ASSESSING THE FIVE ANTECEDENTS OF CORPORATE ENTREPRENEURSHIP WITHIN MEDIUM-SIZED CONSTRUCTION COMPANIES IN THE WESTERN CAPE, SOUTH AFRICA

BY

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DECLARATION

I, Tembela Mpata, the author, hereby certify that this thesis is entirely the result of my individual work and has never been submitted for academic review in the hopes of obtaining a qualification. Moreover, the opinions that I have given here reflect my personal views and might not align with the views of the Cape Peninsula University of Technology.

Signed:  **Date: 06 September 2024**

ABSTRACT

Particularly in the construction sector, corporate entrepreneurship (CE) is essential for fostering innovation and preserving an organization's competitiveness. Currently, expansion, innovation, and competitive positioning pose major issues for medium-sized construction enterprises in the Western Cape, South Africa. It has been shown that while CE is a critical element in promoting innovation, medium-sized construction enterprises frequently find it difficult to implement CE practices (Staniewski, Nowack, & Awruk, 2016; van Wyk, Kajimo-Shakantu, & Opawole, 2021).

This study seeks to assess the presence and extent of CE capabilities—including management support, work discretion, rewards and reinforcement, time or resource availability, and organizational boundaries—within these companies. Guided by a positivist research philosophy, this study utilizes a deductive approach, survey, and structured close-ended questionnaires to systematically collect quantitative data from grade 8 and 9 middle managers in the Western Cape. The data, analysed using IBM SPSS software and exploratory factor analysis, revealed a varied adoption of CE capabilities across companies.

Findings indicate moderate levels of management support and autonomy, but significant challenges related to time constraints, resource allocation, and reward systems. These insights underscore the need for strategic enhancements in CE capabilities to foster greater innovation and competitiveness in medium-sized construction companies in the Western Cape.

Key terms

Capabilities, corporate entrepreneurship, entrepreneurial behaviour, entrepreneurship strategy, sustainability, intrapreneurs, construction, medium-sized, assessment, innovation, competitive advantages

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ABBREVIATIONS AND ACRONYMS

List of abbreviations	Full names
BEE	Black Economic Empowerment
BBBEE	Broad-Based Black Economic Empowerment
CE	Corporate Entrepreneurship
CEC	Corporate Entrepreneurship Capabilities
CEAI	Corporate Entrepreneurship Assessment Instrument
CIDB	Construction Industry Development Board
FSDEA	Fundo Soberano de Angola
GDP	Gross Domestic Product
GETP	Ghana Economic Transformation Project
SDGs	Sustainable Development Goals
SMEs	Small and medium-sized enterprises
UN	United Nations

CHAPTER 1: THE PROBLEM AND ITS SETTING

1.1. Background

The existing data on entrepreneurial studies shows that innovation is one of the key success factors for both companies and economic development. For instance, while innovative businesses outshine other companies in terms of success (Nybakk & Jenssen, 2012; Bartolacci et al., 2015), several studies have demonstrated a positive and statistically significant relationship between economic performance and product or organisational innovativeness (Ngose & Bwisa, 2014). Nevertheless, despite being a significant driver of economic advancement, the construction sector is often criticised for its sluggishness in embracing innovation (Boadu et al., 2020; Klosova & Kozlovska, 2020; Ofori, 2015). Recent research in the South African construction industry highlights a limited uptake of innovative technologies and a low awareness of their benefits, indicating suboptimal utilisation (van Wyk, Kajimo-Shakantu & Opawole, 2021). This reluctance to innovate within the broader industry has adverse implications for performance and sustainability, especially in the 21st century. Medium-sized construction firms encounter formidable obstacles that impede their development, compounded by the industry's inherent resistance to change, reluctance to embrace new technologies, and slow utilisation of available resources (Demirkesen & Tezel, 2022; Blayse & Manley, 2004). One of the ways for established companies to adopt innovation is through the implementation of corporate entrepreneurship (CE), which is explained below.

1.1.1. Corporate entrepreneurship

CE, in general, refers to the encouragement of all employees to think and behave entrepreneurially by generating the development of new business ideas and opportunities within large and established corporations (Wei and Duan, 2024). There are five antecedents of CE that need to be taken into consideration when implementing CE, as explained below.

1.1.1.1 Management support

Top managers facilitate and promote entrepreneurial activities, including championing innovative ideas, as well as providing all necessary resources required and protection to all participants. Management support also consists of managers recognising people who articulate ideas. The necessary resources provided include seed money to kick-start the ideas and information necessary within the firm's system and processes. Such support from managers encourages employees to solve problems in innovative ways, proactively seek opportunities, and embark on moderately risky projects (Scheepers et al., 2008; Gutterman,2023).

1.1.1.2 Work discretion

Top management must give autonomy to the employees participating in the process of CE. Employees must feel free to make decisions. They must be empowered, trained, and independent to function during this process (Hornsby, Kuratko, and Zahra,2002; Modise,2023). The entrepreneurial work environment must allow employees to make decisions about their work, and work methods and they must also feel free to make mistakes and learn from them. The tolerance of failure should breed innovative, proactive, and risk-taking behaviour among employees in the workplace (Damianus, Basilio, Fredolin & Magallanes, 2022).

1.1.1.3 Resource/time availability

Employees need to have autonomy regarding all available resources that can assist them in implementing CE. Employees should have access to all resources that will be helpful to complete their assigned entrepreneurial activities. They should also be given sufficient time to complete the assigned activities, and when mistakes are made, there should be time allowed to rectify those mistakes. They should not be pressured to complete the task for the sake of meeting the targeted time, but they should complete their work successfully, and that can be achieved with sufficient time and resources (Scheepers et al., 2008).

1.1.1.4 Rewards/reinforcement

Rewards are meant to encourage employees to take part in CE. Rewards are a tool used in the workplace to motivate employees. When employees are motivated, they improve their performance (Mbukwana & Ayandibu,2023).

Studies by Scheepers et al., (2008) stress that an effective reward system should be in line with set goals, meaning that rewards should only be given to employees to spur entrepreneurial activities. Employers should also be responsible for providing timely feedback, emphasising the responsibility of the individual and providing performance-based incentives. Innovative organisations are developed by providing rewards based on performance, offering challenges, increasing responsibilities, and promoting the ideas of innovative employees throughout the organisation.

1.1.1.5 Organisational boundaries

The structure must be a work environment that is highly conducive for employees. A favourable environment is one where ideas by employees can be shared, evaluated, selected, and implemented (Shammout, 2022). However, a very structured organisation with its rigid ways can lead to or create obstacles to CE activities. In such an organisation, employees tend to focus on their department's

problems and fail to focus on the bigger picture. Employees, especially managers, need to be encouraged to look at the organisation from a holistic perspective (Kim and Park, 2021).

Studies suggest that organisations that want to succeed or grow in their market should avoid the dominance of standard operating procedures and should also reduce the dependence of departments on narrow job descriptions and rigid performance standards. Organisations should encourage the cooperation of departments because departments within an organisation can learn from each other and they surely link; one cannot do its work without the other (Scheepers et al., 2008).

Even though studies (Scheepers et al., 2008) have indicated that CE capabilities drive entrepreneurial behaviour within an organisation, there are no studies that are directed to medium-sized construction companies in the Western Cape Province of South Africa (SA). Medium-sized construction companies need a strategy to survive the competition, and CE has been recognised as one that can enable them to succeed (Setiawan & Erdogan, 2018). Setiawan et al. (2012) state that contractors need to assess their capabilities to implement CE to develop the proper corporate strategy based on CE. Hence, this study was conducted to assess the existence or lack of CE capabilities within medium-sized construction companies in the WC.

1.2 Context of the research

In SA, the construction industry is made up of different sectors. Overall, there are about three sectors of construction namely building, infrastructure, and industrial. Building construction is further divided into two, residential and non-residential. Infrastructure includes heavy civil or heavy engineering and dams. Industrial construction consists of offshore construction, mainly of energy installations, mining, and quarrying (Osunsanmi, Agbavboa & Oke, 2018; Windapo & Cattell, 2013). The named sectors are formed by three different levels of companies in the construction industry. The companies in construction range through large, medium-sized, and small contractors.

It has been noted that these companies within the construction industry contribute toward the country's GDP (Olarewaju & Ibrahim, 2020; Haupt & Harinarain, 2017), yet in the construction industry, business failure is a real probability because of lack of government support in assisting companies financially and in adopting CE. Other internal factors contribute to construction companies' business failure (Eke et al., 2015). It is important to highlight that construction business failure is not only extremely disruptive to the industry but also has significant ripple effects on the nation's economy (Abd-Hamid et al., 2015). The construction industry harbours significant potential, but unfortunately, this potential has not been comprehensively addressed and leveraged. One contributing factor is the industry's tarnished reputation, exacerbated by the infiltration of unethical and unprofessional individuals and organisations. A substantial portion of firms and design professionals lack proper professional experience and licenses. Consequently,

the industry has garnered a negative reputation. Managing construction projects becomes challenging due to the involvement of various actors and factors that significantly impact the performance of contractors and projects. Inadequate communication among key stakeholders leads to conflicts in project methodologies, design issues, integration of subsidiary management plans, and challenges during the execution phase. The industry encompasses diverse stakeholders such as design professionals, contractors, suppliers, government regulatory agencies, clients, and external factors (Alam, 1994).

Given the nature of the construction industry, the majority of construction projects face a high risk of late or non-completion, being over budget, and/or failing to meet specifications. Building projects can involve a wide range of stakeholders, including major design team members, clients, contractors, and project managers. Each of these stakeholders contributes a significant amount of capital in the form of time, resources, or financial support. As a result, these key actors and stakeholders have considerable power, influencing and shaping the progress of each project. The push and pull effects, as well as the interrelationships of characteristics within a stakeholder organisation and between stakeholders, can have a substantial impact on the construction sector and, by extension, the entire value chain. The level of risk is influenced by the number and kind of stakeholders engaged, the size, originality, and complexity of the project itself, as well as the current social, political, and economic context. Environmental, design, logistics, financial, legal/contractual, political, operational, or technical issues can all be the source of risk (Jin et al., 2017).

Moreover, in construction companies, the stakeholders' roles and how they perform them are not the only challenges that construction companies have to deal with. Factors such as entrepreneurial factors, affect the growth, lack of productivity, lack of profit and cost-efficiency (Diabate et al., 2019) all contribute to the innovation of the companies. Construction companies differ in how they resolve these challenges in sustaining and/or growing their businesses.

Unfortunately, small, and medium-sized companies (SMEs) are the most vulnerable companies in the construction industry in terms of embarking on innovation. These companies have limited resources that can enable them to seek and employ organised knowledge (especially scientific knowledge). This forces SMEs to depend on personal means of distribution of knowledge and the ability to learn through action and influence; they are not able to do everything on their own and thus need support (Staniewski et al., 2016). Even when small and medium-sized construction companies strive for innovation, they face the challenge of poor management skills in terms of planning, or they may concentrate on a shorter rather than a longer-term strategic perspective to obtain sustainable growth. These issues result from a lack of formal education or appropriate qualifications. Innovation may never take place in small and medium-sized construction companies in the WC because of these issues until they find ways to deal with these

challenges. Innovation is needed for business sustainability; hence, this study assessed the existence or lack of CE capabilities within medium-sized construction companies in the WC.

1.3 Problem statement

As already indicated, medium-sized construction companies face challenges and difficulties that seem to hinder their growth. In particular, the construction industry is resistant by nature to transformation, unwilling to adopt new technologies, and very slow at making use of even the externally available resources (Demirkesen & Tezel, 2022; Blayse & Manley, 2004). Countless studies and surveys over the years have shown that construction business owners continue to under-invest in technology, despite their acknowledgment of the many benefits that technology can provide to running their businesses and managing construction projects (Barbosa et al., 2017; Agenbag & Amoah, 2021). For this reason, innovation in the construction industry has been relatively slow and the industry does not have a strong reputation for adopting innovation (Barbosa et al., 2017; Yusof et al., 2014). Extant studies have proven that to adopt innovation within companies, CE needs to be implemented (Damanpour & Schneider, 2006; Shaw et al., 2005). Previous studies beyond SA have indicated that medium-sized construction companies are lagging behind in adopting the CE capabilities which would help companies innovate (Staniewski, Nowack, and Awruk, 2016). Against this background, this study assessed the existence or lack of CE capabilities within medium-sized construction companies operating in the WC Province of SA.

Therefore, the **Problem statement**: Medium-sized construction companies in the Western Cape Province of South Africa are lagging in the adoption of corporate entrepreneurship (CE) capabilities, which is hindering their ability to innovate and leverage new technologies, thereby impeding their growth and competitive edge in the industry.

1.4 Research questions

- How does managerial support influence the entrepreneurial spirit of middle managers within medium-sized construction companies?
- To what extent do top managers of medium-sized construction firms provide work discretion to middle managers to foster entrepreneurial behavior?
- What rewards and reinforcements are given by top managers to middle managers in medium-sized construction companies to enhance employee entrepreneurial behavior?
- How much time and freedom are available to middle managers within medium-sized construction companies in the WC to act entrepreneurially?
- What organizational boundaries exist that promote entrepreneurial behavior among middle managers in medium-sized construction companies in the WC?

1.5 Hypotheses

The following are the hypotheses tested in this study:

- H1: Top managers of medium-sized construction companies in the WC support middle managers' entrepreneurial spirit.
- H2: Top managers grant work discretion to the middle managers for them to participate in entrepreneurial initiatives within medium-sized construction companies in the WC.
- H3: Top managers provide middle managers rewards and/or reinforcements to improve their entrepreneurial behaviour within medium-sized construction companies in the WC.
- H4: In the WC, medium-sized construction company top managers make time and freedom available to middle managers to behave entrepreneurially.
- H5: Top managers within medium-sized construction companies in the WC create necessary organisational boundaries that promote entrepreneurial behaviour for middle managers.

1.6 Primary objectives

To assess the existence or lack of CE antecedents within medium-sized construction companies in the WC.

1.7 Secondary Objectives

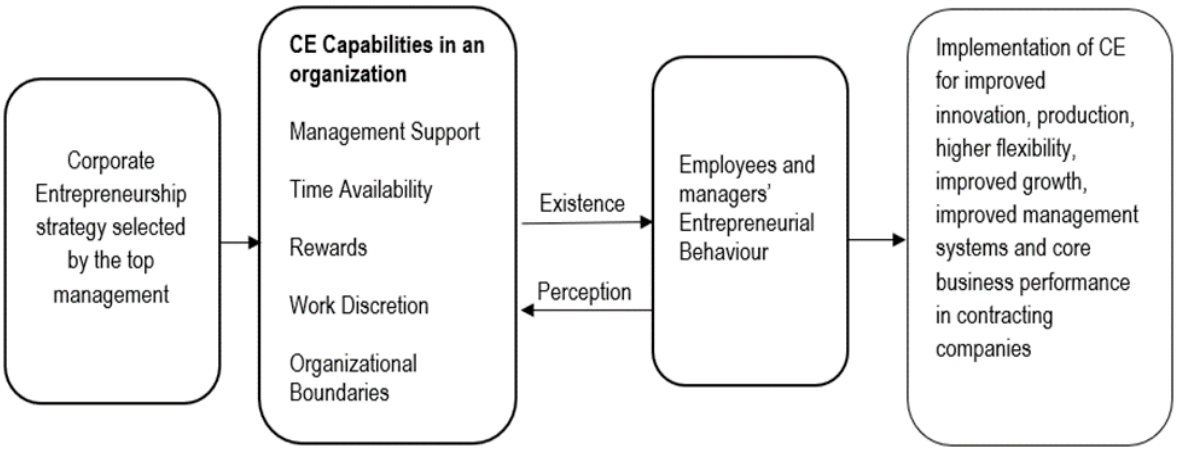
To achieve the research aim stated above, this study attempted to achieve specific objectives as follows:

- Investigate the managerial support that influences middle managers' entrepreneurial spirit within medium-sized construction companies.
- Determine the extent of work discretion given to middle managers by top managers of medium-sized construction firms to behave entrepreneurially.
- Assess the existence of rewards and reinforcement given to middle managers of medium-sized construction companies by top managers to improve employee entrepreneurial behaviour.
- Identify the availability of time and freedom available to middle managers to behave entrepreneurially within medium-sized construction companies in the WC.
- Investigate organisational boundaries that promote entrepreneurial behaviour within medium-sized construction companies in the WC for middle managers.

1.8 Theoretical framework

Amongst the studies completed by researchers on ascertaining entrepreneurial behaviour in an established firm, CE is a tool that can be utilised to contribute to a firm's performance. Though there is no certainty on the CE process working for an established firm, multiple research studies have been built on the fact that CE helps established firms to advance their businesses (Lumpkin, Steier, and Wright, 2011). According to Ratten and Ratten (2018), before an organisation implements CE, it must set up an

entrepreneurial strategy that is vital to identify the opportunities in the market. If an organisation seeks to identify opportunities and advantageous behaviours, an entrepreneurial strategy can be developed that seeks to be innovative.



Source : (Mcarthur et al., 2012)

Figure 1.1: Theoretical framework

Top management can select many strategies; however, to bring about innovation, they need to create and implement all five CE antecedents. To evaluate the existence of CE, which should be created and implemented by top managers, all five internal CE antecedents as discussed need to be observable. If CE antecedents exist within the organisation, they can promote the entrepreneurial behaviours of employees and managers. CE can be implemented successfully if the employees and managers possess entrepreneurial behaviour.

According to Ratten and Ratten (2018), every employee in a company has entrepreneurial potential, and as a result, firms confront the problem of building an internal organisational environment or CE antecedents that enable employees to engage in a variety of entrepreneurial activities. An environment's conditions must have a conclusive effect on the primary areas of strategic entrepreneurship, namely persistent regeneration, organisational rejuvenation, strategic renewal, domain redefinition, and business model reconstruction. An internal organisational environment is the context or surroundings in which workers find themselves at work, characterised by a set of parameters in which they must operate in order to complete the company's responsibilities and achieve their personal goals. A variety of specific organisational elements can influence employees' impressions of the internal organisational environment,

five of which are particularly prominent: support from management, work discretion, reward/reinforcement, time availability, and organisational boundaries.

In conclusion, based on these theories, internal organisational environmental factors drive entrepreneurial behaviour within an organisation. An organisation that successfully assesses its capabilities and uses them to identify, support, and encourage its employees to take the corporate champion position is set for growth. There is also an indication that without employee involvement, the process of CE cannot be achieved. Managers must work together to encourage employees to participate in the process.

This study used these theories when collecting data from medium-sized construction companies in the WC by making use of the quantitative method. This study used the presented model but only applied it to medium-sized construction companies in WC.

