business Research*, *128*(November 2018), 788–798. https://doi.org/10.1016/j.jbusres.2019.04.040

Siregar, Z. M. E., Suryana, Ahman, E., & Senen, S. H. (2019). Factors influencing innovative work behavior: An individual factors perspective. *International Journal of Scientific and Technology Research*, *8*(9), 324–327.

Statista. (2022). *Mining industry worldwide - statistics & facts*

https://www.statista.com/topics/1143/mining/#topicHeader__wrapper

Statistics South Africa. (2022). South African Gross Domestic Product - P0441. *Statistics South Africa*, *June*.

Stokes, P., Smith, S., Wall, T., Moore, N., Rowland, C., Ward, T., & Cronshaw, S. (2019). Resilience and the (micro-)dynamics of organizational ambidexterity: implications for strategic HRM. *International Journal of Human Resource Management*, *30*(8), 1287–1322. https://doi.org/10.1080/09585192.2018.1474939

Sun, X., Li, H., & Ghosal, V. (2020). Firm-level human capital and innovation: Evidence from China. *China Economic Review*, *59*(February 2018), 101388. https://doi.org/10.1016/j.chieco.2019.101388

Teece, D. J., Pisano, G., & Shuen, A. (2009). Dynamic capabilities and strategic management. *Knowledge and Strategy*, *18*(April 1991), 77–116. https://doi.org/10.1093/0199248540.003.0013

Tiferes, J., & Bisantz, A. M. (2018). The impact of team characteristics and context on team communication: An integrative literature review. *Applied Ergonomics*, *68*(November 2017), 146–159. https://doi.org/10.1016/j.apergo.2017.10.020

Tortorella, G. L., Cawley Vergara, A. Mac, Garza-Reyes, J. A., & Sawhney, R. (2020). Organizational learning paths based upon industry 4.0 adoption: An empirical study with Brazilian manufacturers. *International Journal of Production Economics*, *219*(July 2019), 284–294. https://doi.org/10.1016/j.ijpe.2019.06.023

Uhl-Bien, M., & Arena, M. (2017). Complexity leadership: Enabling people and organizations for adaptability. *Organizational Dynamics*, *46*(1), 9–20. https://doi.org/10.1016/j.orgdyn.2016.12.001

UNIDO. (2022). *Industrial Development Report 2022: The Future of Industrialization in a Post-Pandemic World*. http://www.worldcat.org/title/breaking-in-and-moving-up-new-industrial-challenges-for-the-bottom-billion-and-the-middle-income-countries/oclc/317717289&referer=brief_results%0Ahttps://www.unido.org/idr2022%0Ahttps://www.unido.org/sites/default/files/files

Valcarcel, M., Giner-Casares, J. J., Witell, L., Snyder, H., Gustafsson, A., Fombelle, P., Kristensson, P., Gault, F., Lennerts, S., Schulze, A., Tomczak, T., Pradana, M., Pérez-Luño, A., Fuentes-Blasco, M., Escrig-Tena, A. B., Segarra-Ciprés, M., & García-Juan, B. (2020). Defining and measuring innovation in all sectors of the economy. *Journal of Business Research*, *32*(8), 822–834. https://doi.org/10.1016/j.jbusres.2015.12.055

Vandavasi, R. K. K., McConville, D. C., Uen, J. F., & Yepuru, P. (2020). Knowledge sharing, shared leadership and innovative behaviour: a cross-level analysis. *International Journal of Manpower*, *41*(8), 1221–1233.

https://doi.org/10.1108/IJM-04-2019-0180

Vercher, N., Bosworth, G., & Esparcia, J. (2022). Developing a framework for radical and incremental social innovation in rural areas. *Journal of Rural Studies*, *xxxx*. https://doi.org/10.1016/j.jrurstud.2022.01.007

Vlačić, E., Dabić, M., Daim, T., & Vlajčić, D. (2019). Exploring the impact of the level of absorptive capacity in technology development firms. *Technological Forecasting and Social Change*, *138*(August 2018), 166–177. https://doi.org/10.1016/j.techfore.2018.08.018