1.9 Research methodology

As shown in Figure 1.2, the objectives of this research will be achieved as follows:

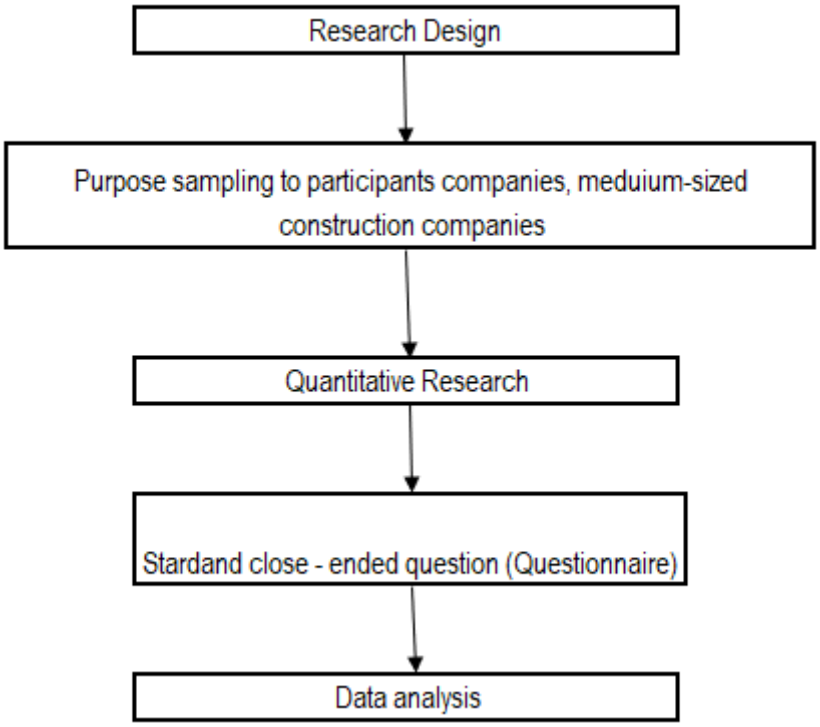


Figure 1.2: Framework of the research study

The research study was based on a purposive sampling selection process. Purposive sampling selection is when a researcher purposefully selects from where he/she will collect data in a particular population. The researcher only selected a sample that was relevant to the study (Sekaran, 2006).

The population for this study consisted of medium-sized construction companies in the WC. These sampled individuals were grouped from age 20 – 30, 31 – 40 years, and 41+ years. The study initially targeted a sample group of middle, and operational managers, and general workers.

This study used a quantitative method to collect data. The closed-ended research questions were written clearly to avoid confusion for the respondents. The questionnaire was fixed and was the same for all respondents.

The analysed data helped test the hypothesis, summarise the findings, and draw conclusions and recommendations for future studies.

1.10 Significance of the study

Previous studies conducted outside of South Africa have mentioned that medium-sized construction companies have been slow in adopting CE antecedents (Staniewski, Nowack, and Awruk, 2016). Therefore, this research aimed to provide new insights into the community of medium-sized construction companies in the WC by focusing on how they can assess the presence or absence of CE antecedents. The goal was to help these companies manage, sustain, and seize new business opportunities for their growth.

Additionally, the study aimed to assist medium-sized construction companies in the Western Cape to recognise CE as a tool for sustainability and for gaining a competitive advantage, both locally and potentially internationally. By assessing CE antecedents, the study aimed to guide the management teams of these companies in fostering an entrepreneurial culture within their organisations. The findings could be utilised at the managerial level to promote entrepreneurship and create an entrepreneurial environment within the companies.

Furthermore, this research aimed to serve as a guide for other researchers who are considering CE strategies for specific industries and environments. By exploring industry-specific strategies, the study aimed to encourage corporate executives to enhance their current entrepreneurial capabilities, fostering innovation and gaining a competitive edge in the market.

1.11 Ethics statement

The Cape Peninsula University of Technology provided ethical approval, which stated that this study followed the institutional ethical guidelines and standards. Participants were informed about the nature and goal of the study. Furthermore, because this study consisted of primary data collection using closed-ended questionnaires, no physical damage was imposed on subjects. The participants received no rewards for participating, and there was no punishment for deciding whether or not to participate. The researcher thanked those who participated. Throughout the data collection and analysis, individuals remained anonymous. The data was solely used for this study and was not utilised illegally or in ways

that the subject did not consent to. The data was evaluated for the full group rather than just one respondent. Data was always collected and processed professionally.

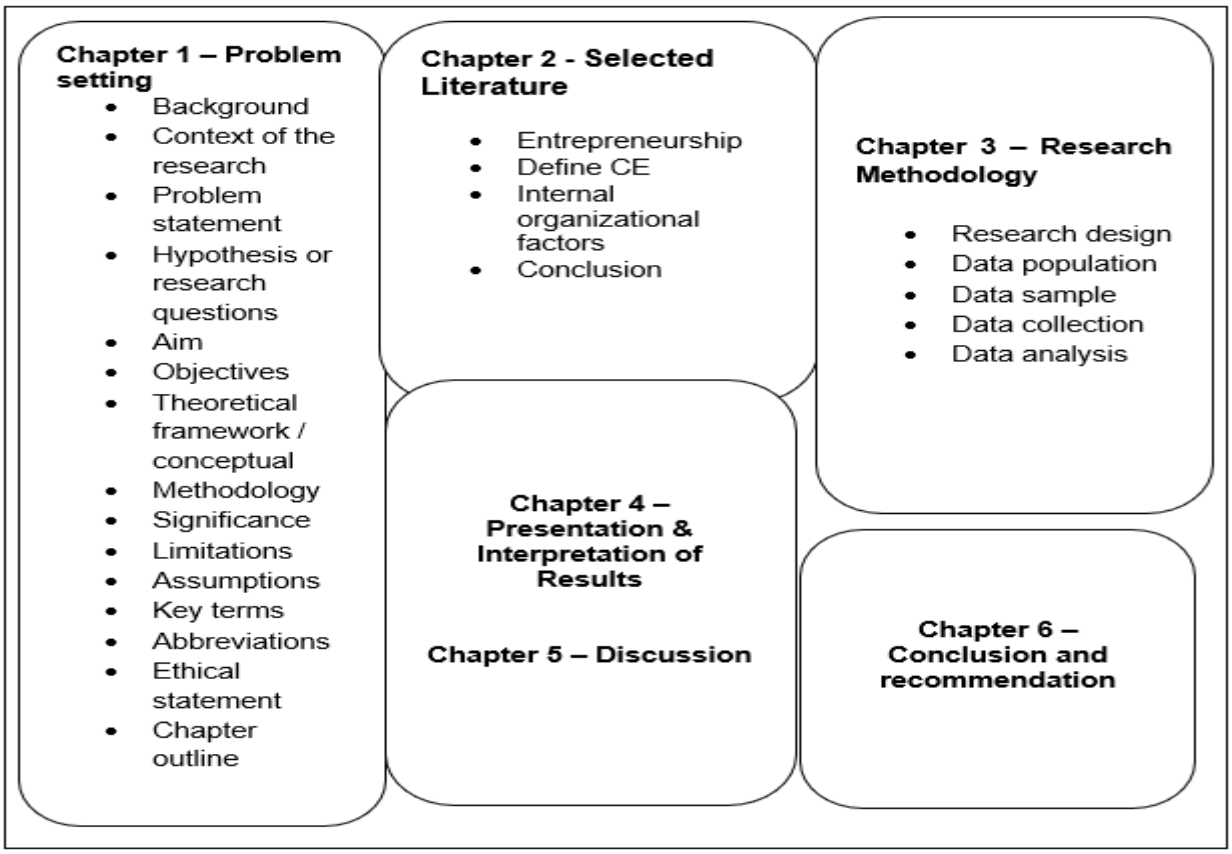


Figure 1.3: Chapter outline

Chapter 1 – Problem setting

This chapter presents the background on which the topic of this study is based and introduces the topic of the study. It also draws the attention of the reader to the construction operations in the WC by focusing on medium-sized construction companies in the province. The problem statement, the aim of the research, the research hypothesis, research objectives, limitations, and assumptions are also discussed.

Chapter 2 – Selected literature

This chapter addresses the concept of entrepreneurship and CE. The rest of the chapter is an elaboration of a literature study that was conducted to gain more insight into the subject of CE. The relevant terminology, corporate venturing, innovation, strategic renewal, and all internal environmental factors that influence the CE are explained.

Chapter 3 – Research methodology

This chapter deals with the methods that were used, how data was collected, and data analysis.

Chapter 4 – Presentation and interpretation of results

This chapter presents and interprets the findings after data analysis.

Chapter 5 – Discussion

This chapter discusses the findings.

Chapter 6 – Conclusion and recommendation

This chapter presents conclusions based on findings and recommendations to future researchers and to medium-sized construction companies in WC.

1.12 Chapter summary

Chapter 1 outlined the framework of the entire research study. The introductory literature review focused on the background of entrepreneurship in construction and subsequent studies about CE and the impact of CE antecedents on innovation. This was followed by a problem statement relating to the adoption of CE antecedents that influence the implementation of CE within medium-sized construction companies in the WC. The aim and objectives of the study were also presented in the chapter. It was noted that research data gathering complied with accepted ethical standards. The research outline provided an overview of each chapter of the study.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter starts by defining the terms 'entrepreneurship' and 'CE'. Information from the early writers on entrepreneurship is presented, followed by details of the evolution of the terms. The literature also highlights the gap in the adoption of CE by medium-sized and large construction companies in the WC Province.

The three major ways by which CE can be implemented, namely corporate venturing, strategic renewal, and innovation, are presented in this chapter. This chapter also outlines the five internal environmental factors that influence CE, namely top management support, rewards and/or reinforcement, work discretion, time and/or resource availability, and organisational boundaries. The literature on management support highlights the use of organisational resources, their importance in the organisation from top- to first-line management, and the roles played by each of these levels of management in the process of implementing CE. The chapter also highlights the importance of a rewards system or incentives within an organisation, the positive impact it has on employees when exercised sufficiently, and the negative impact when it is neglected. Work discretion is discussed in this chapter as a tool that is used in organisations to build trust between managers and employees. When employees are given the freedom to do or complete work tasks, the autonomy encourages them to take charge and deliver any given product successfully. Resource availability is presented from previous literature as the internal factor that influences employees to take part in entrepreneurial activities. With limited resources available, employees are unable to perform their duties sufficiently. Organisational boundaries are also dealt with in this chapter as one of the five CE antecedents that can impact the growth of the organisation negatively or positively. Finally, CE in the construction industry is discussed in detail.

2.2 Entrepreneurship

According to Frohberger and Voss (2016), to define CE, entrepreneurship needs to be defined first. They also state that the current literature indicates that there is no generally accepted definition for the term entrepreneurship. It is however clear that all the definitions that have been presented have the same conclusion and that entrepreneurship can be defined in different ways. The initial definition describes entrepreneurship as starting a business that stands out for a unique selling proposition. The second definition describes entrepreneurship as overcoming existing obstacles to the environment and/or business market (Frohberger & Voss, 2016; Diandra & Azmy, 2020).

Some authors explain entrepreneurship simply as managing an organisation. However, the stated definitions are too broad and therefore only suitable for a general overview. Ultimately, the definition of

entrepreneurship depends on the perspective of an individual. Thus, the individual who sees managing a company as an important factor defines entrepreneurship differently from the one who feels that personality traits are particularly important. Most literature on entrepreneurship has focused on characteristics that define entrepreneurs and the nature of entrepreneurship. The reason for this is because of the huge role entrepreneurs play in the success of start-ups or managing businesses (Ginsberg and Hay,1994; Barot, 2015;Usman, Kess-Momoh, Ibeh, Elufioye, Ilojianya, & Oyeyemi, 2024).

Zanella, Castro, Hallam, and Guda(2019) and Ratinho, Amezcua, Honig and Zeng (2020) state that entrepreneurs are individuals within an organisation who are aware of opportunities suitable for a certain market in which they operate. These individuals are capable of identifying suppliers and customers suitable for inter-business growth and the market at large. They can own more than one business because they have learned and benefited from discovering the entrepreneurship process through trial and error (Petkova,2009). Entrepreneurs are known as risk-takers; they are capable of taking using strategies that prepare the organisation to reach its entrepreneurial stage (Hebert and Link, 1989; Macko & Tyszka, 2018; Antoncic, Hisrich, Marks, and Bachkirov, 2018).

From the stated definitions above (Hebert and Link, 1989; Macko & Tyszka, 2018; Antoncic et al., 2018), in this study, entrepreneurship is defined as a process that is undertaken by the entrepreneur to start a new enterprise or business in a specific market by creating a product using all necessary resources required (labour/employees, material) and bearing all difficulties and financial challenges in achieving the new business. The entrepreneur starts the process with people in mind, meaning all the products that will be produced must meet customer satisfaction and the employees to be recruited must meet the required standard to achieve the goal. An entrepreneur is an individual who is not hired as a manager, but a business-oriented individual who seeks market opportunities and is in a position to make decisions. Entrepreneurs understand the business, what it takes to build the business, and how to run the business, which is why they are called risk-takers. They are not afraid of uncertainty but take it as a challenge or an opportunity for growth. Entrepreneurs are different from managers; they are the initiators of businesses, while managers are individuals who are hired to manage a business that has already been established (Patharkar and Kishnani, 2021).

Before a firm or an entrepreneur undertakes the process of starting a new business or enterprise, some elements need to be verified to determine their readiness (Nica, Grayson, Gray, and Gordon, 2015). This stage is called entrepreneurial orientation (EO). Frohberger and Voss (2016) state that EO refers to the strategies an entrepreneur or an organisation takes to determine the readiness of the firm to tackle the opportunities presented by the market. The EO process helps the firm to determine its readiness by evaluating the resources available to exploit and explore the opportunities in the market (Anwar, Clauss & Issah, 2022).

2.3 Defining CE

Previous studies state that as companies engaged in entrepreneurship, their competitiveness grew, and they began to see the need to adopt new strategies to maintain their businesses. Interest increased in understanding how entrepreneurship could be managed within the administrative structure of an organisation (Ginsberg & Hay, 1994; Ramachandran, Devarajan, & Ray, 2006; Sakhdari, 2016; Covin & Slevin, 2023). The understanding of entrepreneurship or CE stirred up further interest, suggesting that it was not enough for firms to invest heavily in research and development; instead, they needed to enforce an environment in which employees could be encouraged to develop innovations that would transform into fast-growing business lines (Fayolle & Basso, 2010; Correia et al., 2023). That is when, in the mid-1980s, the terms CE or entrepreneurship received so much attention from many researchers and business owners. For that main reason, it has been described in different ways, but all lead to the same description (Galván-Vela, Herrera, Rodriguez, & Ravina-Ripoll, 2021).

According to Ireland, Kuratko, and Morris (2006), CE is a process that is used by a firm seeking to enhance its competitive advantages within its market. Setiawan et al. (2012) describe CE as a process that can help companies maintain their business and become highly competitive in the market, but one must be willing to take the risk because for some firms, the process succeeds, and for some, it does not. On the other hand, Åmo (2010) describes entrepreneurship as the implementation of innovative ideas within an organisation, whereby the employees are the initiators of this innovation, and the implementation is completed in their interest while the management may not be interested or want the innovation. The employee's aim in pursuing this self-interest project is to gain recognition and maybe receive incentives (Messmann and Mulder,2021).

The terms CE and entrepreneurship may look like they have different meanings, but they go hand in hand. CE is carried out to promote entrepreneurial behaviours within an organisation, whilst entrepreneurship is employees acting as entrepreneurs because of ideas on innovation they possess within the organisation (McFadzean, O'Loughlin & Shaw, 2005; Cadar & Badulescu, 2017; Wang & Hu,2022). It is the organisation's responsibility to create a safe space for these ideas to be established into new products. Studies suggest that if an organisation wishes to implement the CE process, it must evaluate all internal antecedents by using a CE assessment instrument (CEAI) (Setiawan et al., 2012). A CEAI is a tool that indicates a firm's capabilities to take on the CE process. It is a tool that helps the firm to clearly show the areas of the antecedents to be focused on the development of effort (Kuratko et al., 2014; García & López, 2021).

For this thesis, CE is used in line with Frohberger and Voss (2016) as the excellent display of entrepreneurship within a company. CE encompasses a variety of skills and manifestations that can

impact various departments and levels of the organisational hierarchy. CE is intended to have a major impact on the various units, processes, strategy, and structure. Therefore, CE is a general firm perspective that might result in identifying, investigating, and taking advantage of opportunities, even when the outcome is uncertain. Additionally, CE incorporates entrepreneurial qualities into the company's overarching focus (Özdemirci, 2011; Nayager & van Vuuren, 2005; Zhang & Li,2021).

In this study, CE is regarded as a process that can only be undertaken when there are innovative ideas and when there is a willingness to convert the ideas into products. Entrepreneurship is a process that is controlled by employees who have innovative ideas and are still employed. Because employees are a great asset to an organisation, a CE process cannot be successfully implemented without them, and without their needs being met.

A previous study by Frohberger and Voss (2016) suggests that firms should make use of CE when they see a need to awaken an overall entrepreneurial spirit or innovative and proactive firm orientation. The figure below depicts the three types of CE.

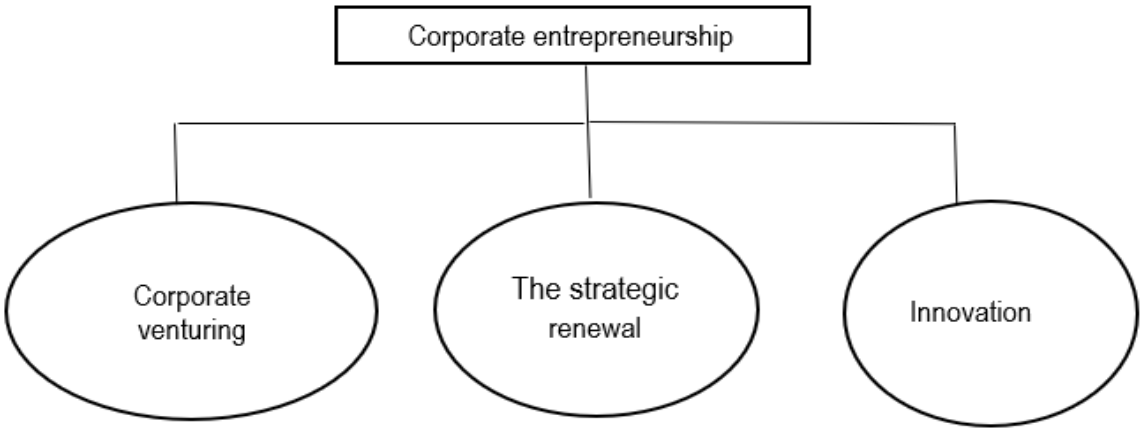


Figure 2.1: The three types of CE

Source: Silvio (2011)

2.3.1 Corporate venturing

This has been regarded with high esteem lately in most industries or business platforms. Corporate venturing involves a parent company that investigates its market and finds itself willing to take new space in the market: first by a corporate venture unit, and second by investing in new business opportunities. Corporate venturing can be executed in two ways, namely internal and external (Maine, 2008; Bercovitz & Mitchell, 2022; Carter & Allen, 2023). This thesis attempts to explain both forms, the corporate venture unit (internal corporate venture) and corporate venture capital.

First, a corporate venture unit that occurs within an organisation involves executives and/or top management in the organisation selecting capable employees as representatives of the new business venture. The selected individuals are then responsible for innovative ideas, the technology required, and strategies to implement the new business venture. Once the business has been established and becomes operational, the selected and responsible employees become managers of the corporate venture unit (Ginsberg & Hay, 1994; Ma, Liu & Karri, 2016; Klepper & Sleeper,2021; Dushnitsky & Lenox, 2023). The new business line that belongs to an established or parent company is called internal corporate venturing. It is developed to allow more freedom in the marketplace and to enhance competitive advantages.

Reimsbach and Hauschild (2012) state that the parent company invests or uses the existing resources to produce a new business line that will then help the parent company to be more profitable. However, some issues arise along the way, as all the money or income that is made by the new business within the existing company is divided between the parent company and the new business (Ginsberg & Hay, 1994; Thornhill & Amit, 2001). Ginsberg and Hay (1994) indicate that for this type of corporate venturing to be successful, it requires managers and/or owners of the existing company to create autonomy within the firm. In general, internal corporate venturing managers within the established company are given relatively small decision-making autonomy and flexibility because in most cases the financial risks fall entirely on the parent company (Garrett, 2017; Covin, Garrett, Kuratko, & Bolinger, 2021). Internal corporate venturing can only work when it is a top-down process that involves senior managers detecting what must happen but also allowing venture managers to have major control as well (Narayanan, Yang, & Zahra, 2009; Macmillan & Mcgrath, 2003; Binns & Binns, 2022).

The second method of corporate venturing is when large corporations or investors take the risk of investing in start-up companies, in the hope that they will earn significant returns when the companies become successful. This type of venture unit is corporate venture capital (Birkinshaw and Hill, 2005; Gompers & Lerner, 2023). Investors or large corporations choose this type of venture without any certainty of success. Altman and Zacharakis (2003) recommend that when a company wants to venture into or have a new business line, it must use its resources better, yet acquire capital from the bank (Agarwal & Shah, 2022).

2.3.2 Strategic renewal

Strategic renewal means the renewal or restructuring of a company's business scope or business ideas (Frohberger & Voss, 2016; Lichtenstein & Brush, 2021). Strategic renewal is when a company is forced to reconstruct its methods to meet the standards that are in the markets so that it can be able to compete. A company renews or restructures its standards or strategies to be competitive in the market and to meet the demands of the current customers. A company may by strategic renewal decide to enter a new and

different market. Researchers recommend that companies that want to improve their economic position should consider strategic renewal (Ahmed, 2019; Helfat & Peteraf, 2022).

According to Silvio (2011), revitalisation entails transforming a company's competitive landscape and reviving its business through innovation (O'Reilly, & Tushman, 2021). According to Selig, Baltes, and Stettina (2016), strategic renewal also entails redefining the company's competitive approach, business focus, and other defining characteristics in order to revitalise the organisation's operations(Sull & Eisenhardt, 2021). For businesses to develop or acquire new skills and then creatively apply them to provide value for consumers and/or staff, renewal is essential (Faivre-Tavignot, 2015; Helfat & Peteraf, 2022). According to earlier research, redefining a company's goal and creatively repurposing its resources can result in new product and technology combinations, which is how renewal is accomplished (Agarwal & Helfat, 2009; Pettit & Crossan, 2020).

2.3.3 Innovation

According to Staniewski et al. (2016), innovation is one of the business activities that have been most closely related to economic growth. However, this study's focus was only on internal corporate venturing. As already stated, internal corporate venturing has to do with creating a workable environment for employees where they can feel free to convert their innovative ideas into products (Dyer & Gregersen, 2021). The selected employees for the process act as champions and are given autonomy, support, and incentives to motivate and encourage them. The employees are selected according to their capabilities to do their work and manage tasks. These employees can be managers and may be at different levels in the organisation. Often, companies select managers from the middle level to be champions of the internal corporate venturing process (Kuratko & Audretsch, 2013; Morris & Kuratko, 2021). The reason for middle managers to be champions of internal corporate venturing is that they can communicate formally and informally with both top management and first-level managers. They can convey instructions from top management to first-line managers and give feedback to top managers from first-line managers (Banumathi & Samudhararajakumar, 2015; Huy,2021).

Kuratko and Audretsch (2013) state that when top management works together with innovation champions, their innovation process can be achieved successfully (Tushman & O'Reilly, 2022). Top management is not easy to work with, because they are not easy to adapt to change, often afraid of losing their positions (Boohene & Williams, 2012; Kotter & Cohen, 2021).

As a result, there are far more studies written about large companies' CE implementation than SMEs because large companies have enough resources that help them engage in CE compared to SMEs (Schaeffer, 2015; Kuratko & Morris, 2021). Fernández & Otegi-Olaso (2018) state that if SMEs could take the opportunity to utilise the resources they have and obtain other resources by borrowing, they could do

better on a large scale than large companies. SMEs have many opportunities to transform their businesses faster because of the small environment; managers are closer to the operational level, and they can become a challenge for large companies once they are successful. Nonetheless, different companies react differently to innovation, and as mentioned they are mostly governed by the available resources, organisational culture, and employee capabilities (Hartmann, 2006; Nadkarni & Herrmann, 2021).

According to Staniewski et al. (2016), construction enterprises lag behind other industries in terms of adopting CE. Due to intense rivalry and unfair tender adjudication, a large number of construction companies have registered to participate in the industry in less than a year (Ratshisusu,2014; Morris & Hough, 2022). Businesses must contend with issues including the external environment, which includes everything that exists outside of the organisation and includes labour, supply, legislation, social aspects, technology, competition, and consumer relations. In order to meet the challenges of frequently turbulent external environments, such as shifts in the competitive structures within an industry and technological advancements, construction companies must constantly adjust, adapt, or redefine themselves. They cannot remain unchanged in their relationships with these forces (Ratten & Ratten, 2018; Gibson & Birkinshaw, 2023).

The hostile business environment forces construction companies to evaluate their strategies and systems to enhance their competitive advantages (Oyewobi, Windapo, Cattell, & Stone, 2014; Zou & Sun, 2022). In addition, construction companies have characteristics that are within the organisation's boundaries such as organisational members and the organisation as a whole (Hartmann, 2006; Rwelamila & Dlamini, 2023). Besides, the construction industry differs from many other industries in that each construction project is unique and each construction project requires a different construction team. In numerous instances, it has been noted that construction companies may be behind in innovation because of their own construction managers. Construction managers are not confident to use modern technologies because of unavailable training and information on worker abilities, and available technologies. Without suitable technology and enough information about available technologies and training of construction managers, it is impossible for clients' requirements to be achieved (Shahrabi & Mohammadi, 2013; Hwang & Ng, 2022). Hence, this study sought to assess the managers' perception of antecedents of CE within construction companies operating in the WC.

2.4 Internal organisational environmental factors (antecedents of CE)

According to Ratten and Ratten (2018), an internal organisational environment is the context in which workers find themselves, characterised by a set of rules that they must follow while they try to complete duties for the company and reach their own objectives (Ratten, & Usman, 2023). Hornsby et al. (2002)

state that study into the organisational elements that encourage, and support corporate entrepreneurial activities has been drawn to the impact that these activities have on the performance of businesses(Ho, Quang, & Miles, 2022).

Kuratko, Hornby, and Covin (2014) assert that a company needs to measure the particular aspects linked to an innovative environment if it is sincere about enhancing the development of an entrepreneurial mindset and a supportive environment. According to several studies, the most well-known innovative businesses are making a lot of effort to identify the difficulties in maintaining an inventive environment in the face of ongoing market change (Kuratko et al., 2014;(Kuratko, Hornsby, and Covin,2023).

Companies need to realise that there are elements within their firms that need to be managed to sustain and enhance CE antecedents. Hornsby, Kuratko, Shepherd, and Bott (2009), indicate in their study that all managers at all structural levels have a critical strategic role to fulfil for the organisation to be successful. The corporate entrepreneurship assessment instrument (CEAI) is a tool that indicates a firm's capabilities to take on the CE process. This tool can be used to measure managers' perspectives on internal environmental factors that influence internal entrepreneurial behaviour (Van Zyl, 2015; Hornsby, Kuratko, Shepherd, & Bott, 2020). It can also be used by a firm to show clearly the areas of the internal work environment to be focused on to help achieve successful results. Hornsby et al. (2009) recommend that all companies should make use of CEAI as a strategic tool. Hornsby et al. (2002) also recommend the use of CEAI, emphasising it to be the best tool for strategic transformation through CE. Hornsby et al. (2002) conclude that CEAI was developed to measure the organisational factors that foster corporate entrepreneurial behaviour within a company.

Prior to delving into the explanation and comprehending every component, it is critical to grasp the entrepreneurial behaviour that arises from the application of CE skills. According to recently published research, entrepreneurial behaviour is the process of identifying, assessing, and seizing business possibilities. In describing entrepreneurial behaviour, scholars have projected a number of themes and emphasized certain crucial elements to take into account (Van Zyl, 2015; Hornsby, Kuratko, Shepherd, & Bott, 2020). However ultimately, it boils down to the manner in which individuals within a well-established company generate, support, and experiment with fresh concepts, originality, and creative processes that could lead to the development of new goods, services, or technological advancements (Kamatigam, 2017). This study discusses the five internal environmental factors (CE antecedents) to understand the role and impact each one plays in the process of implementing CE.

2.4.1 Management support

Simmering (2003) and Joseph and Gaba (2020) states that when researchers talk about management support, they refer to the organisational members within an established organisation. Organisational

members are managers who are in charge of other members' work performance. These managers also have official authority to use organisational resources and make decisions. Established firms often have three layers of management: top, middle, and operational. These three major levels of management create a hierarchy, which is rated in order of importance.

Research shows that each level of management plays a key role in corporate entrepreneurial outcomes (Hornsby et al., 2009; Hornsby et al., 2020). Hornsby et al. (2009) mention that managers differ in the use of management support as a resource or capability for entrepreneurial action. Top-level managers instruct middle managers to guide the first-level managers in generating ideas. Without top-level managers' support or proper instructions, middle managers cannot be encouraged to promote and support the first-level managers in assisting employees to originate ideas and take part in entrepreneurial activity (Kuratko et al., 2023). Therefore, the link between managers is important for CE activity to flourish. Encouraging entrepreneurship through an assigning process result in the appointment of managers into the role of entrepreneurs. Identification of management individuals is not always involuntary; it is a process in which some of the appointed or in-position managers may not be suited for their positions. Identified managers may need to follow a mechanical or a superficial search process in pursuit of acknowledged opportunities (Ramachandran, Devarajan, Ray, and Sougata et al., 2006; Kuratko et al., 2023). Each level of a manager's strategic role calls for different actions for the firm to be successful through CE efforts (Schwartz, 2004).

2.4.1.1 The role of the top-level management team in CE

According to Simmering (2003), top-level managers are known as senior management or executives. They are sitting in level one or two, and they hold titles such as Chief Executive Officer (CEO), Chief Financial Officer (CFO), Chief Information Officer (CIO), Chief Operational Officer (COO), President, Vice President, and Corporate Head. In this study, top-level managers are defined according to Birkemalm and Jansson (2018), who state that top-level managers are entrepreneurs, individuals who were involved at the beginning of the business. They are the individuals who start, organize, and manage their businesses.

A considerable amount of literature has been published on internal factors that influence CE. Scholars have acknowledged the distinct function of senior managers in promoting and maintaining corporate ethics in their works on internal issues (Srivastava & Lee, 2005; Ethisphere, 2023; Frontiers, 2023). Although several employees may have distinct responsibilities to play in the process of corporate entrepreneurship (CE), Kamatigam (2017) and Dushnitsky and Lenox (2023) note that the most crucial role in facilitating CE comes from a sponsor, or senior manager who serves as an advocate for entrepreneurial activity. The senior/top-level manager's responsibilities include providing counsel to the champion, assisting in the search for materials and information, endorsing an innovative project with

personal authority, and acting as a compassionate safety net in situations where the champion or staff members must defy a company policy in order to get past a roadblock and carry out the innovation.

According to Suyadi and Java (2014), top-level management support can be given in the form of gifts to staff members who have creative ideas, as well as by introducing entrepreneurial activity into the company's systems and procedures or supplying necessary resources. It is the duty of senior managers to instil in staff members the belief that innovation is a fundamental aspect of working for the organisation. Senior executives must also have a desire to support and grow entrepreneurial endeavours. There is a good chance that bad things will happen if senior managers are not keen to support and encourage entrepreneurial endeavours. The best way to optimize the benefits of CE is to have top-level management support for its adoption or deployment (O'Connor & Rice, 2023). Bhardwaj and Sushil (2012) assert that management support is connected with entrepreneurship. When top management provides support during entrepreneurial action, it can help to build social capital, which encourages employees to take risks without fear of losing their employment or reputation.

According to a study conducted by Srivastava and Lee (2005), organisations with entrepreneurial management successfully and quickly launch new products. It has been suggested that top-level managers create and implement a strategic vision to drive product or process innovations and entrepreneurial activity for all personnel. Top-level managers are critical entrepreneurial resources for a company, influencing the order and timing of new product launches or renewals of existing products. A top-level manager's responsibility is to make decisions that will have a positive impact on the organisation. It is the top management's strategic responsibility to ensure that all recommended objectives are met. They must be creative in their pursuit of product, process, and administrative improvements (Schwartz, 2004). It is also critical to remember that in order for entrepreneurial activity to thrive, senior management must foster an innovative environment, staff members must be trained and encouraged to do so, and innovation procedures that turn ideas into reality are necessary (Ravjee & Mamabolo, 2019). The owners of the resources that the company uses are the only people that hold top-level managers accountable, in contrast to other managers. They occasionally hold the company's ownership. To fulfil the objectives and mission of the company, top-level management must rely on the efforts of everyone (Obiefuna, 2014).

For this study, it is important to mention the role top-level managers play in the construction industry, for as mentioned, the construction industry is brutal. The industry requires top-level management to stay abreast of or alert to what is going on in the market. In the construction industry, top-level managers are not only involved in the decision-making or management of the employees during the innovation or implementation of CE, but also in making sure that they are aware of the trends that may harm or be beneficial for the growth of the organisation.

The construction industry is fast-moving; top management support is also required in day-to-day construction projects. Each project in the construction industry is unique; managers are forced to constantly produce plans on how they can deal with each project and still run the business (Setiawan et al., 2012). Cheng, Li, Love, and Irani (2001) mention that as much as communication is important between managers to ensure that the information is shared amongst the relevant individuals during the implementation of CE, it is also important during a construction project. Top-level managers, as the main players of innovation in the organisation, are to ensure that there is an established fundamental factor of effective communication that construction alliances implement for project success. The construction industry requires all construction alliances to pay attention to clients' requirements. It is the top-level management that must ensure that the client's requirements are met within the stipulated time of the project.

Achieving the client's requirement can only be developed when top-level management develops a quality information system (Polat, Damci, and Tatar, 2011). According to Danial and Misnan (2020), the performance of the information system project is directly correlated with the managerial control exercised by project managers. Project success is more likely when effective managerial control is established through adequate information and communication management. Support from upper management serves as a moderator to help with project control and affects how well the project is performed. It is imperative for upper-level managers to demonstrate substantial connections with every aspect of project success, including resource provision, communication, expertise, power, and structural organisation.

In developing CE, this study gathered that top managers must create a favourable environment that will encourage participants in entrepreneurial activity; failure to provide such an environment will result in negative outcomes. The top managers must be involved in advising on tasks performed by the employees. Top-level managers must also try to involve participants in meetings that have to do with an entrepreneurial activity; if not, there must be representatives' such as middle managers. Top-level managers must show interest in a task completed by the participants by setting up a time to evaluate, assess, and give feedback. Only when there is top management support can entrepreneurial activity be successfully implemented.

2.4.1.2 Middle managers' contributions to CE

Middle managers are managers who are in a central position between top-level managers and operational-level managers in the organisational hierarchies. These managers are responsible for the implementation of top-level managers' plans, ensuring that all operational-level or junior managers are fulfilling their roles (Harding, Lee, and Ford, 2014; McKinsey, 2023). A considerable amount of literature has been published on what middle managers should do and the skills they need to possess to carry out their role of receiving and deploying strategic plans from top-level managers. According to Harding, Lee,

and Ford (2014), middle managers are key players in problem-solving; they ensure that radical changes are successfully implemented, and keep track of the activities completed by their employees and the state in which the activities are completed. Middle managers do not prioritise human resource management tasks, although they are responsible for identifying ever more understated ways of controlling how junior staff work.

Furthermore, literature has been published on how middle managers are more than linchpins (Huy, 2015 ;Tawse, Atwater, Vera, & Werner, 2024), stating that they are important mediators that connect the operational core with the top-level in a way that shapes strategic direction. They are responsible for editing and making sense of the strategic plans in a way that will be simple to understand. For middle managers, it is not a difficult task to edit or simplify the strategic documents and/or plans because for them informal communication with their subordinates is a way of communication. Middle managers do not only reinterpret strategic plans, but they may, like operational-level managers and/or employees at junior staff level, actively resist implementation and reject, re-label, twist, turn, reshape the fashions they confront, or indeed resist importing new ideas. Sometimes middle managers experience anxieties, but if they understand the role of being key players in innovation, they can show enthusiasm about the change process while they are covering up profound anxieties.

According to Hornsby et al. (2002), CE centres around re-energising and enhancing the ability of a firm to acquire innovative skills and capabilities. There are internal challenges that an established organisation encounters when looking into the abilities of a firm to acquire innovative skills and capabilities (Correia et al., 2023). Ren and Guo (2011) indicate that understanding and resolving these challenges require a more careful examination of the strategic role of middle managers in the CE process. Middle managers are critical for corporate strategic formation. As champions of strategic alternatives, middle managers provide sponsorship for new opportunities or ideas from operational-level management and make them accessible to top-level management. They also alter the strategic course that has been formulated by executives for the benefit of achieving a smooth process (Kang & Snape, 2023).

From the survey of existing literature (Harding, Lee, and Ford, 2014; Huy, 2015; Ren and Guo, 2011; Pfeffer and Sutton,2022), this study observes that middle managers are the most important players for innovations to run smoothly. They are at the centre of the levels in the organisation and that makes it possible for them to run the innovation process easily. It has also been noted that middle managers experience anxiety during the innovation process, but because they value their position in the organisation, they cover that up. It is safe to say that an organisation that wants to take the opportunity to utilise CE as a way for growth and profit should consider appointing middle managers as the conduits between levels for the smooth and successful accomplishment of the process. Organisations should also consider not only appointing these middle managers as key players during innovation, but as they do so,

they should have strategies in place to motivate and/or encourage these managers. For these managers to be eager about their role and the growth of the company, appreciating them will accelerate and improve their performance, and eventually even the anxieties they experience subside.

2.4.1.3 Middle managers in the construction industry as "site managers"

The term middle management generally tends to focus more on the businesses outside of the construction industry. Two different strands of research need to be attended to: first, there is an amount of literature addressing middle managers in large hierarchical organisations. Secondly, several publications are discussing the role of site managers in construction companies bringing forth the characteristic type of middle manager, as the site manager (Styhre and Josephson, 2006: 522).

The literature written about site managers does not often refer to the management literature that derives from studies of companies outside of the construction industry. This distinction between the construction industry and other industries is problematic because it presents the construction industry as something that is distinguished from other organisational activities. These roles are similar but because of the different industries they are associated with, they might seem different. In this thesis, an attempt is made to explain the roles of site managers in the construction industry, to bring the necessary understanding needed.

Styhre and Josephson (2006) state that site managers in the construction industry are addressed negatively in the existing literature. Site managers are portrayed as a professional group exposed to conflicting demands and objectives, operating in a complicated work situation (Wong & Lam, 2021). Like middle managers in other industries, Koskenvesa and Sahlstedt (2006) state that site managers carry out one of the toughest jobs in construction projects. They are responsible for the project programme and meeting the client's requirements. They are the middleman between top-level managers and foremen on sites. In most cases, they are frustrated about meeting deadlines, and at the same time they need to implement project methodology suitable for carrying out site activities. Site managers are the most stressed managers in the construction industry; they face challenges from subordinates, and top-level managers. Top-level managers delegate all the responsibilities to the site managers and if those responsibilities are not achieved, site managers are exposed to frustrations from top-level managers. In construction projects, for site managers to meet deadlines, they are required to work long hours. Site managers not only focus on the delivery of the project on time but are responsible for an amount of paperwork, which is one of the most important sources of stress (Sandberg, 2018). Site managers with individual skills or management skills are then primarily high performers because of their skills (Sandberg Räisänen, Löwstedt, & Raiden, 2016).