Wang, L., Zhao, J. Z., & Zhou, K. Z. (2018). How do incentives motivate absorptive capacity development? The mediating role of employee learning and relational contingencies. *Journal of Business Research*, *85*(January), 226–237. https://doi.org/10.1016/j.jbusres.2018.01.010

World Bank. (2022). The World Bank in South Africa. Retrieved from The World Bank: https://www.worldbank.org/en/country/southafrica/overview#1

Witkowski, K. (2017). Internet of Things, Big Data, Industry 4.0 - Innovative Solutions in Logistics and Supply Chains Management. *Procedia Engineering*, *182*, 763–769. https://doi.org/10.1016/j.proeng.2017.03.197

Xie, X., Zou, H., & Qi, G. (2018). Knowledge absorptive capacity and innovation performance in high-tech companies: A multi-mediating analysis. *Journal of Business Research*, *88*(June 2017), 289–297. https://doi.org/10.1016/j.jbusres.2018.01.019

Yeow, A., Soh, C., & Hansen, R. (2018). Aligning with new digital strategy: A dynamic capabilities approach. *Journal of Strategic Information Systems*, *27*(1), 43–58. https://doi.org/10.1016/j.jsis.2017.09.001

Zahra, S. A., & George, G. (2002). Absorptive Capacity: A Review, Reconceptualization, and Extension. The Academy of Management Review, 185-203.

Zameer, H., Wang, Y., Yasmeen, H., & Mubarak, S. (2022). Green innovation as a mediator in the impact of business analytics and environmental orientation on green competitive advantage. *Management Decision*, *60*(2), 488–507. https://doi.org/10.1108/MD-01-2020-0065

Zimmermann, R., Ferreira, L. M. D. F., & Moreira, A. C. (2020). How supply chain strategies moderate the relationship between innovation capabilities and business performance. *Journal of Purchasing and Supply Management*, *26*(5). https://doi.org/10.1016/j.pursup.2020.100658

Zou, T., Ertug, G., & George, G. (2018). The capacity to innovate: a meta-analysis of absorptive capacity. *Innovation: Management, Policy and Practice*, *20*(2), 87–121. https://doi.org/10.1080/14479338.2018.1428105

9   Appendix 1:   Interview Guide

**Gordon Institute
of Business Science**

University of Pretoria

The Role of Absorptive Capacity on Incremental Innovation

Interview Guide for Employees and Managers

Name: Date:

Industry:

Definitions

Radical Innovation: Development of new products, services, or processes

Incremental Innovation: Making minor improvements or additions to existing products, processes, or service models

Learning Capabilities: The ability of an organisation to process knowledge through

(**Absorptive Capacity**) Acquisition, Assimilation, Transformation, Exploitation. The objective is to improve company performance.

Acquisition: Identify and acquire external knowledge relevant to processes and practices

Assimilation: Analysing, interpreting, processing, and understanding the acquired information from external sources

Transformation: Development of organisational routines based on the assimilated and acquired knowledge

Exploitation: The integration into everyday routines of the acquired, assimilated, and transformed knowledge

Overarching Question:
What is the role of absorptive capacity within your organisation to drive incremental innovation?

Opening Questions:
1. Is your company innovative?
2. Describe the type of innovation that your company focus on? (radical or incremental innovation)

Question 1:
<u>Acquisition</u>
What measures are employed to identify and acquire knowledge relevant to processes and practices?

1. How do employees identify and acquire external knowledge relevant to processes and practices? (Duties related- Is there an opportunity to be a decision maker, independent decision making)

2. Describe the skills or expertise that employees utilise to identify or acquire knowledge. (to determine if the group or individuals possess a skill set or expertise in a variety of fields)

3. What tools or resources are utilised to acquire knowledge, and why are these used? (to determine if the search and discovery are efficient for information)

4. Describe the roles that managers play in acquiring knowledge. (To determine if managers encourage employees to search for new knowledge)

5. Describe the role of the organisation once the new knowledge has been acquired. (Does the company reward employees for acquiring new knowledge)

Question 2:

Assimilation

What measures are employed to assimilate (analyse, interpret, process and understand) the external knowledge?