2.4.1.4 First–level (operational) managers' contribution to CE

First-level managers are also known as first-line managers or supervisors. First-line managers have job titles such as office manager, shift supervisor, department manager, foreperson, crew leader, or store manager (Simmering,2003). According to Hales (2005), the term first-line is often used to show the distinction between the positions of first-line managers and non-management employees. However, there is a controversy in this broad definition on whether first-line managers and supervisors have different roles, or they have the same roles within an organisation.

According to Obiefuna (2014), first-line managers are responsible for the daily management of line workers, and those workers are employees who produce the product or offer the service. Every organisation's work unit includes first-line managers. They are responsible for helping accomplish goals but not for setting up goals and they have a strong influence on the company. They interact with most employees daily, and the manager's performance is important because if they perform poorly, employees may also perform poorly, may lack motivation, or may leave the company entirely (Simmering, 2003).

Data from several studies identify the importance of first-line managers' engagement in the work environment. In general, first-line managers are in a position where they can influence employees to produce innovative ideas through their support for employees. First-line managers influence employees' job satisfaction and work engagement. Lack of positive support from managers is associated with lower self-rating among employees. Therefore, first-line managers play a significant role in implementing work environment initiatives, but mostly they are filled with uncertainty about how they are to engage, especially when it comes to engaging with and supporting their employees. They are mostly less valued as managers that contribute to the growth of the organisation (Molin & Hellman, 2020).

Lombard and Crafford (2003) emphasize the role of first-line managers in organisations, stating that they are responsible for meeting all demands from top-level and middle managers, including client demands. Kuratko, Hornsby, and Bishop (2005) comment that first-line managers are often the catalysts behind the autonomous entrepreneurial initiative.

From the information gathered (Molin & Hellman, 2020), it can be concluded that the involvement of first-line managers in innovation is significant. As already stated, every manager plays a part in the innovation process of an organisation. Without the involvement or influence of first-line managers at their level, employees cannot produce positive outputs. Without supervision, the employees might think that their work or activities are not valued or important. First-line managers work closely with employees, which helps them to understand informal communication, and employees to respect and understand the first-line managers. Managing employees daily can be challenging; organisations should train or equip their first-line managers. The relationship first-line managers create with the employees helps the employees

to work freely and have innovative ideas. Employees are the main assets that the organisation possesses, and many companies make the mistake of focusing so much on their top-level managers that they forget the importance of all managers at all levels including employees at the bottom level of an organisation. For instance, if companies can take the time to appreciate and value all the managers at all levels, they would grow both in innovation and/or development and in day-to-day project outputs.

2.4.2 Work discretion

Ahmed, Khalid, Ahmed, and Shah (2017), define "work discretion" as the ease with which an organisation's structure allows for decision-making at the highest level and the discretion (freedom) to pursue one's career (Lee & Zhou,2023). According to Ahmed et al. (2017), there are two variables that should be considered when identifying work discretion: the internal task environment and organisational structure, and the executive personnel themselves. Any organisation's capacity for innovation is primarily influenced by the degree of autonomy granted to managers and staff (at lower and intermediate levels). The best examples of entrepreneurial spirit are seen in workers who are given freedom to execute their professions and who are encouraged to try new things (Kostopoulos & Bozionelos, 2022).

Ahmed et al. (2017) recommend that employees should be given the discretion to make decisions about their job processes, and criticism should not be the main goal in evaluating tasks completed by employees. Managers likewise should use their work discretion to enhance performance on noticeable tasks; task salience differs across manager levels. Lower-level managers are more focused on delegating and managing tasks to employees across the firm. Middle managers are focused on how to link the groups of top and lower-level managers. Top or senior managers are focused on scanning the environment for opportunities and threats (Kostopoulos, & Bozionelos, 2022). Hornsby et al. (2009) suggest that when the top or senior managers scan the external environment for opportunities and threats, they must also focus their attention on scanning the internal environment because the efficiency of most entrepreneurial actions comes from within the organisation (Burgelman & Grove, 2023).

Suyadi and Java (2014) state that the degree of autonomy granted for entrepreneurial endeavours is known as work discretion, or freedom to work. These researchers also highlight how a lack of coordination and consistent support from superiors might jeopardize entrepreneurial endeavours like autonomy. Disorganisation can result from excessive delegation, which includes duplicating efforts and squandering resources on initiatives whose viability is still up for debate. As such, adjustments to the organisational structure as well as any other initiatives need to be tracked and evaluated. The organisation must strike a balance between finances and tranquillity in order to allow for the investigation of group autonomy and authority in order to curtail pointless operations (Keller & Savla, 2023). According to Suyadi and Java (2014), work discretion can be gauged by an employee's freedom to generate ideas, to choose their own

working methods, to be assessed independently, to be capable of making their own decisions, to choose a business idea, and to be autonomous in their job (Keller & Savla, 2023).

In most organisations, employees are granted discretion by employers to increase or develop their knowledge and improve their performance (Ortega, 2009). It is, however, a challenge for an organisation to give employees sufficient discretion; they always feel like they must protect the organisation to which the employees belong. Employers always play detective to the employees, not giving them enough time to feel the work discretion and take responsibility.

2.4.2.1 Employee engagement, commitment, and motivation

Employees should engage in activities voluntarily and they must understand what is at stake and the benefits of work discretion (Avgoustaki and Frankort, 2019; Billett, 2015). Ways that drive employee engagement are discussed:

2.4.2.1.1 Employee engagement

Avgoustaki and Frankfort (2019); and Billett, (2015) mention that employee engagement means that employees are willing to give something more to the organisation they are working for, not because it is required, but because of their conviction and joy. Engagement occurs when employees are dedicated to doing their work and not merely doing it but successfully. The engagement of employees in their work can be understood as a mechanism that enables the performance of individuals and the whole organisation. Engagement can be achieved when employees engage in their work and are interested in approaching their work positively and with enthusiasm or even excitement and they are ready to make voluntary efforts. Some studies (Horvathova, Mikusova, and Kashi, 2019; Ahmed, Khalid, Ahmed, and Shah, 2017), call engagement a positive, bilateral relationship between an employee and the organisation. Employees with sufficient engagement in their work understand engagement as a value they give to their good employer. Sufficient engagement can be offered by employees when they are interested in what they do, and it excites them.

2.4.2.1.2 Employee commitment

The importance of employee commitment is well captured by many authors (Mugizi, Bakkabulindi, & Bisaso, 2016). Employee commitment is important because it can be utilised by the organisation to predict employee performance, absenteeism, and other behaviours. Ramdhani, Ramdhani, and Ainisyifa (2019) explain the three factors within an organisation that influence employee commitment, namely communication, teamwork, and training development. In explaining communication, Ramdhani, Ramdhani, and Ainisyifa (2019) state that there should be a positive relationship between communication and commitment in an organisation, and these two factors should complement each other. Sufficient

communication between employees and managers in terms of information needed for activities is required. When employees receive adequate information, they are motivated to work hard and be committed to their work. Employees feel valued when there are no restrictions on the sharing of information within the organisation. Sharing information with them creates a safe space for them, they feel like they belong and are part of the organisation. Organisations should strive to create an environment that allows employees to feel free to ask anything about their work and well-being. There should be no need to feel like there are things that are being hidden from them.

Ramdhani, Ramdhani, and Ainisyifa (2019) state that teamwork is a critical factor in employee commitment. As mentioned, employees want to feel like they belong in the organisation. When the organisation offers work discretion to team leaders, it suggests to them that they have the power to influence their team mates on the type of work they give them, and how they lead because it is their leadership skills that will steer others to commit to their work. It is in group activities that employees build relations with each other, and relations have an impact on employee commitment. Development by training the employees comes first before delegating. The number of skills employees gain from training allows them to complete their tasks efficiently. Employee training enhances employee performance.

Ramdhani et al. (2019) mention factors that drive employees' commitment to an organisation. Firstly, an employee's commitment to the organisation can be seen by their emotional attachment, identification with, and involvement in the organisation's activities and its goals, which is the affective domain. Secondly, employee commitment can also be expressed by an employee when they are afraid of disconnecting from an organisation's high-cost membership, for example, fear of detaching from the relationships that have been established with other co-workers, job skills that are unique to the organisation, and monetary investment such as contribution to personal funds. All are non-transferable personal investments, and this is called continuance commitment. Normative commitment is the third employee commitment component. In this case, employees commit and remain with an organisation because they feel obligated, an old-style value of loyalty and duty (Vance, 2006).

2.4.2.1.3 Employee motivation

Islam and Ismail (2008) state that in today's business environment, the future belongs to the managers who can best manage change within their organisations. For organisations to be able to manage change, they must have employees who are committed to the demand of rapid change and employees who value themselves as the source of competitive advantage. Employees are likely not to commit when they are not sufficiently motivated. Sabir (2017) explains that not all employees are motivated by the same things; different things motivate different employees within the same organisation. Some employees are simply motivated or driven more than others to succeed, while others may be motivated by external factors such

as pay, position, and involvement. In most cases, these are the things that always seem to motivate employees in the workplace.

2.4.2.2 Work discretion contribution to CE

In implementing CE, a company should have a solid support system that enables staff members to operate in an adaptable and creatively entrepreneurial manner when it comes to the advancement of the company. In order to determine the administrative mechanism used to assess, choose, and implement ideas or innovative ideas offered, supporting organisational structures must be designed in accordance with workflow settings, communication, and authority relationships within the organisation (Suyadi & Java, 2014). Ravjee and Mamabolo (2019) argue that employees must build the proper amounts of trust between themselves and their immediate superiors for CE to be successful. The organisation's formalisation does not become a barrier as long as there is confidence between the worker and their immediate management.

According to Ireland et al. (2006), CE and/or innovation is achievable when an organisation's structure has a relatively small number of layers, whereby it is easy to create a suitable environment for participants if there are fewer top managers involved in decision making. With fewer managerial layers, authority and responsibility are decentralised, and horizontal or lateral relations among employees are encouraged. Bhardwaj and Sushil (2012) propose work discretion to be critical for CE, together with having an appropriate organisational structure for facilitating work discretion within the organisation.

2.4.3 Rewards and/or reinforcements

Victor and Hoole (2017) state that rewards and/or reinforcements are important tools to encourage employees in organisations. They define rewards as the financial and psychological benefits that an organisation provides to workers in return for their contributions and efforts. On the other hand, reinforcement is a process that an organisation implements after the contribution and efforts. Reinforcement is also used by the organisation to obtain and strengthen new behaviours by adding new rewards and incentives instead of eliminating benefits to the workers (Pfeffer & Sutton,2022).

Danish and Usman (2010) state that motivation is a component that influences workers' behaviour and output. Furthermore, they claim that motivation is the culmination of various processes that mould and guide workers' actions toward the accomplishment of particular objectives. In today's workplace, there is a dynamic that specifically incorporates and produces a beneficial impact on the job. When workers receive an unexpected increase in compensation, recognition, or praise, their motivation levels rise. Employees with high levels of motivation facilitate the achievement of the organisation's objectives, business plans, high productivity, expansion, and performance. When there is a poor fit between work

patterns and the workforce inside a company, motivation becomes even more important (Ryan & Deci, 2023).

According to Ogwueleka and Maritz (2013), the position of awards in the construction business is currently being debated and criticised. While incentives are widely employed in the construction industry, there are various key debates about their usefulness and potential downsides.

Ogwueleka and Maritz (2013) express the critique that traditional construction reward systems frequently focus on individual achievement, which can encourage a competitive rather than a collaborative work environment. Construction projects are often group efforts that necessitate excellent coordination and cooperation among numerous parties. Overemphasis on individual rewards may erode teamwork and impede project accomplishment. As a result, more team-based or collective rewards that promote collaboration and shared goals are required.

A further criticism is the potential imbalance and perceived injustice in award distribution. Biases or favouritism in the selection process or subjective criteria for awards may occur in some instances, leading to employee demotivation and discontent. To overcome these concerns, it is critical to ensure openness, fairness, and clear reward criteria (Peluso et al., 2017).

Furthermore, Yahaya (2021) states that the nature of construction labour makes it difficult to adequately measure individual performance. Unlike in other industries where measures are clearly quantifiable, measuring the performance of construction employees can be subjective and complex. This calls into doubt the validity and dependability of performance-based reward schemes (Sathe et al., 2017).

2.4.3.1 Two types of rewards

There are two reward categories, namely intrinsic and extrinsic rewards, that have been found to help motivate employees in the workplace. These reward systems motivate different employees in different ways, but both make employees feel and want to do more in their work.

2.4.3.1.1 Intrinsic rewards

According to Victor and Hoole (2017), intrinsic reward is given to employees by managers to motivate them. It is not financial nor tangible motivation but is a reward that is offered to enhance employee performance in the workplace. The intrinsic reward can only be given to the employee when a manager acknowledges the employee's effort. This type of reward is an exchange for employee involvement in the organisation's activities. These rewards have to do with individual performance and the inner fulfilment that employees experience when they accomplish something. Intrinsic rewards are psychological, positive, and meaningful and comprise an emotional, work-related experience that individuals obtain from their work. All these factors have a positive impact on the employee's performance. When employees feel

and are shown how important they are and the value they add to the organisation, they become devoted to the organisation, and that has a positive impact on their performance. These rewards are not merely offered but are given to enhance employees' motivation and to show employees how the employer feels about them. To elaborate on intrinsic rewards, the four intrinsic reward dimensions, namely recognition, appreciation, challenging tasks, and meaningful work will be discussed (BetterUp,2024;Hoxha & Ramadani, 2024).

Amoatemaa and Kyeremeh (2016) identified employee recognition as the most effective motivational instrument in the workplace. Employee recognition does not only have an impact on employee job satisfaction but also on organisational performance entirely. Employment performance improves the organisation's performance and that includes customer satisfaction. Effective recognition promotes good production; when employees are sufficiently recognised, they tend to be more committed to their work. An organisation that motivates its employees grows its competitive advantage.

According to Reilly (2004), managers can express non-financial appreciation in a variety of ways, such as by simply expressing "thank you" to an employee for a job well done. A formal letter to the employee or a public statement can be used to accomplish this. Other businesses even go above and beyond by giving their staff members gifts. Acknowledged workers are passionate and have a good outlook on the company and their work, which can improve both the quantity and quality of worker output (Danish & Usman, 2010). This is corroborated by recent research, which demonstrates that non-cash rewards like verbal or public acknowledgment increase loyalty and work satisfaction (Podger, 2022). Furthermore, employees are more likely to have favourable work attitudes and higher performance levels when they are recognized for their achievements (Aslam et al., 2021). Non-monetary forms of appreciation, like awards or thank-you letters, also improve employee engagement, and create a happy work atmosphere, which in turn increases productivity (Malik & Singh, 2023).

Appreciation is another dimension that can be exploited to provide intrinsic rewards. According to Fagley and Adler (2012), appreciation, like recognition, can be conveyed in a variety of ways at work. For example, a company can provide vouchers and publicly acknowledge an employee's job well done during staff meetings. An employer can invite an employee to lunch and use the chance to discuss how well the person is doing and how she/he might improve, or offer the employee a day off to spend with his/her family. Appreciation promotes well-being, both directly and indirectly, and improves social interactions. Recent research confirms that appreciation, whether through public recognition, personal gestures, or time-off benefits, is critical to increasing employee engagement and productivity (Davis, 2023; Patel & Sharma, 2021). A study by Fagley and Adler (2012) has shown that when employees feel appreciated, their trust and well-being increase. When organisations prioritize appreciation, employees gain high confidence in themselves and their work.

Challenging assignments require employees to evaluate whether the work assigned to them by their superior is too difficult, too easy, uninteresting, or fascinating (Kiruja, & Mukuru, 2013). Employees will perform better if their employers provide them with interesting and motivating tasks. Work is hard in this sense because it demands the worker to interact with it, whether it is difficult, easy, or uninteresting. Challenging jobs excite some employees, but they do not motivate others, depending on their reactions. Hernandez and Clark (2023) explore how tough and engaging assignments can result in great outcomes when they are linked with an employee's talents and interests. Furthermore, employees who are driven by difficult activities regard them as part of a learning curve that promotes professional development and job satisfaction (Nguyen & Lee, 2021; Jacobs et al., 2014). Some employees, on the other hand, may get demotivated if they view their responsibilities to be excessively tough or misaligned with their abilities (Li & Zhang, 2022).

Jacobs, Renard, and Snelgar (2014) define meaningful work as the worker's feelings about his or her work. Meaningful employment requires an employee to regard their job as worthwhile and purposeful. The worker does not take his or her job for granted, but instead values it. This signifies an employee understands what has to be done and why. Meaningful work also means that employees understand how their everyday responsibilities contribute to the organization's success. According to Harris and Parker (2022), employees who believe their work is important are more likely to experience a strong sense of purpose, which fuels long-term motivation and dedication to the firm. Working for a worthy cause makes an employee feel rewarded (Wilson & Thompson, 2023). Furthermore, meaningful employment promotes organizational success by cultivating a motivated and devoted workforce (Rodriguez & Allen, 2021).

2.4.3.1.2 Extrinsic rewards

Extrinsic rewards consist of financial rewards, pay, benefits, promotions, and incentives that satisfy employees to some extent. This type of reward is an additional reward for employees who are already motivated, appreciated, and committed (Danish & Usman, 2010). The main goal of extrinsic rewards is to increase employees' willingness to work in the organisation and to enhance their productivity. Most people consider rewards to be connected with salary increases or bonuses, while other people just prefer a pay increase to a bonus and in some organisations a pay increase is mandatory (Kuvaas & Dysvik,2022).

According to Niguse and Getachew (2019), bonuses are utilized by firms to incentivize staff to perform exceptionally well. This award is awarded to employees that do exceedingly well or exceed their goals. Recent studies elaborate on this. Lam and Kammeyer-Mueller (2023) discovered that performance-based bonuses can increase employee motivation and job satisfaction, but they can also induce biases in performance evaluations. Similarly, Gong and Zhang (2022) point out that, while annual bonuses might motivate employees to work hard all year, the efficacy of bonus schemes differs depending on their structure. For example, Bamberger and Belogolovsky (2022) examine how fixed bonuses minimize

asymmetric information while potentially leading to biases in performance-based evaluations. As a result, Khan et al. (2017) argue that employers and managers must be especially cautious and neutral when introducing bonus programs to prevent discouraging employees.

Asaari, Desa, and Subramaniam (2019) define a salary as a form of payment made by an employer to an employee that is normally established in a contract between the two parties. The pay agreement describes the obligations that the employee must perform. A salary indicates an employee's importance to the firm and is used as a regular form of payment. When an employer discusses a pay rise, this is a different type of extrinsic reward. According to Choi and Lee (2022), wage increases are an important component of extrinsic rewards that honor employees' hard work, efforts, and achievements. Salary increases can also be provided for learning new skills or achieving academic goals, providing as both a form of recognition and motivation (Pfeffer & Sutton, 2023). These increases can thus be utilized to recognize employees' contributions and strengthen their commitment to the organization.

Salary increases encourage people to expand their skills and competencies, resulting in an investment for the firm. This advancement may result in increased productivity and performance. This compensation system can also contribute to long-term employee happiness, as long as managers are fair and equitable, avoid favouritism, and ensure that all employees receive what they deserve (Khan et al., 2017). According to recent studies, money remains a primary incentive, meeting fundamental life needs and increasing employee creativity (Ng & Feldman, 2023). Furthermore, wage increases have been demonstrated to motivate employees to perform better, particularly when they feel dedicated to the firm and its goals (Bamberger & Belogolovsky, 2022).