1. How do employees analyse, interpret, process and understand the acquired knowledge from external sources? (Duties related- Is there an opportunity to be a decision maker, independent decision making)

2. Describe the skills or expertise that employees utilise to analyse, interpret, process and understand the acquired knowledge. (to determine if the group or individuals possess a skill set or expertise in a variety of fields)

3. What tools or resources are utilised to assimilate knowledge, and why is this used? (To determine if the tools or resources utilised enable better decision making)

4. Describe the roles that managers play in assimilating knowledge. (to determine if there are equal, open discussions on this knowledge, Do managers value their employee's viewpoints/ideas, and Do managers update their knowledge?)

5. Describe the next steps for the organisation once the new knowledge has been assimilated. (Does the company reward employees for sharing knowledge)

Question 3:

Transformation

What measures are employed to transform (develop organisational routines based on) the acquired and assimilated knowledge?

1. How do employees transform their knowledge? (Duties related- Is there an opportunity to be a decision maker, independent decision making)

2. Describe the skills or expertise that employees utilise to transform knowledge. (to determine if the group or individuals possess a skill set or expertise in a variety of fields)

3. What tools or resources are utilised to transform knowledge, and why is this used? (To determine if the tools or resources utilised enable better decision making)

4. Describe the roles that managers play in transforming knowledge. (to determine if there are equal, open discussions on this knowledge, and Do managers value their employee's viewpoints/ideas to transform this into organisational routines)

5. Describe the role of the organisation once the new knowledge has been transformed. (Does the company reward employees for applying new knowledge)

Question 4:

Exploitation

What measures are employed to exploit (integrate the acquired, assimilated and transformed knowledge into everyday routine or processes that contributes to innovative products or services) the external knowledge?

1. How do employees exploit knowledge? (Duties related- Is there an opportunity to be a decision maker, independent decision making)

2. Describe the skills or expertise that employees utilise to exploit knowledge. (to determine if the group or individuals possess a skill set or expertise in a variety of fields)

3. What tools or resources are utilised to exploit knowledge, and why are these used? (To determine if the tools or resources utilised enable better decision making)

4. Describe the roles that managers play in exploiting knowledge. (to determine if there are equal, open discussions on this knowledge, Do managers value their employee's viewpoints/ideas and whether these are exploited to drive incremental innovation)

5. Describe the role of the organisation once the new knowledge has been exploited. (Does the company reward employees for coming up with innovative solutions)

Closing Questions:

1. What timeframe does your company allocate to convert ideas into innovative solutions
2. Why does this timeframe exist?

10 Appendix 2: Confidentiality Agreement

**Gordon Institute
of Business Science**

University of Pretoria

1   Pro-forma Consent Form - Interviewees

Dear Sir / Ma'am

I am currently a part time student, enrolled at the Gordon Institute of Business Science (University of Pretoria), studying towards a Masters of Business Administration qualification.

My research is based on investigating the role of absorptive capacity on incremental innovation.

Each interview will have a duration of between 20 minutes to 1 hour. The interview will explore the four components of absorptive capacity and how this translates to incremental innovation within organisations.

This interview is voluntary and you may withdraw from it at any stage without being penalised.

The imparted information will be used discretely and confidentially. Information about you or your organisation will not be disclosed. Any concerns that may arise before or during the interview can be directed to my supervisor or I. Details are provided below.

	Neelan Pillay (Researcher)	Anel Meintjes (Supervisor)
Signature	*[signature]*	*Anel Meintjes*
Date	05 August 2022	08 August 2022
Contact number	071 676 1549	-
Email address	21767506@mygibs.co.za	anelrdsa@gmail.com

Interviewee Name: _____   Date: _____

Interviewee Signature: _____

1

11 Appendix 3: Themes and Codes

Document Group	Codes	Code
Need of making good use of available resources and technology_ Communication	8	aq_communication between stakeholders aq_communication with external resources as_communication with internal resources as_operating in silos ex_communication between stakeholders gen_communication between stakeholders tr_communication with stakeholders tr_internal communication
Value of Specific Knowledge and Experience_ Educational qualifications_Expertise_Experience	16	aq_conducting research aq_educational qualifications aq_employee expertise aq_employee know-how aq_employee skill set requirements aq_employee versatilty aq_self improvement aq_work experience as_educational qualifications as_employee expertise as_employee job fit as_employee know-how ex_employee expertise ex_technical skills required tr_employee expertise tr_employee know-how

		gen_allocation of internal resources
		gen_business development
		gen_centralised organisational tools
		gen_change in leadership
		gen_collaboration with external resources
		gen_communication between stakeholders
		gen_culture of employees
		gen_educational qualifications
		gen_employee criticism
		gen_employee expertise
		gen_employee initiative
		gen_employee input
		gen_employee recognises innovative organisation
		gen_employee versatility
		gen_environmental analsyis
		gen_environmental development
		gen_focused team
		gen_idea conversion based on complexity
		gen_idea conversion based on culture of organisation
		gen_idea conversion based on size of innovation
		gen_idea conversion based on urgency
		gen_integration of equipment and technology
		gen_lack of research and development
		gen_management of change
		gen_management of innovation
		gen_managerial experience
general_ innovation_absorptive capacity		gen_meeting customer requirements
		gen_meeting platform versatility
		gen_negative investment in resources
		gen_negative view of online platfroms
		gen_openminded leaders
		gen_organisation aligned to incremental innovation
		gen_organisational culture
		gen_organisational idea generating platforms
		gen_organisational inclusivity
		gen_organisational innovation status
		gen_organisational red tape
		gen_organisational reward system
		gen_positive employee engagement
		gen_positive organisational support
		gen_positive view face to face platforms
		gen_positive view of online platforms
		gen_prioritisation of work
		gen_process agility
		gen_process flexibilty
		gen_projects based on market demand
		gen_risk management
		gen_skills development by organisation
		gen_strategic leadership
		gen_streamlining innovation platforms
		gen_supportive organisational practices
		gen_talent aquistion
		gen_variable time frames
	54	gen_work experience

Role of the organisation_human resource practices	6	aq_human resource practices aq_organisational attrition as_human resource practices ex_organisational rewards system tr_employee qualification tr_organisational rewards system
Function of effective leadership		aq_leadership input is strategic aq_mentoring from leaders aq_negative senior leadership involvement aq_poor leadership skills aq_positive leadership involvement aq_role of manager aq_seldom leadership involvement as_firm leadership involvement as_key indicators for leadership as_leadership input is strategic as_positive leadership involvement as_risk management as_role of manager as_seldom leadership involvement as_top-down leadership role ex_leadership input is strategic ex_leadership involvement in financials ex_management of people ex_older mind-set of organisation ex_positive leadership involvement ex_role of the manager ex_seldom leadership involvement tr_leadership input is strategic tr_management of change tr_positive leadership involvement tr_resistance to change tr_role of manager
	28	tr_seldom leadership involvement

		aq_ positive organisational involvement
		aq_conform to external compliance systems
		aq_creation of prototypes
		aq_funding of innovative solutions
		aq_supportive organisational practices
		as_creation of prototypes
		as_minimal analysis
		as_multiple solutions
		as_not proactive
		as_organisation seldom involved in decisions
		as_supportive organisational practices
		ex_due diligence
		ex_internal compliance systems
		ex_monitoring of results
		ex_organisational practices
		ex_supportive organisational practices
		tr_alignment of time
		tr_developing new processess and standards
		tr_initial learning curves
		tr_intergation of knowledge
		tr_monitoring of results
		tr_process flexibilty
organisational processes and		tr_supportive organisational practices
practices	24	tr_utilising internal resource
		aq_alignment with organisational strategy
		aq_decentralisation of innovation hub
		aq_developing incremental innovation
		aq_organisation knowledge of external environment
		aq_risk management
		aq_strategic organisational involvement
		as_alignment with organisational strategy
		as_holisitc business overview
		ex_alignment with organisational strategy
		ex_learning curves
		ex_opportunity identification
		ex_strategic organisational involvement
		ex_strategic organisational networking
Role of the		tr_alignment with organisational strategy
organiasation_organisational		tr_business justification
strategy	16	tr_project market demand
		aq_ positive organisational involvement
		aq_negative investment in resources
Role of the		aq_skills development by organisation
organisation_organisational		as_ positive organisational involvement
support		as_proactive organisational initiatives
		ex_employee wellbeing
		ex_role of organisation
	8	ex_structure of organisation