According to Khan et al. (2017), gifts are considered to be short-term rewards that an employer presents as a form of appreciation to the employee. A gift is not a type of reward that most organisations consider to be effective but like any other reward, it is effective. It plays an important role in developing employees' confidence and self-esteem. Gift rewards create a clear understanding of what the management thinks of the employees. Gifts can be in the form of holiday resorts that a company books for the employees to show appreciation, or vouchers that employers give to their employees for achieving a certain task. After receiving a gift, an employee mostly feels the need to increase work effort and performance.

According to Asaari, Desa, and Subramaniam (2019), promotion refers to an employee's advancement within the organizational hierarchy. Niguse and Getachew (2019) define promotion as when an employer elevates an employee to a higher position within the same field or department, resulting in increased duties and authority. Promotions frequently represent trust and autonomy offered to employees, demonstrating their loyalty, trustworthiness, and dedication to the organization. This type of extrinsic reward often comprises a higher position, a pay raise, and greater company advantages (Kuvaas &

Dysvik, 2022). Implementing fair internal promotion chances can improve employee performance and retention while eliminating the costs associated with regular external hiring and training. As observed by Pfeffer and Sutton (2023), promoting current personnel allows the organization to capitalize on their existing knowledge and experience with internal processes, lowering turnover and associated expenses.

According to Asaari et al. (2019), promotion refers to an employee's rank or position in the organisational hierarchical structure. Niguse and Getachew (2019) state that promotion occurs when an employer moves an employee from one position to a higher position in the same field or department. This means that an employee's position increases in the field to a better job, compared with the previous position. A promotion comes with greater assigned responsibility and authority. The employee, after being promoted, receives sufficient autonomy and mostly there is an indication of trust between an employer and the employee. The employer promotes employees because they feel that the employee is loyal, trustworthy, hardworking, and has shown care for the organisation. Promotion is the most common form of extrinsic reward. A promotion also comes with a salary increase and additional company benefits. Organisations can enhance employee performance by implementing internal fair promotional opportunities for the employees. In managing employees within an organisation, the management has to be skilled in retaining, attracting, and motivating employees. Promotion can help the organisation avoid hiring over and over, but instead promoting employees who already know the system and strategies of the organisation. Hiring new staff every time there is a new position, training new people and the process of hiring might cause a loss to the organisation.

2.4.3.2 Rewards and/or reinforcement contribution in CE

According to Suyadi and Java (2014), rewards and reinforcements are designed to motivate employees to exhibit innovative behaviour. They also note that rewards can create challenges for recipients and observers, as they increase responsibility and may lead to conflicts among employees. This suggests that while employees are motivated by rewards and eager to participate in new projects, not all are suited for such roles or meet performance standards. Recent research supports this view: Kuvaas and Dysvik (2022) emphasize that an effective reward system should align with goals, provide feedback, and focus on individual responsibility and results-based incentives. Additionally, Smith and James (2023) argue that well-structured reward systems can help managers and supervisors assess the risks associated with entrepreneurial activities and enhance overall organizational performance.

Ravjee and Mamabolo (2019) explain that companies that practice high-performance work systems have shown a positive influence on the culture of CE within their organisations. Ravjee and Mamabolo (2019) further state that human resource practices that consist of rewards and compensation have also been shown to provide an organisation with an advantage over competitors by encouraging creativity and innovation. Furthermore, reward systems encourage employees to take risks and be entrepreneurial. In

short, rewarding and recognising employees is vital for CE, as employees are naturally motivated to participate through incentives. Therefore, it is important to provide a network of connections such as rewards that enable entrepreneurial behaviour that serve as a source of new opportunities for the organisation.

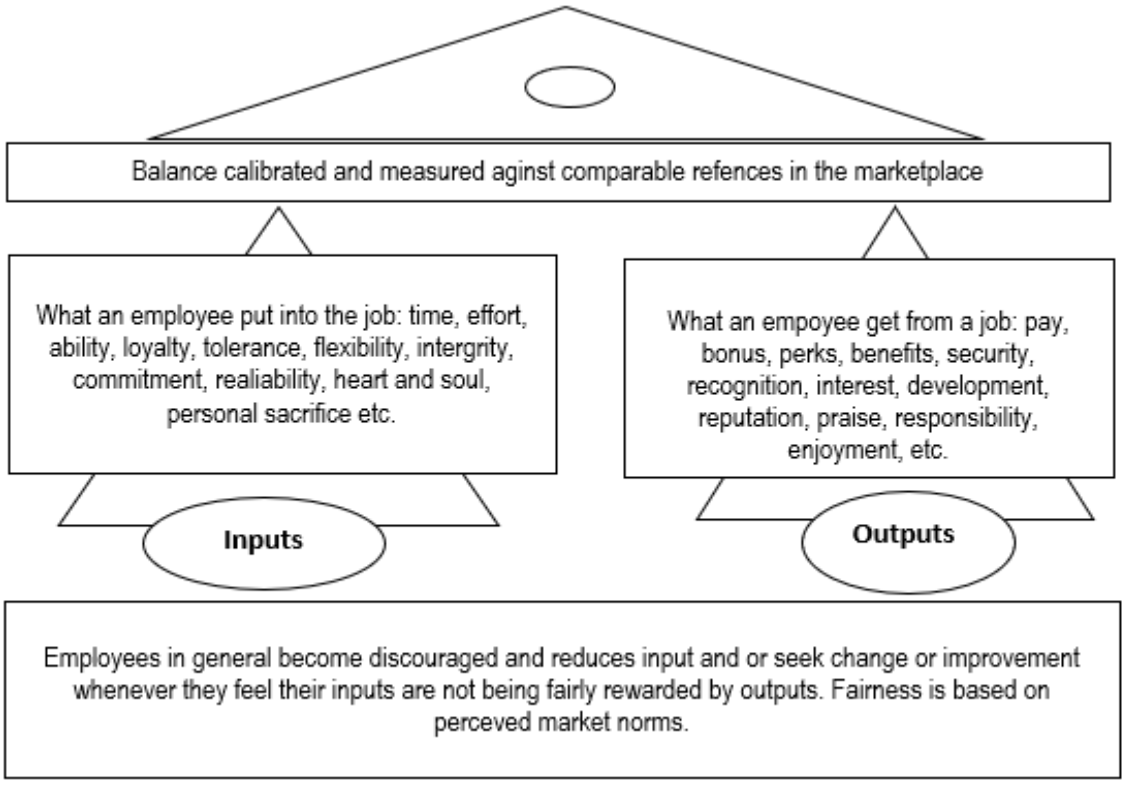


Figure 2.2: Job motivation

Source: Coffey (2013)

It is understood from Figure 2.2 (Coffey, 2013) that what an employee produces must be seen and valued by an organisation. Employees are driven by the pay, bonus, perks, benefits, security, recognition, interest, development, reputation, praise, responsibility, enjoyment, etc., both appreciation and recognition. What employees offer, namely their time, must be equivalent to what they can receive from their production. When employees' efforts are not recognised or rewarded, most employees get discouraged and some end up resigning from the organisation. Employee happiness is an organisational gain, meaning when employees are happy, they achieve productive results or perform their best. An organisation that seeks to increase its competitive advantages, and profits, must consider the most valuable internal resources, the employees.

Ramachandran et al. (2006) contend that money should not be regarded as the fundamental motive for entrepreneurial activities. Instead, entrepreneurial achievements are frequently acknowledged through recognition, such as promoting the company's success stories and elevating the prominence of idea

advocates. These champions may also get the chance to spearhead new projects or expand into new business divisions. Failure is regarded as a natural part of the entrepreneurial process, and the emphasis should be on problem solving and learning from setbacks rather than assigning blame. Recent research supports this perspective. Chen and Huang (2023) argue that recognition and career growth opportunities are critical for motivating individuals in entrepreneurial professions. Similarly, Robinson and Judge (2022) underline the significance of creating a learning-oriented culture in which failure is perceived as a steppingstone rather than a hindrance.

In summary, according to Baskaran, Mahadi, Abdul Rashid, and Mohd Zamil (2018), entrepreneurial behaviour among employees will not emerge unless employees perceive that they will be rewarded accordingly. Recognition for their significant contribution or extraordinary entrepreneurial performance is what an employee expects in pursuit of entrepreneurial intention activation, although there are claims that rewards may not necessarily influence a decision-making process. Some studies have also indicated that rewards and reinforcement inspire employees to take on challenging work, especially when all the promised rewards are delivered.

2.4.4 Resource/time availability

Govender (2010) defines organisational resources to include money, time, people, equipment, and capabilities. The author also states that organisational resources refer to all assets, capabilities, organisational processes, organisational attributes, information, and knowledge, which are all in the organisation's possession and control.

Resource or and time availability are essential capabilities for construction companies in the construction sector. The efficient management of these aspects is critical for the effective completion of construction projects. According to Simpeh (2021), time availability refers to the ability to accomplish projects within the stated timeframe. Construction projects frequently have rigorous timelines, and delays can result in increased expenses, client unhappiness, and reputational damage. As a result, construction businesses must be able to efficiently plan and execute their projects, ensuring that activities are finished on time and within the set timetable.

The following outlines or presents literature on different types of resources.

2.4.4.1 Organisational resources

This study looks into three organisational resources which are human, tangible, and intangible which impact an organisation's performance (Inmyxai & Takahashi, 2010; Carmeli, 2004).

2.4.4.1.1 Human resource

According to Halmaghi and Bacila (2018), an organization is fundamentally a human resource comprised of individuals ranging from management to lower levels of the organizational structure. They underline that people's attributes include qualities, knowledge, skills, manners, goals, expectations, values, and behaviours. Society is made up of a network of institutions that change and collapse, but individuals remain the most valuable resource. An organization's growth and sustainability are heavily influenced by the conduct and efforts of its employees, who define how operations should be managed for organizational success. Recent research supports this view: Albrecht et al. (2022) argue that employee behavior and growth are critical for organizational performance and long-term survival. Similarly, Wright et al. (2023) contend that investing in human resources is critical, despite the expenses of salary, maintenance, and development, because it secures the organization's growth and success. Human resources are a significant investment, and their success or failure directly affects the organization's outcomes (Becker & Huselid, 2022).

In addition, Francis, Clifford, and Nagga (2019) state that training and development are formal activities offered by organisations to assist their employees to obtain the skills and experience necessary to perform current and future activities. Additionally, these formal activities are offered to assist employees so that they can make a positive contribution in the form of good performance. An employee who receives training from an organisation not only gains skills, the correct attitude, and the knowledge required but also becomes an asset in that an employee saves management time. The management can proudly delegate work to that sort of employee and not offer supervision because a trained employee can be dependable. In comparison, an untrained employee might be fearful and inadequate, or even resign out of frustration. Hence, human resource development remains important for the growth of an organisation.

Several studies have revealed that organisations need to continually measure employee performance to compensate deserving individuals fairly for achieving certain predetermined criteria like competency, initiatives, teamwork ability, skills, and ability. The organisation’s job does not stop at training and developing its employees, but extends to continually adjusting its strategies to enable its employees to grow (Francis et al., 2019). As noted in this thesis, human resources are people who form an organisation. They are an organisation's chief asset; therefore, an organisation cannot survive without them. Because employees are organisational assets, organisations need to treat them with care and respect. An employer’s treatment can be reflected in the employee’s productivity.

2.4.4.1.2 Tangible resources

According to Othman, Arshad, Aris, and Arif (2015), tangible resources are physical and financial assets that appear in an organization's financial statements. These resources are easily found and analyzed.

Physical resources include land and buildings (in terms of size and location), as well as plant, equipment, machinery, and tools. Financial resources are necessary to fund the organization's operations. Recent research reveals that physical resources have a substantial impact on employee performance. Ng'ang'a (2017) emphasizes the importance of physical resources such as infrastructure, equipment, tools, and factories in manufacturing items and sustaining work performance. The products produced, including tools and equipment, are critical to the manufacturing process and overall job efficiency (Jones & George, 2023; Smith, 2022).

Othman et al. (2015b) state that financial resources include, amongst others, financial liquidity, operating funds, and borrowing capacity. Othman et al. (2015b) additionally state that financial resources are important to create stable organisational profitability. Sufficient financial resources are needed for an organisation to operate successfully and implement internal growth for future success. There are two components of financial resources, namely current assets, and business finance. Assets that possess liquidity and can easily be converted into cash are called current assets. These assets include cash, accounts receivable, inventory, prepaid expenses, marketable securities, and other liquid assets that can be converted to cash. Current assets are paramount to cash flow management and forecasting, which are heavily utilised to pay the bills and repay borrowed money and other things. These assets are only there to help the organisation in the short term with cash flow problems. If an organisation does not have enough funds to repay short-term liabilities, it would normally need to pay using capital, which usually drives an organisation to bankruptcy. An organisation’s ability to meet short-term liabilities is a key factor in determining its performance in terms of success. An organisation must therefore always maintain its current assets to maintain cash flow. The organisation is defined by how well it utilises its assets. Tangible resources are assets because they can grow and be invested. They can be used to pay borrowed funds and they can also be sold to sustain the organisation.

2.4.4.1.3 Intangible resources

Carmeli (2004) states that, unlike tangible resources, intangible resources cannot be recorded in material reports or balance sheets. Intangible resources are invisible assets that contribute significantly to long-term performance, such as morale and confidence. According to Bounfour and Miyagawa (2015), some intangible resources exist in the minds of specific organizational human capital, which include technical knowledge, relationships, and creativity. These resources are difficult to acquire and function as both input and output in the organization's operations. They make a major contribution to establishing organizational value, are rigid, and difficult to replicate (Morris & Pinto, 2023). According to Bounfour and Miyagawa (2015), intangible resources are limited, difficult to acquire, and transfer between enterprises. While most intangible resources are linked to the corporation rather than individual individuals, they include corporate culture, norms and values, reputation, brand image, and competencies. It is also vital to recognize that all intangible resources

require time to develop, making them difficult to replicate. As a result, intangible resources are thought to be a source of long-term competitive advantage, which is confirmed by empirical findings (Barney & Hesterly, 2022; Villalonga, 2004).

Rua and França (2017) state three intrinsic characteristics that distinguish intangible resources from tangible resources. Firstly, intangible resources cannot deteriorate with use; these resources are expected to enhance benefits in the unpredicted period for the organisation. Secondly, different managers within an organisation can use intangible resources at the same time, for example, the use of a brand is available to be utilised by all managers at the same time. Finally, intangible resources are immaterial, meaning that they are difficult to exchange as they often cannot be separated from the owner.

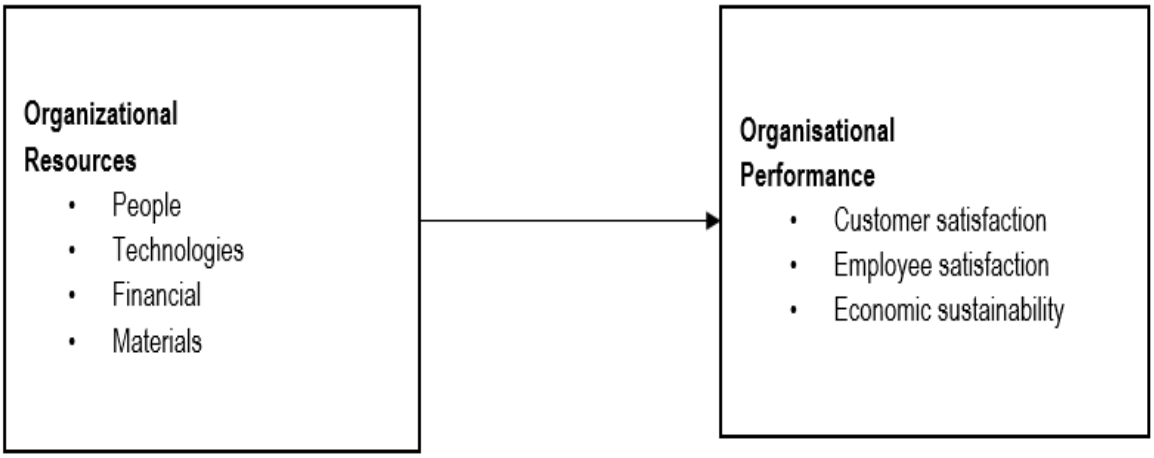


Figure 2.3: Resource availability drives organisational performance.

Source: Otulia et al. (2017)

Figure 2.3 indicates that organisational performance is a dependent variable, whereas organisational resources are independent variables that influence the organisation's performance. An organisation cannot successfully perform without internal resources. Organisational resources are important for the organisation's growth and success. People are valuable resources for the organisation especially if the organisation takes time to develop people's skills. People do not only use resources for activities, but resources are used to motivate employees. Both tangible and intangible resources are useless without human resources (García-Sánchez, García-Morales, and Martín-Rojas, 2018). Hence, both tangible and intangible resources are important resources for organisations. Although tangible resources depreciate over time and intangible resources may accumulate in the long run, they are both utilised for the benefit and growth of an organisation.

2.4.4.2. Resource availability contribution to CE

In today's dynamic and competitive climate, organizations must be aggressively competitive. The fundamental basis of an organization's competitive edge is its ability to adapt to changing external conditions and industry structures (Carmeli, 2004). Govender (2010) emphasizes that a firm's ability to pursue innovation is limited by its resources, as entrepreneurial ventures need significant resources. Firms cannot engage in entrepreneurial projects unless they have appropriate resources. Recent research suggests that the availability of resources promotes entrepreneurial behaviour within established businesses. According to Kuckertz and Wagner (2022), the availability of resources fosters experimentation and risk-taking, but a scarcity of resources discourages engagement in entrepreneurial activity. Similarly, Al-Msallam et al. (2023) point out that resource constraints can limit a company's ability to innovate and pursue entrepreneurial opportunities effectively.

Ratten and Ratten (2018) emphasize that in order for businesses to inspire entrepreneurship, employees must have enough time to observe, experiment, and develop ideas. Allowing employees free time at work enables them to take chances, invent, and implement their ideas. Firms embarking on the corporate entrepreneurship (CE) process must give resources while avoiding limiting employees' time to explore new ideas, as withholding resources might result in unfavourable entrepreneurial consequences. Similarly, Ravjee and Mamabolo (2019) argue that employees must perceive the availability of resources for entrepreneurial activities. Resources are required to initiate new projects and ideas; a lack of resources might limit opportunities and flexibility inside the organization. They say that insufficient resources impede the implementation of CE, and that staff should be given time to develop their concepts. Employers should also ensure equitable workload sharing and foster teamwork to address chronic difficulties. Giving employees time for creative and entrepreneurial experimentation is critical in creating an entrepreneurial atmosphere (Johnson & Lee, 2023; Patel & Fiet, 2024).

Suyadi and Java (2014) state that resources at hand, such as the time needed to make the experiment easier to carry out, should be used to support the application of CE. To motivate people to try new things and take chances, employees must to have the authority to manage the resources made available for innovative projects. Suyadi and Java (2014) say that time availability aids in measuring the appropriate amount of work and workload.

2.4.5 Organisational boundaries

According to Dumez and Jeunemaitre (2010), organisational boundaries refer to the boundaries built within the workspace. They might be in research and development, production, and/or sales. These boundaries fall between layers of management within the company, or boundaries amongst customers, external partners, or countless industries. Boundaries are arranged by actors of different backgrounds or

with different knowledge (Kodama, 2018). Dumez and Jeunemaitre (2010) state that the concept of a capability unit is connected to the idea that there are no such things as natural boundaries.