Value of specific knowledge and experience_personal skills		aq_employee critical thinking
		aq_employee patience
		aq_employee versatilty
		aq_people skills
		as_employee critical thinking
		as_initial learning curves
		tr_employee conviction
		tr_employee initiative
		tr_employee perseverance
	10	tr_people skills
Employee and manager responsibilities		aq_allocation of internal resources
		aq_employee decision making
		aq_employee responsibility
		aq_opportunity indentification
		aq_understanding the problem
		as_employee decision-making
		as_employee initiative
		as_role of employee
		as_understanding of the problem
		as_work experience
		ex_business justification
		ex_decision making
		ex_employee know-how
		ex_employee responsibilty
		ex_handover to exploit
		ex_role of the employee
		ex_sharing of knowledge
		tr_allocation of internal resources
		tr_branding of product
		tr_employee decision making
		tr_handover to transform
	22	tr_role of employee
the need of making good use of available resources and technology _ tools and resources		aq_external resource tools
		aq_older mindset of organisations
		aq_research and development
		aq_supportive acquisition tools
		aq_use of technology to acquire information
		as_skill set of external resources
		as_supportive analytical tools
		ex_use of supportive exploiting tools
		tr_external resource tools
		tr_supportive role in transformation
		tr_supportive transformational tools
		tr_use of technology to transform information
	13	tr_utilising internal resource
Role of the organisation_training and development		aq_training and development
		ex_training and development
	3	tr_training and development

the need of making good use of available resources and technology_working in teams	12	aq_collaboration with external resources aq_collaboration with internal resources as_collaboration with external sources as_collaboration with internal resources as_communication between stakeholders ex_collaboration with external resources ex_collaboration with internal resources ex_use of internal resources tr_collaboration with external resources tr_collaboration with internal resources tr_evaluation by focus team tr_problem solving by team
Role of the organisation_organisational culture	8	aq_negative organisational culture aq_organisational alignment aq_positive organisational culture as_employee organisation fit as_human resource practices ex_employee behaviour ex_managing organisational culture tr_managing organisational culture