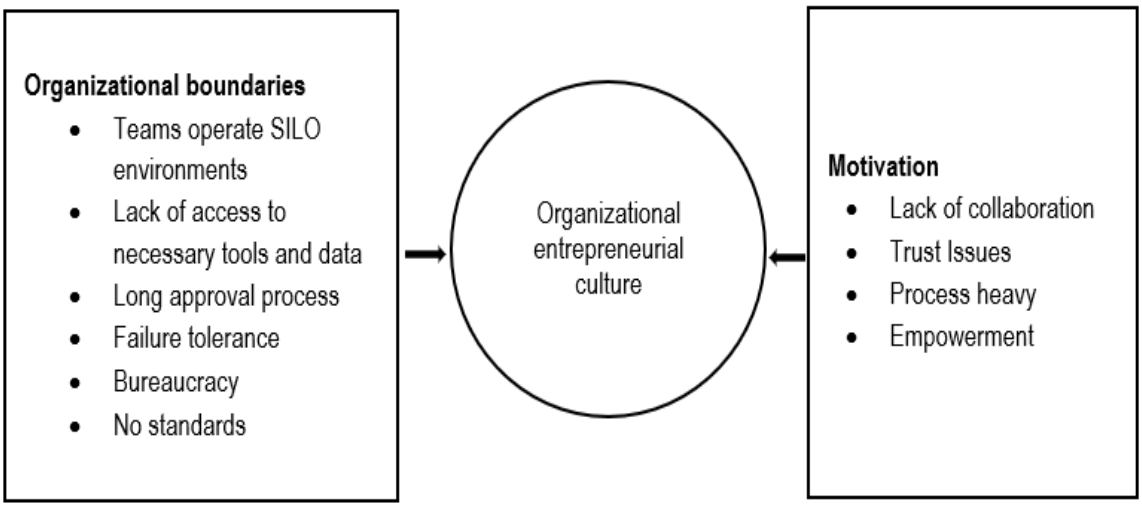


Figure 2.4: Factors discouraging innovative and entrepreneurial activities in organisations

Source: Kamatigam (2017)

Figure 2.4 suggests that trust issues, empowerment, lack of collaboration, and process heaviness are hindrances to motivation in team members. Bureaucracy, lack of access to tools and failure tolerance, long approval process, no organisational standards, and team operating in silos are also stated as organisational boundaries obstructing the CE phenomenon. The cultural background affects entrepreneurial behaviour. The firm leadership need not be resistant to change if they want the CE process to succeed. This thesis attempts to explain the organisational boundaries stated in Figure 2.4. In most cases, the element that stands in a way of innovation is resistance to change, which forms part of organisational boundaries. This element is discussed in detail below.

2.4.5.1 Resistance to change

According to Cornescu and Adam (2016), organizational change frequently occurs only when it is demanded, and companies cannot fully control this demand. Change often involves a period of stress, dread, and uncertainty as it moves from the known to the unknown. Organizations that fail to adjust on a constant basis risk losing productivity and competitive advantage. Despite the potential benefits of organizational change, managing the change process is difficult due to hurdles associated with employee behaviour. Resistance to change is a natural reaction caused by worry and anxiety about the unknown consequences of the change. This resistance is not directed at the change itself, but rather at the perceived negative repercussions and dangers to personal security and job performance. Employees

oppose change because they are concerned about how it will damage their interests and because it causes discomfort into the workplace culture (Kotter & Schlesinger, 2023; Armenakis & Bedeian, 2024).

According to Gupta (2018), change can be categorised as planned, which is a consequence of intended actions taken as a by-product of conscious reasoning and decision-making. Planned change for example can occur when an organisation plans to complete a project in a certain time using certain resources to accomplish the goal. On the other hand, there are unplanned or emergent changes. These changes are carried out in an unplanned way, in a spontaneous manner, and with a high degree of uncertainty and anxiety.

According to Hao, Shen, Neelamkavil, and Thomas (2015), change is a typical occurrence in the construction business, occurring from a variety of causes and resulting in repercussions such as project cost hikes and timetable delays. Construction companies handle a variety of projects, each of which is managed uniquely despite the use of the same staff and resources. Clients frequently request revisions, which require contractors to identify answers while still completing the job within the agreed-upon timetable. When modifications in construction projects are not addressed through a defined management procedure, they can result in major contract disputes, potentially contributing to project failure. Project alterations or adjustments are unavoidable at all stages of design and construction, and project managers frequently find handling these changes to be a considerable burden (Jung & Joo, 2022; Wang et al., 2023).

Rozencweig and Rozencweig (2008) conducted research on successful ways for controlling subordinate resistance during building projects. Resistance is a regular difficulty for project managers, especially when changes occur frequently and are not adequately handled. This resistance can become a serious impediment to project completion, leading to staff discouragement. Project managers can reduce employee resistance by recognizing their concerns, emphasizing the benefits of project completion, and addressing the underlying causes of resistance. Managers must clearly communicate the benefits of finishing projects on time, both individually and collectively. If employees remain apprehensive, managers should actively listen to their concerns and work with them to incorporate their suggestions into the project's objectives. However, project managers' attention is generally limited to the specific projects they manage, rather than larger organizational changes (Zhao et al., 2022; Lee & Kim, 2023).

Lines, Sullivan, Smithwick, and Mischung (2015) underline that effective change attempts necessitate leadership capable of making thoughtful and informed judgments. In the construction sector, change agents—often middle managers—play an important role in guiding and executing reforms. According to Marrewijk (2018), while middle managers often serve as change agents and sponsors, they might also feel ambiguity and change-related worries like other employees. This is because change processes and

organizational restructuring frequently raise concerns about monitoring, surveillance, and limited autonomy. Middle managers may be resistant to changes that endanger their status, job security, or autonomy, but this resistance is motivated more by maintaining their position than by opposing change in general. Middle managers are thus well equipped to be change agents, and organizations that lack designated change agents, particularly among middle managers, face more resistance to change than those that do (Mousavi et al., 2021; Jafari & Mazrouei, 2022).

Identifying middle managers as change agents is beneficial in two ways: firstly, middle managers are responsible for assigning responsibilities to other organisational employees and are accountable for change implementation success. Secondly, middle managers become a guiding force that supports other organisational employees who might be struggling with or questioning the change. The involvement of middle managers in change implementation activities is important. The middle manager's day-to-day involvement contributes to actual project-specific delivery within the change implementation process. This minimises resistance because other employees in the organisation are inspired when middle managers who are in a formally designated leadership role are both present and supportive. Change requires patience as well; change implementation as a long-term process requires consistent education and failure tolerance, and middle managers have been shown to be capable. Organisations cannot expect change to be easy, rather, overcoming resistance requires understanding that change implementation is a long and strategic process, and not a short-term tactical process.

In this study, it is understood that employees become resistant to change only when they do not have details about the changes that are being introduced by the organisation. Resistance is caused by fear of the unknown and being comfortable with the status quo. Change can be good for growth, but growth depends on how well change has been received, and experience teaches us that some changes have been disastrous for organisations.

2.4.5.2 The contribution of organisational boundaries to CE

According to Bhardwaj and Sushil (2012), flexibility in organizational boundaries is an important element affecting corporate entrepreneurship. Flexibility refers to an individual's degree of flexibility in choosing their obligations and responsibilities, as well as accepting risks. High degrees of flexibility, as demonstrated by excellent communication and an open flow of information throughout the firm, are essential for successful entrepreneurial activity. A flexible organizational structure is critical to the success of new goods. Systemic flexibility consists of three key components: freedom of choice, adaptability to change, and the pursuit of new opportunities. The organizational flexible boundary refers to a business unit's flexibility in administrative relations when responsibility is delegated to situational competence. In contrast, a corporation that strictly follows bureaucratic rules and maintains strict administrative

interactions is not very adaptable. Furthermore, socio-political governance in emerging economies has been shown to influence organizational structure and flexibility (Chen & Yu, 2022; Ahmad & Hadi, 2023).

Thomson and McNamara (2001) emphasize that organizational learning, and hence corporate entrepreneurship (CE), is a collaborative effort that thrives in an environment conducive to entrepreneurial behaviour. To work effectively, entrepreneurial teams must have two key components: a common language for idea exchange and a high level of trust within the firm and among team members to freely share ideas. Recent research has shown that successful team innovation processes require cross-functional communication and involvement in order to effectively exploit novel product and process ideas (Gonzalez & Torres, 2022; Lee, 2023). To enable the exchange of ideas and the development of new products and services, these discussions require a common core language and perspective. Furthermore, team members must have enough trust in the company and each other to share their most important ideas without fear of retaliation or personal harm. When team members suppress critical information from others, particularly during experimental periods, it signals a breakdown in team orientation. As a result, it is stated that corporate entrepreneurial activities are unlikely to succeed without a strong team orientation (Smith & Brown, 2021).

2.5 Overview of the Construction Industry in South Africa

South Africa's construction industry plays a crucial role in the economy, making substantial contributions to (Gross domestic product) GDP and generating a significant number of jobs. This industry encompasses a wide range of activities, including the construction of residential, commercial, and industrial buildings, as well as the development of infrastructure such as roads, bridges, and utilities. It accounts for approximately 4% of the national GDP, serving as a key engine of economic growth. However, the industry's performance is highly dependent on the overall economic climate; economic downturns tend to result in decreased investment, while periods of economic growth led to heightened construction activity (Odunayo & Sardar, 2020).

One of the industry's most significant contributions is job creation. Recent data from Statistics South Africa (2022) highlights the sector's labour-intensive nature, employing over 1.3 million people, including both skilled and unskilled labour. This employment is critical in a country with high unemployment rates, as it provides opportunities for income generation and skill development (Statistics South Africa, 2022).

Recognizing the industry's importance, the South African government has implemented several initiatives to support its growth. The National Development Plan (NDP) 2030 outlines a strategy for improving both social and economic infrastructure. Key projects include the Gautrain Rapid Rail Link to enhance mobility, the Medupi and Kusile power stations to meet energy needs, and the Square Kilometre Array (SKA) to establish South Africa as a leader in scientific research (Deloitte, 2021; Engineering News, 2022;

Statistics South Africa, 2022; BusinessTech, 2021; South African Government, 2019; South African Government, 2020).

Despite its significance, the construction industry faces several challenges. Economic cycles heavily influence project funding and execution. Navigating the complex regulatory environment, which includes labour laws, environmental regulations, and health and safety standards, can be costly and challenging for construction companies. There is also a notable shortage of skilled labour, leading to project delays and increased costs, necessitating efforts to retain and develop skilled workers. Additionally, corruption remains a significant issue, affecting the fairness and efficiency of project tendering and execution. Maintaining transparency and accountability is crucial for the sector's success and reputation (Windapo & Cattell, 2013).

2.6 Discussion of the medium-sized construction firms in the South African context

In South Africa, medium-sized construction firms typically employ between 50 and 200 people. These companies frequently manage multiple projects simultaneously, ranging from infrastructure developments to residential and commercial constructions. Their annual turnover varies significantly based on the scope and number of projects, generally ranging from R10 million to R50 million (Mafundu & Mafini, 2019; Business Wire, 2021; BOPCONS, 2020).

The operations and expansion of medium-sized construction enterprises in South Africa are impacted by several major issues (Windapo & Cattell, 2013). A critical challenge is maintaining a steady cash flow, exacerbated by delayed payments from clients, particularly for government contracts. Securing affordable financing is another significant hurdle, compounded by high interest rates and stringent banking regulations (Oyewobi, Windapo & Cattell, 2014).

These firms also face intense competition, they are squeezed between larger, resource-rich companies that can outbid them on substantial projects and smaller businesses that can be more competitive due to lower overhead costs. Additionally, many medium-sized firms struggle to adopt advanced technologies for project management and construction processes, often due to limited funding and technical expertise, which impacts their efficiency and competitiveness (Smith, 2022; Johnson & Associates, 2023).

The regulatory environment further complicates matters by requiring significant administrative resources to comply with environmental laws, safety standards, and other regulations. This can be particularly burdensome for businesses without specialized compliance departments. The industry also suffers from a noticeable labor shortage, making it difficult for medium-sized companies to attract and retain skilled workers, leading to project delays and increased training and recruitment costs (Smith, 2022; Johnson & Associates, 2023).

Supply chain disruptions pose another significant risk, causing major project delays and cost overruns due to fluctuations in the availability and prices of raw materials and logistical challenges. Despite these difficulties, medium-sized construction companies play a vital role in South Africa's economy by creating jobs and contributing to GDP (Smith, 2022; Johnson & Associates, 2023).

Addressing these challenges can help these businesses thrive in a competitive market. Solutions include streamlined regulatory processes, enhanced technology adoption, improved financing options, and initiatives to address the skills gap (Windapo & Cattell, 2013; Oyewobi, Windapo & Cattell, 2014).

Hence, this study assesses the antecedents of CE within the medium-sized construction companies in the WC, SA.

2.7 Antecedents of Corporate entrepreneurship (CE) in the construction sector

Over the past few decades, substantial literature has emerged addressing the concept of CE within various industries, including logistics (Chienwattanasook et al., 2019), communication (Ebrahimi et al., 2020), wholesale and retail (Naldi et al., 2015), arts (Rusak, 2016), logistics (Chienwattanasook et al., 2019), ICT (Malarvizhi et al., 2019), manufacturing (Tantawy et al., 2020), finance (Ahmed et al., 2020), tourism (Kwinje et al., 2020), communication (Ebrahimi et al., 2020), and mining (Ebrahimi et al., 2020; Kumar & Pathak, 2021). However, the construction industry has notably lacked attention in this regard. Setiawan and Erdogan (2018), along with Setiawan et al. (2012), have emphasised the necessity for further research to address this gap.

This study responds to the request for more extensive research by providing insight into the current situation of the South African construction industry. According to recent research in this industry, there is a reluctance to accept innovative technologies and a lack of awareness about their benefits (van Wyk, Kajimo-Shakantu, & Opawole, 2021). These findings reveal a substantial weakness in optimising technical improvements within the industry, necessitating modifications to promote growth and adaptation. Failure to accept innovation, both within businesses and at the national level, threatens the industry's performance and viability, especially in the twenty-first century.

Given the broad scope of the construction industry, which includes architecture, civil engineering, facilities management (FM), construction management, project management, and quantity surveying, solving this innovation gap is critical to its overall success. This study seeks to fill this gap by investigating the internal dynamics of the South African construction industry, with a particular emphasis on innovation uptake among medium-sized construction enterprises in the Western Cape region. While prior studies have used various CE models, such as the Corporate Entrepreneurship Capability (CECM) model (Setiawan & Erdogan, 2018), this study uses the CEAI instrument as a measurement tool to evaluate CE in medium-sized construction enterprises.

2.8 Chapter summary

Existing literature demonstrates that organisations in various industries use entrepreneurial strategies to improve their operations. CE has evolved as an effective strategy for enterprises of all sizes, types, locations, and industries. The significance of CE stems from its link with invention. As previously stated, companies that promote innovation stand to gain a competitive advantage, especially when entering international markets. Individual people or groups can spark innovation, but CE emphasizes that management can also lead and implement change from the top down.

While obstacles are unavoidable in business, research indicates that innovative businesses do exceptionally well even in the face of adversity. As a result, creative firms constantly assess their internal environment to verify that current business systems, processes, and management styles not only facilitate innovation but also support CE and promote a company's overall antecedents.

CHAPTER 3: METHODOLOGY

This section focuses on the research design, methods, and procedures for data collection, measurement, and data analysis.

3.1 Research design

To give a direction to this study, the researcher adopted a research tool called the 'research onion' (Schwaferts, 2016). As stated by Jere (2018), when conducting research, the research onion helps the researcher to peel the research layer by layer before determining the data collection methods and data analysis. In this study, the research onion was employed, and it helped the researcher to think through the different layers of the researcher design covering all aspects of this research starting from the research philosophy through to the methodology and data analysis. This was advantageous to the research as it helped to ensure that the research design was rigorous, coherent, and aligned with the research goals.

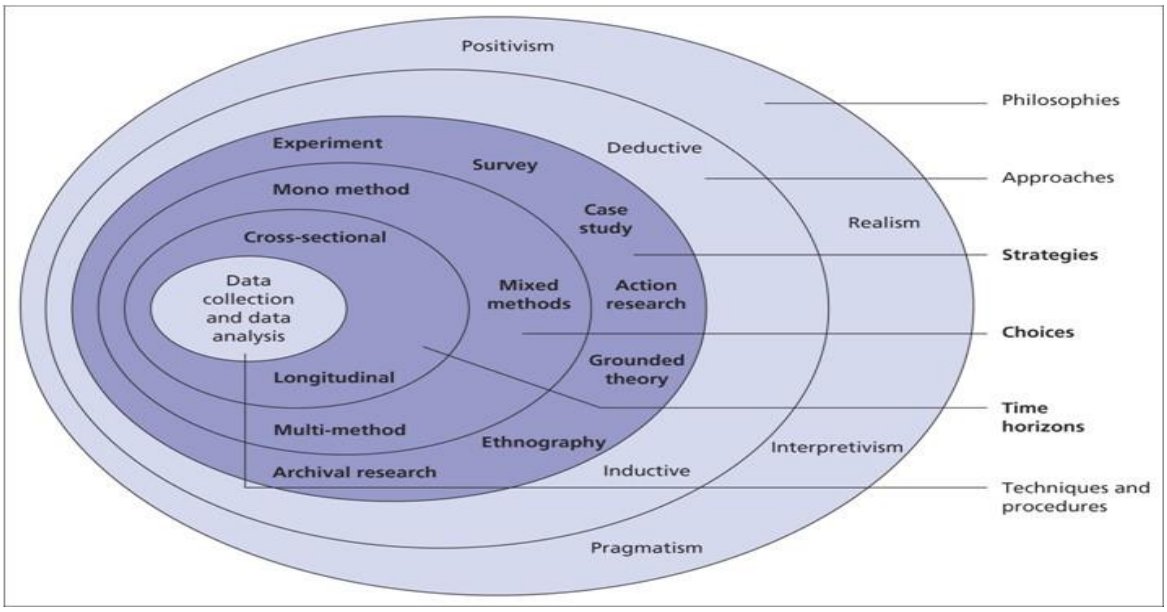


Figure 3.1: The research onion process

Source: Schwaferts (2016)

3.1.1. Research Philosophy (Outer Layer)

The research onion gives a structure for the methodology. In this study according to the research onion model by Saunders, we will discuss four research philosophies namely, realism, positivism, interpretivism and pragmatism (Schwaferts, 2016), thereafter, state the philosophy adopted for this study.

Realism: Realism is the belief that things exist whether or not we see or think about them. In science, realism suggests that theories describe real parts of the world. When we talk about "reality," we mean whatever in the universe—like forces or structures—causes the things we can see, touch, and feel (Hughes & Albers, 1988). Realism focuses on studying what we can actually observe and experience. Schwaferts (2016) explains that realism believes material objects exist in the world independently of our thoughts, and this external reality is what we should study. Realism is all about understanding what is real and out there in the world, not just ideas that stay in our minds.

Positivism: According to Bryman (2016), positivism is the idea that only things we can observe, and measure should be used to gain true knowledge. In this approach, the object being studied must be separate from the researcher, ensuring that the research remains objective. This means the researcher stays neutral and detached from the research to avoid influencing the results. Researchers using positivism often use a quantitative approach, where they start with a problem and look for a solution. A positivist researcher might develop hypotheses based on existing theories, which can then be tested and either confirmed or disproved. This process helps improve or develop new theories that can be tested further. However, researchers don't always need to start with an existing theory—they can create hypotheses based on the facts they gather.

Muller (2020) adds that positivism believes the future can be predicted and controlled. By understanding the regular patterns in past and present events, researchers can accurately predict future events using these established causal and functional relationships.

Interpretivism: Muller (2020) states that interpretivism assumes the unpredictable nature of the future. The future is seen/understood as a random, chaotic, and unpredictable chain of events, thus the control or prediction of the future as such is impossible, knowledge of the future can only be obtained through intuitive strategy. Interpretivism focuses on trying to gain insight into the experiences of individuals and groups. It is a paradigm that tries to understand the interpretation and meanings people give to actions. The drive of interpretive research is to create new, richer understandings and interpretations of social worlds and contexts. This means looking at organisations from the perspectives of different groups of people for business and management researchers. For example, how the CEO, board directors, managers, shop assistants, customers and cleaners see and experience a large retail company is different, so much so that they could arguably be seen as experiencing different workplace realities. If research focuses on the experiences that are common to all at all times, much of the richness of the differences between them and their circumstances will be lost, and the understanding of the organisation that the research carries will reflect this. Furthermore, differences that make organisations complex are not simply contained in different organisational roles. Interpretations of what on the surface seems to be the same thing (such as a luxury product) can differ between historical or geographical contexts.

Interpretivist researchers try to take account of this complexity by collecting what is meaningful to their research participants (Saunders et al., 2019).

Interpretivism beliefs are that there are no single realities but multiple realities. There is a belief in time and context, if the context change, the reality must be changed. There is a relationship between the research and the researcher meaning the researcher influence the research. The method for this philosophy is qualitative research, each reality is interpreted by the researcher. There is a belief that the findings can be transferred from one context to a similar context (Schwaferts, 2016)

Pragmatism: Pragmatism, as described by Saunders et al. (2019), emphasizes that concepts are useful only when they support action. Originating in the late 19th and early 20th centuries through philosophers like Charles Pierce, William James, and John Dewey, pragmatism seeks to combine objectivism and subjectivism, facts and values, and rigorous knowledge with practical experiences. It focuses on solving real-world problems by applying theories, concepts, and research findings in practical contexts. The research process is driven by the need to address specific problems and find practical solutions, with the research question often determining the methods used.

Marchiori (2018) notes that pragmatism employs various methods to achieve better outcomes, allowing researchers the flexibility to choose the most effective approach. Pragmatists acknowledge multiple ways to interpret the world, suggesting that no single perspective can capture the whole picture, and there may be multiple realities. However, they select methods that produce credible and relevant data for the research at hand.

Kaushik and Walsh (2019) explain that pragmatists believe people have unique worldviews based on their experiences, though shared experiences can lead to common beliefs. Goldkuhl (2012) adds that pragmatism is not only concerned with understanding the world as it is but also focuses on how knowledge can be used to improve the future. Pragmatism views knowledge as a tool for change and improvement, aiming to construct a better world.

The philosophy adopted for this study; Positivism complements a quantitative approach since it values objectivity, measurement, and the use of statistical methods to test theories. This philosophy assumes that reality is objective and measurable, which is appropriate for examining quantifiable predictors of corporate entrepreneurship in medium-sized construction firms. Positivism encourages you to remain objective and removed from the investigation, ensuring that your conclusions are founded on observable, measurable data.

3.1.2. Research Approach (Second Layer)

According to Sahay (2009), the choice layer of the research onion distinguishes three main approaches to theory development – deductive, inductive, and abductive.

Deductive approach: According to Woiceshyn and Daellenbach (2018), deductive reasoning involves moving from a general idea to a specific conclusion. It starts with a theory, from which hypotheses are formulated and tested. Observations are measured by examining the outcomes of these tests, and the theory is then revised based on the results. Muller (2020) describes deductive reasoning as the process of applying a general rule to reach a specific conclusion, often used for testing theories. This type of reasoning is logical, where the conclusion is true if all the premises are true. For example, if research involves online retail sales of a new mobile phone, and it's known that online retailers have limited stock, demand exceeds supply, and pre-orders are allowed, then it can be logically concluded that all the phones will be sold out by the release day (Saunders et al., 2019).

According to Feather (2012), the researcher acts like a detective, examining data facts and figures from a scientific perspective. The researcher may then develop new ideas or build on existing ones from their readings. Depending on whether the research is qualitative or quantitative, the researcher might choose to test a hypothesis, but this is not always necessary.

The inductive approach involves starting with observations or an idea and letting the theory emerge at the end of the research. In this approach, the researcher explores the data and develops theories from it, which are then related to existing literature. Although this method doesn't require a pre-existing conceptual framework or theory, the research still needs a clear purpose, including research questions, aims, and measurable objectives. The chosen subject area guides the research, and the researcher might need to read up on how to develop a research question based on that subject (Feather, 2012).

In inductive approach, there is a gap between the observed premises and the conclusion, meaning the conclusion is supported by observations but not guaranteed. For instance, if news reports indicate that online retailers have limited stock of a new mobile phone, that demand exceeds supply, and that pre-orders are available, one might conclude that the retailers will sell out by the release day. However, this conclusion, while supported by the observations, is not certain (Saunders et al., 2019).

The approach adopted for this study; Deductive approach is appropriate for a study that begins with a theoretical framework or current notions about corporate entrepreneurship. Hypotheses about the causes of corporate entrepreneurship can be generated and then tested with quantitative data. Deductive reasoning enables the researcher to evaluate certain aspects within a defined framework, allowing them to validate or disprove hypotheses based on facts acquired.

3.1.3 Research Strategies (Third Layer)

The third layer of Saunders et al.'s research onion (Schwaferts, 2016) focuses on research strategies, which include experiments, surveys, archival research, case studies, ethnography, action research, grounded theory, and narrative inquiry (Muller, 2020). Research strategy refers to the overall approach a researcher uses to select data collection methods to answer the research question and achieve research objectives. In futures studies, research strategies are often categorized as either quantitative or qualitative.

Experiment: This quantitative strategy involves manipulating an independent variable to observe its effect on a dependent variable. The researcher tests one effect at a time, often including a control group (Schwaferts, 2016; Vizcarguenaga-Aguirre & López-Robles, 2020).

Survey: Surveys, often resulting from a deductive approach, collect large amounts of data suitable for statistical analysis. Surveys can be quantitative, qualitative, or a mix of both (Schwaferts, 2016).

Case Study: This flexible research strategy allows an in-depth examination of real-life events and can involve single or multiple cases. Data is collected from various sources over time to provide a comprehensive understanding of the issue (Schell, 1992; Gounder, 2004).

Action Research: Designed to address specific problems in real-world settings, action research involves collaboration between the researcher and participants to develop solutions. However, it can be time-consuming and costly (Schwaferts, 2016; Hinkelmann & Witchel, 2012).

Grounded Theory: This method focuses on developing theory from data collected in the field, rather than from existing literature. It is often used in qualitative research, particularly in sociology (Marvasti, 2018; Schwaferts, 2016).

Ethnography: Ethnography involves studying a cultural group in its natural setting over time, using observational data to understand norms, beliefs, and social structures. The researcher becomes immersed in the participants' daily lives to interpret their culture (Marvasti, 2018).

Archival Research: This strategy involves using existing records and documents as the primary source of data. However, reliance on archival data can be problematic due to issues of accuracy and availability (Vizcarguenaga-Aguirre & López-Robles, 2020).

The adopted research strategy for this study; a survey enables the collection of enormous amounts of data from multiple participants from various firms. This technique is useful for assessing specific variables connected to the antecedents of corporate entrepreneurship and statistically analyzing the data to reach generalizable conclusions. Surveys can effectively collect data on characteristics such as

company procedures, employee attitudes, and entrepreneurial activity within these construction firms, offering insights that are relevant to the study's aims.

3.1.1.4 Research Choices (Fourth Layer)

Quantitative research focuses on factors like sample size, data collection, and analysis techniques. It's used to explore relationships between variables, such as how transformational leadership impacts work performance. This method is systematic, involving numerical data that is analyzed statistically for consistent and reliable results (Salim Musabah Bakhit Al Zefeiti & Noor Azmi Mohamad, 2015).

Qualitative research gathers textual data from surveys, interviews, and observations to understand experiences and perceptions. It's useful for exploring detailed views and attitudes related to research topics, providing depth to how transformational leadership affects organizational commitment and performance (Al Zefeiti & Mohamad, 2015).

Mixed-method research combines quantitative and qualitative approaches to collect and analyze data. It aims to provide a comprehensive understanding by integrating numerical and descriptive data, overcoming the limitations of each method individually (Al Zefeiti & Mohamad, 2015).

Mono research uses a single method, such as structured questionnaires, to gather data. This approach is focused on collecting straightforward numerical information (Schwaferts, 2016).

In this study, the quantitative approach was chosen for data gathering purposes. According to Goundar (2012), the quantitative method is a type by which a researcher tests the significance of the hypotheses. The method is mostly systematic and uses numbers. Lastly, it is a method that is suitable in particular when the relationship between variables is measured (Al Zefeiti & Mohamad, 2015)**.** In this study, the quantitative approach was chosen for data gathering purposes.

Quantitative method advantages*:* The main advantage of the quantitative method is that the quantitative results can be extrapolated to either an entire population or a subset due to their reliance on a larger randomly selected sample. Additionally, the utilisation of statistical software like IBM SPSS streamlines the data analysis process, making it less time-consuming compared to other methods (Rahman, 2016).

Quantitative method disadvantages: The major disadvantage of the quantitative research paradigm is that it often disregards the experiences and perspectives of respondents in highly controlled settings because there is no direct interaction between researchers and participants during data collection. However, the data collection method remains objective. For instance, if the study involved assessing 498 participants in a language ability test by distributing test-lets, there would be a lack of engagement with

participants' perceptions by researchers because there would have been no direct connection with the participants beyond handing out the test-lets (Rahman,2016).

3.1.4. Time Horizon (Fifth Layer)

Time horizons in futures studies primarily refer to the durations under consideration or the chronological scope, which can vary in length. There are three main temporal horizons: short-term (up to ten years), medium-term (up to twenty-five years), and long-term (more than twenty-five years) (Melnikovas, 2019).

Cross-sectional studies: can be undertaken in which data are gathered just once, perhaps over days or weeks or months, to answer a research question. Such studies are called one-shot or cross-sectional studies. Cross-sectional studies are fairly inexpensive and take little time to conduct. Cross-sectional studies can estimate the occurrence of the outcome of interest because the sample is normally taken from the whole population. Cross-sectional studies cannot be used to establish a causal relationship between exposure and outcomes. These studies can be used for public health planning, understanding disease and the generation of hypotheses. In cross-sectional studies, sample size requirements may be very large, especially when looking at rare outcomes or exposures (Hemed, 2015).

Longitudinal time horizon is a study over time, of a variable or group of subjects. The research aim is the dynamics of the problem. This is done by investigating the same situation or people over time or continuously, over the period in which the problem runs its course. Repeated observations are taken with the view to revealing the relative stability of the phenomena (Saunders, M., Lewis, P., Thornhill, 2009). A longitudinal time horizon research may take years to complete.

Time horizon for this study: Due to the limitations posed by time constraints and the nature of the research question, this study did not permit the researcher to observe developments over a period exceeding 12 years. Consequently, the study has adopted a cross-sectional time horizon instead of a longitudinal approach. Cross-sectional studies involve data collection at a specific point in time, spanning different durations like days, weeks, or months, to address research inquiries or hypotheses (Setia, 2016).

3. 2 Data collection procedure

3.2.1 Questionnaire development

The researcher formulated questions intended to address the research aim, objectives, and hypothesis. Some of the questions were adapted from the Corporate Entrepreneurship Assessment Instrument (CEAI) which has been used as a tool to diagnose the five CE antecedents and found to be successful (Hornsby et al.,2002). The questionnaire started by introducing the research topic and providing a brief explanation of the research tool, which included a 5-point Likert scale. Before respondents could begin

selecting their choices from the given options, they were required to choose their age group from three options: 20 – 30 years, 31 – 40 years, or 41 and above.

The modification entailed changing key components to better suit the study's specific setting and objectives. For example, the phrasing of several questions was changed to better reflect the particular characteristics of the study's population or to clarify their relevance to the current research emphasis. Furthermore, new items were developed to address aspects not addressed by the CEAI, ensuring a thorough assessment of the study's variables.

The researcher utilised tables to categorise the questionnaires on CE antecedents. Table 1 was dedicated to factor 1, which is management support. Table 2 was assigned to factor 2, work discretion. Table 3 represents factor 3, rewards/reinforcement. Table 4 was designated for factor 4, time availability. Lastly, Table 5 was used for factor 5, organisational boundaries. Each table included column headings such as "no." (number), "description (statement)", and response options ranging from "1 – strongly disagree" to "5 – strongly agree".

Table 3.1: Management Support (MS)

No	Statement	1.Strongly disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly agree
36	During the past three months, my workload kept me from spending time on developing new ideas.					
37	I always seem to have plenty of time to get everything done.					
38	I have just the right amount of time and workload to do everything well.					
39	My job is structured so that I have very little time to think about wider organizational problems.					
40	I feel that I am always working with time constraints on my job.					
41	My co-workers and I always find time for long-term problem solving.					

The respondents were to specify their level of agreement or disagreement on a symmetric agree-disagree scale for a series of statements while responding to a Likert questionnaire item. Considering the constraints of COVID-19, the questionnaire was further developed using Google Forms as an alternative method to create and distribute questionnaires to the participants.

3.2.2 Questionnaire distribution

Initially, the researcher aimed to distribute the questionnaire by sending emails to the participants and arranging a time to visit the companies to physically distribute questionnaires to gather responses. However, this plan became unfeasible due to the COVID-19 pandemic restrictions and regulations. The researcher adjusted the approach and relied solely on emails to distribute the questionnaires. The snowball method was also employed. The request was made to the identified participants to help distribute the questionnaire to the targeted sample of respondents at the managerial level (middle managers).

However, the snowball methods caused a delay, resulting in the researcher proactively searching for middle management employees on LinkedIn. Only individuals in middle management position from selected medium-sized construction companies in the WC were targeted. This decision was made to address the delay in participant responses and maintain a professional approach without causing any inconvenience to the participating companies.

Consequently, an alternative method of questionnaire distribution was implemented using the Google Forms link. This link was directly shared with the sample group via LinkedIn, and in some cases, respondents requested the link to be sent to their WhatsApp platform. The communications sent to the respondents clearly stated that participants' participation was voluntary and that every response should be kept anonymous and private from all other respondents.

3.2.3 Number of questionnaires distributed and returned

A total of 165 questionnaires were distributed through all the platforms utilised for questionnaire distribution. This cumulative count includes responses obtained from all the platforms employed. From a pool of 165 questionnaires that were distributed, 110 responses were received, which accounts for a response rate of 67%. Within these 110 responses, it was observed that approximately 3% of the questionnaires were incomplete, with some questions left unanswered or hastily completed without careful consideration. Additionally, around 5% of the respondents did not provide any response to the questionnaire. Therefore, out of the 165 questionnaires that were distributed to the respondents through emails and LinkedIn, a total of 100 questionnaires were deemed accurate and suitable for the research study. This yielded a response rate of 61%.

3.3 Ethical clearance procedure

Ethics are used in research to guide researchers. Ethics are moral principles that govern a person's actions. Research ethics are about respect, honesty, fairness, and care for the participants and the research study itself. Research ethics are or become the identity of the researcher and/or research. The research process is defined by its ethics during data collection, and the things to be included or allowed or not allowed are defined by research ethics, for example, being mindful of people's time, and privacy. Ethics are central in the research process and research data collection cannot occur without research ethics approval (Parveen & Showkat, 2017).

To obtain ethical clearance from the institution, the Cape Peninsula University of Technology (Faculty of Engineering and the Built Environment, Department of Construction and Quantity Surveying), the researcher was required to obtain consent letters from the participating companies. After the identification and selection of the companies, a consent letter was obtained, and the ethical clearance certificate was issued by the department for the research to commence.

This research study was approved by the Cape Peninsula University of Technology. The permission to obtain suitable participants was approved by the Higher Degree Committee (HDC). The Engineering and Built Environment Ethics Committee of the Cape Peninsula University of Technology granted ethics approval for research activities related to the research proposal. The research questionnaires were developed, and some were adopted from CEAI and distributed to the research supervisor and co-supervisor for approval. Approval was received, stating that all data gathered from the participating companies was to be for academic purposes and was strictly kept anonymous and confidential.

No harm occurred during the research and the anonymity and confidentiality of the participants were protected during research data collection and throughout the research writing. The participants were informed clearly about the research purpose and participation was voluntary. The researcher treated all participants with respect, confidentially, and professionally.

3.4 Recruitment of participants

3.4.1 Sampling

A population refers to an entire group of individuals who share one or more characteristics and are of interest to the researcher (Shukla, 2020). In research, the population is the specific group that the researcher focuses on to draw conclusions (Enarso, Kennedy, & Miller, 2004).

For this study, a purposive sampling method was used. Purposive sampling involves deliberately selecting participants from a particular population based on their relevance to the research objectives (Sekaran, 2006). This method, also known as judgmental sampling, ensures that the sample consists of individuals who can provide valuable insights into the research questions (Taherdoost, 2018a).

3.4.1.1 Targeted population and selection criteria

To gather data on the research population, the researcher visited the Construction Industry Development Board (CIDB) office in Cape Town. The CIDB office maintains a comprehensive system that includes registered, active, and non-active construction companies in the WC. The researcher obtained appropriate procedures and criteria for population selection through the guidance provided at the CIDB office in Cape Town. The targeted population consisted of medium-sized construction companies that were both registered and active within the construction industry in the WC. The selection of these medium-sized construction companies was based on the database maintained by the CIDB.

3.4.1.2 Participant recruitment criteria

Two criteria were set to identify and select medium-sized construction companies operating in the WC as participating companies for this research:

- Their capacity to undertake a minimum of four projects annually and with an employment capacity between 50 and 200 individuals (Mafundu & Mafini, 2019; Business Wire, 2021; BOPCONS, 2020).
- Annual turnover above R60 million to R200 million.

Within the selected companies, the researcher chose grade 8 and 9 middle managers for the data collection as they are within the category to provide adequate responses to address the research objectives. The focus was more on two classifications within these categories: general building (GB) and civil engineering (CE). The selection comprised managerial level employees (middle managers) which consisted of quantity surveyors, project managers, construction managers, architects, engineers, site managers, foremen, human resource managers, and health and safety managers. Specialised services such as plumbing and drainage, electrical works, air conditioning, roof covering, and joinery were excluded from the selected classifications.

The combined total population consisted of 37 companies from both the general building work and civil engineering classifications. The researcher reached out to the entire population list, requesting their participation in the data collection process, however, out of 37 companies only 20 companies responded to the request, which equals 54% of the population.

3.5 Data analysis procedure

There are many ways in which data can be analysed, which depends on the manner in which data was collected and recorded. Quantitative data analysis is a systematic process of both collecting and evaluating measurable and confirmable data. Quantitative analysis uses systematic mathematics analysis (Ali, 2021). Quantitative data is analysed statistically. In this research study, the data was recorded using a quantitative approach.

3.5.1 Data capturing and sorting

The data received through emails was printed and combined with the data collected through Google Forms. The data from the Google forms was automatically captured whenever respondents completed the questionnaire via the provided link. Once all the data was captured via Google Forms, the researcher excluded incomplete questionnaires and those indicating a lack of respondents' attention, as mentioned in section 3.2.3 above, which accounted for 3% of the total.

After completing the data sorting process, the researcher proceeded to export the data from Google Forms and downloaded it into a Microsoft Office Excel spreadsheet. Subsequently, the researcher undertook the task of coding the data to prepare it for analysis using IBM SPSS. IBM SPSS is widely recognised software for statistical analysis in research studies (Gogoi, 2020). Coding involves assigning labels to the recorded data to make it more easily understandable (, 2015). For instance, the value 1 for

"Strongly Disagree", 2 for "Disagree", 3 for "Neutral", 4 for "Agree", and 5 for "Strongly Agreed The age group was also coded, with the value 1 for "20 – 30 years", Value 2 for "31 – 40 years", and Value 3 for "41+ years".