12 Appendix 4: Timeline

Neelan Pillay 2022 MBA Schedule

Block Details	Month	Module	Deliverable	Date	Idv / Syn	Mark	Time	Faculty	Comments
Block 2 05 - 10 January Innovation and Design Leadership Coaching	January	Electives	Choose electives	10-Jan					Online
		Research	Seminars	12-13 Jan					
		Innovation and Design	Syndicate Assignment	15-Jan	Individual	40%	23:59		
		Research	Download ATLAS ti V9	19-Jan	Individual				
		Research	Find Gap	31-Jan	Individual				
		Research	7 Page Assignment	14-Feb	Individual				5% towards final research mark
		Research	Supervisor selection	25-Feb					Meet with Supervisors before selecting
Block 3 22 - 30 March and 10 April Decision Making	March / April	Research	Notify students of supervisors	30-Mar					
		Decision Making	Final consulting report	01-Apr	Syndicate				15 pages max
		Research	Prep for proposal submission	01-Apr					Workshop
		Decision Making	Exam	10-Apr		50%	08h00		3hrs
		Research	Draft Literature Review Submission	30-Apr					Anel Meintjes
Block 4 12 - 17 May Strategic Implementation Leadership and Coaching	May	Leadership	Letter of Intent	12-May					
		Research	Draft proposal submission	08-May					Anel Meintjes
		Research	Proposal submission	31-May		10%	09h00		15 pages
		Leadership	Individual Assignment - Brief 2	06-Jun					4 pages Related to letter of intent
Electives June - September Electives	June - September	Research	Anel to discuss ethical clearance	15-Jun					Ethical clearance discussion
		Strategy and General Management	Elective	21 - 22 Jun				Prof Nick Binedell	
		Research	Feedback from supervisors	27-Jun					
		Building Brands	Elective	28 Jun - 30 Jun				Prof Nicola Kleyn	
		Leadership	Individual Assignment - Brief 1	01-Jul					8 pages Part 1: Your Leadership style (30%) Part 2: Your Personal Moral Compass (40%) Part 3: Strategic shifts that build executive leadership (30%)
		Research	Opening of ethical clearance applications	04-Jul					
		Research	Submission of ethical clearance	04-Jul					
		Strategy and Management	Elective	5-6 July				Prof Nick Binedell	
		Research	Meet with Anel Meintjes	12-Jul					
		Research	Start with Interviews	13-31 July					
		Strategy and Innovation		02 - 04 Aug					
		Effectual Intelligence		16 - 18 Aug					
		Corporate innovation and Entrepreneurship		02 - 04 Sep					
		Research	Submit Chapter 5 to Anel	15-Sep					
		Research	Meet with Anel	19-Sep					
		Research	Begin Chapter 6 write up	30-Sep					
Block 5 11 - 13 November	October - November	Global Module	Global module trip	02 - 22 Oct					
		Research	Chapter 6 to Anel	01-Oct					
		Research	Meeting with Anel	01-Oct					
		Research	Chapter 7 Anel	16-Oct					
		Research	Submit final research report to Anel	26-Oct	Individual				
		Research	Final report submission	01-Nov	Individual		08h00		
		Integrated Business Simulation & Leadership	Presentation	11-13 Nov	Syndicate				

13 Appendix 5: Consistency Matrix

Title: The role of absorptive capacity on incremental innovation

Number	Questions	Literature Review	Data Collection Tool	Analysis
1.	What measures are employed to identify and acquire knowledge relevant to processes and practices?	Cohen & Levinthal, 1990 Zahra & George, 2002 Xie, Zou, & Qi, 2018 Han, Lyu, Ji, Zhu & Bao, 2020 Engelman, Fracasso, Schmidt, & Zen, 2017	Question 1 in the interview guide for employees and managers	Content analysis, to probe into how incremental innovation performance was impacted by the absorptive capacity component of acquisition.
2.	What measures are employed to assimilate (analyse, interpret, process and understand) the external knowledge?	Cohen & Levinthal, 1990 Zahra & George, 2002 Xie, Zou, & Qi, 2018 Han, Lyu, Ji, Zhu, Su & Bao, 2020 Engelman, Fracasso, Schmidt, & Zen, 2017	Question 2 in the interview guide for employees and managers	Content analysis, to probe into how incremental innovation performance was impacted by the absorptive capacity component of assimilation.
3.	What measures are employed to transform (develop organisational routines based on) the acquired and assimilated knowledge?	Cohen & Levinthal, 1990 Zahra & George, 2002 Xie, Zou, & Qi, 2018 Han, Lyu, Ji, Zhu, Su & Bao, 2020 Engelman, Fracasso, Schmidt, & Zen, 2017	Question 3 in the interview guide for employees and managers	Content analysis, to probe into how incremental innovation performance was impacted by the absorptive capacity component of transformation.
4.	What measures are employed to exploit (integrate the acquired, assimilated and transformed knowledge into everyday routine or processes that contributes to	Cohen & Levinthal, 1990 Zahra & George, 2002 Xie, Zou, & Qi, 2018 Han, Lyu, Ji, Zhu, Su & Bao, 2020	Question 4 in interview guide for employees and managers	Content analysis, to probe into how incremental innovation performance was impacted by the absorptive capacity component of exploitation.