The next step was to measure the variables: the Likert scale variables were categorised at the ordinal level of measurement, while the age group variable was measured as nominal (South et al., 2022).

3.5.2 Data Analysis

3.5.2.1 Descriptive Statistics

Descriptive statistics are vital for summarizing and presenting data in an intelligible manner. They produce descriptive coefficients that can reflect the full population or a subset of it. These statistics condense big datasets by highlighting their key aspects. According to Mann (2020), descriptive statistics are critical for making complex data accessible and understandable. The three primary ideas used to define data properties are frequency distribution, central tendency, and variability (e.g. standard deviation). These metrics aid in the effective organization and interpretation of data, making them useful instruments for research and data analysis (Weiss & Weiss, 2021).

Frequency distribution is an important tool for data management, especially after data has been imported, coded, measured, and labelled in SPSS. It allows researchers to visualize the distribution of observations, evaluating whether they are concentrated in one location or spread out throughout the full scale (Sharma, 2020). In this study, frequency distribution analysis in SPSS was used to assess participant profiles. This investigation presented a summary of participant characteristics, assisting in determining the managerial levels found in medium-sized construction enterprises in the Western Cape. According to Bhardwaj (2019), understanding participant profiles is important for data analysis because it provides context and insights that enable researchers to appropriately assess findings and form legitimate conclusions.

The central tendency is a measure of a single value that attempts to describe a set of data by identifying the central position within that set of data (Manikandan, 2011). This study used the mean for the central tendency.

Variability, according to Christopher (2020), is a statistical metric that provides an overview of the extent to which data points in a dataset are spread out or dispersed. While a measure of central tendency characterises the typical value, measures of variability quantify the extent to which data points deviate from the central value. Variability pertains to the distribution of values, where low dispersion implies close clustering of data points around the centre, while high dispersion indicates a greater tendency for data

points to be located further away from the centre. There are measures of variability, range, variance, and standard deviation.

The dispersion (standard deviation) is a measure that shows how much data is scattered around the mean (Lee, In & Lee, 2015).

For this study, the central tendency (mean) and standard deviation were used to complete the descriptive statistics.

3.5.2.2 Validity and reliability testing

Reliability and validity are unique elements of a good measurement instrument (Bagozzi, Yi & Phillips, 2017).

Reliability refers to the consistency of a test in repeatedly measuring the same item and producing consistent outcomes. In essence, reliability instils confidence in the accuracy and usefulness of knowledge. The more a particular test is conducted multiple times, yielding consistent results under similar conditions, the greater our assurance becomes that similar outcomes will recur in future instances (Taherdoost, 2016).

Cronbach's Alpha is used to test reliability variations from 0 to 1. The closer the Cronbach's Alpha value to 1, the greater the internal consistency of the item within the scale. A Cronbach's Alpha value above 0.90 indicates excellent internal consistency, above 0.80 is good, above 0.70 is acceptable, above 0.60 is questionable, above 0.50 is poor, and below 0.50 is unacceptable(Saidi & Siew, 2019; Jain & Angural, 2017).

In this research, the internal consistency of the data was assessed through reliability testing using IBM SPSS. The primary objective of conducting this reliability testing was to ascertain the soundness and replicability of the data, ensuring the accuracy of the results for further discussion. A minimum acceptable alpha value of 0.70 was utilised as the criterion for establishing reliability (Cho & Kim, 2015).

A valid measurement is considered reliable if a test produces accurate results, they should be reproducible (Roberts & Priest, 2006). The CEAI questionnaire has been proven to be the best instrument and to produce accurate and valid results (Kuratko et al., 2014).

3.5.2.3 Correlation analysis

The Merriam-Webster dictionary defines correlation as a relation existing between phenomena or things or between mathematical or statistical variables that tend to vary, be associated, or occur together in a way not expected by chance alone (Akoglu, 2018).

Correlation analysis was carried out to find out the nature of the relationships between grouped variables (CE antecedents) within the medium-sized construction companies in the WC. Spearman's correlation was conducted to test the relationships between two variables. The Spearman correlation is the best for ordinal data and is used to verify the correlations in variables, and if the relationship increases or decreases (Sloan, 2023).

In the Spearman correlation, positive values denote positive linear correlation, negative values denote negative linear correlation, a value of 0 denotes no linear correlation, and the closer the value is to 1 or –1, the stronger the correlation (Akoglu, 2018; Mukaka, 2012).

Caldwell's (2007) convention to interpret the coefficient scores is detailed below:

0,10 – 0,29 = weak correlation

0,30 – 0,49 = moderate correlation

0,50 or larger = strong correlation (Caldwell, 2007:289).

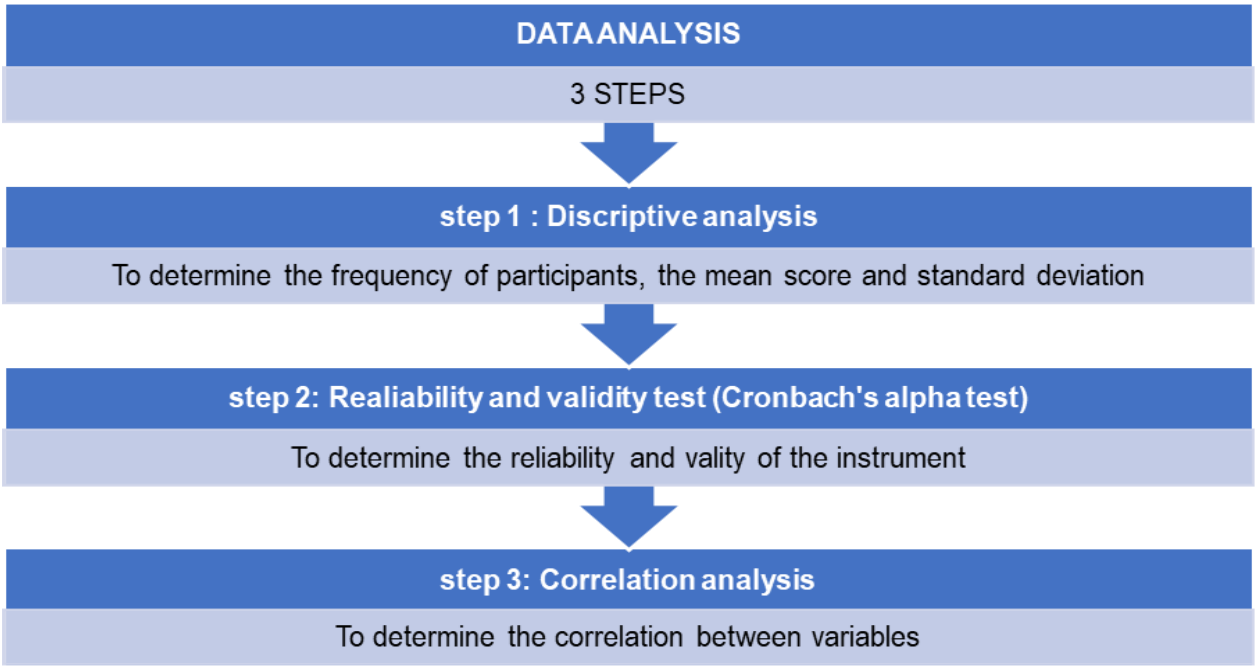


Figure 3.2: Three-step data analysis framework for this study

3.6 Chapter Summary

This chapter outlined the research methodology of this study. A quantitative research method was adopted to achieve the aim and objectives. A case study approach was adopted and closed-ended questionnaires were administered to participants within medium-sized construction companies in the WC.

The data gathered was analysed using descriptive statistics. The reliability of scaled questionnaires was tested with Cronbach's alpha test.

CHAPTER 4: PRESENTATION AND INTERPRETATION OF RESULTS

4.1 Introduction

In the previous chapter, we described the research technique used in this study, which took a quantitative approach to addressing the study's goals and objectives. A case study approach was taken, with closed-ended questionnaires provided to participants from medium-sized construction enterprises in the WC region. The data gathered from these surveys were examined using descriptive statistics, and the scaled items' reliability was assessed using Cronbach's alpha test. This chapter builds on that basis by presenting and evaluating the findings from the studied data.

4.2 Importance of profile of participants

A total of 20 medium-sized construction companies in the WC were sampled and a set of 165 questionnaires were distributed to potential respondents through email and surveys. Of these 165 questionnaires, 100 were successfully completed and returned by the respondents, representing a response rate of 61%. It was found that the largest proportion of respondents fell within the age range of 31 to 40 years, accounting for 47% of the total. This was followed by respondents aged 20 to 30 years, comprising 35% of the sample, while the remaining 18% belonged to the age group of 41 years and above. Figure 4.1 summarises their age distribution.

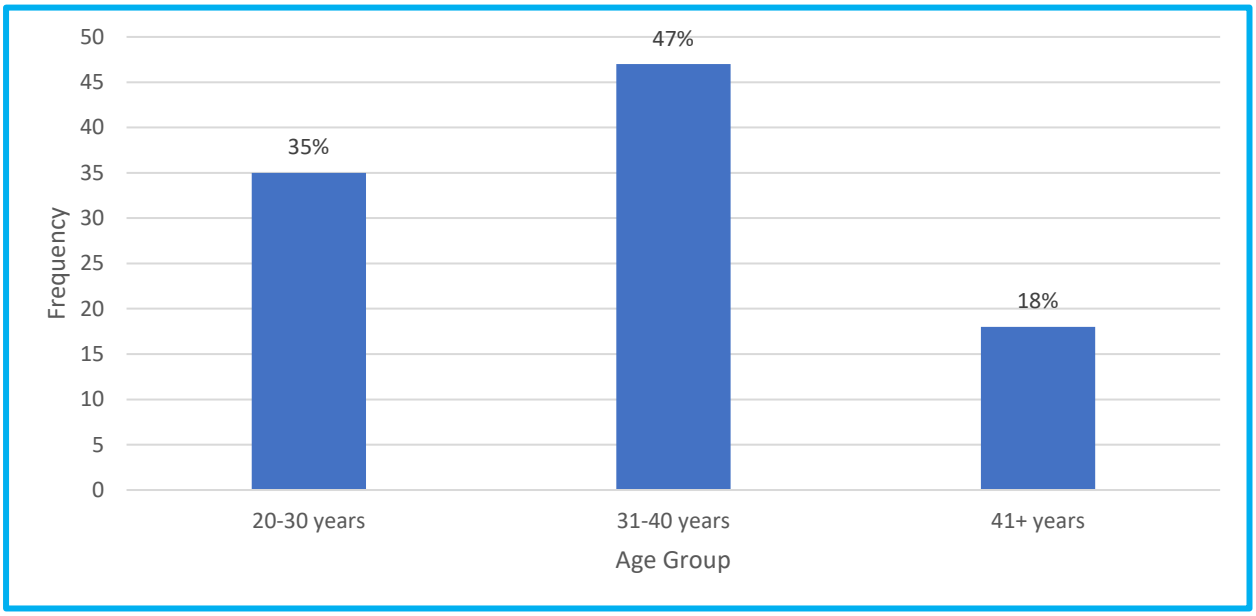


Figure 4.1: Age group distribution of respondents

Among the respondents who completed the questionnaire and were included in the analysis were middle managers. The roles the respondents held in their organisations are displayed in figure 4:2 below. These

were quantity surveyors, project managers, construction managers, architects, engineers, site managers/agents, foremen, human resource managers and health and safety officers.

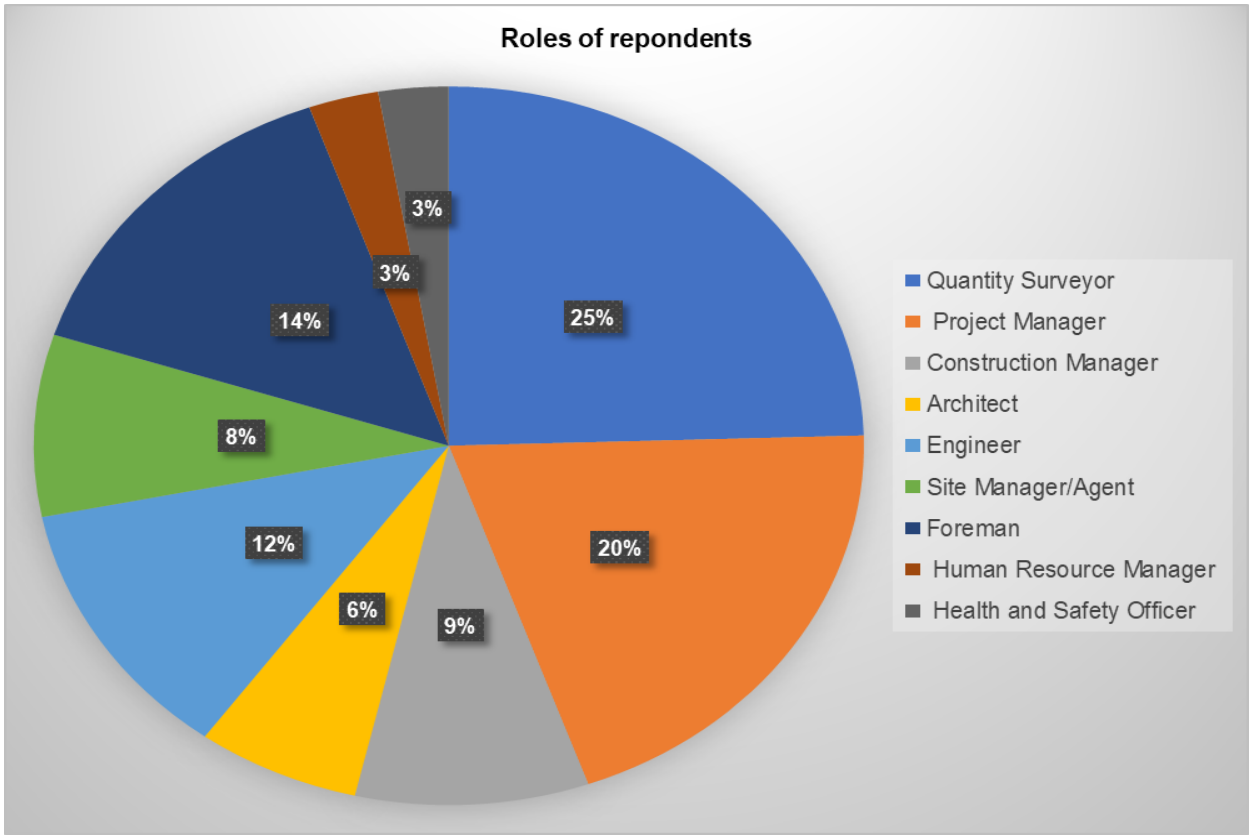


Figure 4.2: Roles of respondents

4.2.1 Respondents educational level and experiences in the construction industry

In medium-sized construction enterprises in the Western Cape of South Africa, the positions and educational backgrounds of individual specialists can have a considerable impact on their contributions to projects. Here's an overview of the typical educational levels, industry experience, and present positions for different roles inside these organizations:

For example: Years of experience for respondents

Quantity Surveyor : Educational Level: Typically possesses a degree in Quantity Surveying, Construction Management, or related fields. Professional accreditation or membership in an accredited body, such as the South African Council for the Quantity Surveying Profession (SACQSP), is frequently required.

Experience: Typically has 3-10 years of experience in the construction sector, beginning as a junior quantity surveyor or estimator and progressing to more senior positions.

Current Position: Quantity Surveyors at medium-sized businesses are in charge of cost estimation,

budgeting, and financial management for construction projects. They may hold titles like Senior Quantity Surveyor or Chief Quantity Surveyor.

Construction Manager: Educational Level: Typically holds a degree in construction management, civil engineering, or a similar field. Certification in construction management is also prevalent.
Experience: Typically has 5-15 years of experience, frequently progressing from site-based positions. Experience involves directing construction crews and coordinating on-site activities.
Current Position: Construction Managers oversee day-to-day operations on construction sites, ensuring that construction activities are consistent with project plans and regulatory requirements.

With differing educational backgrounds and experience levels that represent the variety of skills required within the industry, each of these professions is essential to the successful completion of construction projects.

4.2.2 Position of respondents in the construction industry

The respondents' positions are critical in determining the relevance and accuracy of their responses. Each job provides a distinct perspective depending on their responsibilities and involvement in the construction process. Understanding the significance of each location allows for more effective data interpretation.

Foor instance, Quantity Surveyors (QS) are responsible for monitoring project expenses and financial planning. Their reactions are critical when it comes to budget management, cost estimation, and financial controls. Their insights assist in determining cost-related difficulties, procurement methods, and the financial impact of project adjustments. For questions about financial monitoring, procurement methods, and cost management, the QS's involvement is critical for accurate and reliable data.

In summary, the respondents' positions within medium-sized construction enterprises in the Western Cape have a considerable impact on the relevance and correctness of their responses. Each function contributes a distinct viewpoint depending on their responsibilities, making their contributions crucial to understanding various parts of the construction process. By considering the respondents' perspectives, one can better interpret the data and acquire a more complete knowledge of the issues at hand.

4.2.3 Rate of respondents

The response rate varied according to the number of the middle managers and number interested in the study.

A total of 165 questionnaires were disseminated across various platforms for questionnaire distribution. This aggregate encompasses responses obtained from all utilised platforms. Out of the 165 questionnaires distributed, 110 responses were received, constituting a response rate of 67%. Among these 110 responses, it was noted that approximately 3% of the questionnaires were incomplete, with

some questions left unanswered or hastily completed without careful consideration. Additionally, about 5% of the respondents did not furnish any response to the questionnaire. Consequently, out of the 165 questionnaires distributed via email and LinkedIn, a total of 100 questionnaires were deemed accurate and suitable for the research study. This outcome resulted in a response rate of 61%.

Table 4.1: Rate of respondents

Description	Count	Percentage
Total Questionnaires Distributed	165	-
Responses Received	110	67%
Incomplete Questionnaires	5	3%
Non-responses	5	5%
Accurate and Suitable Questionnaires	100	61%

4.2.4 Approach

For convenience, online and printed version of the questionnaire was distributed to the participants according to their request. 100 respondents completed and returned the questionnaire within the period of nine months between October 2021 and July 2022. All sections of the questionnaire comprising 48 questions were completed by these participants. The questions that covering CE were categorised as ordinal data. The CE scale required responses ranging from "strongly disagree" to "strongly agree", with values between 1 and 5. The coding of each question on this scale is in alignment with existing research work. Table 4.2 shows the Likert scale response used in this research study.

Table 4.2: Corporate Entrepreneurship - Likert Scale

1	Strongly Disagree	SD
2	Disagree	DA
3	Not Sure	NS
4	Agree	A
5	Strongly Agree	SA

Statistical analysis of the collected data was conducted using IBM SPSS version 28. Factor analysis was employed to identify groups of related factors quantitatively or categorically. The components found were strengthened using the Cronbach's alpha (α) coefficient. Through this method, additional dimensions were

developed that characterised CE constructs while several questions were omitted. Finally, nonparametric correlation analysis for each dimension of the new CE were carried out.

4.3 Descriptive statistics of original data obtained using CEAI

The Likert scale was employed in this study and the respondents were asked to rate the level of agreement of each question or statements in the questionnaire based on "strongly disagree" = 1, "disagree" = 2, "neutral" = 3, "agree" = 4 and "strongly agree" = 5. Presented in the following sections, descriptive statistics showing the responses of the 100 respondents who completed their questionnaire and were analysed. The analysed questionnaires exclude those that were not completed and hence could distort the result of the study.

4.3.1 Awareness of management support (MS)

To access the level of management support, an instrument consisting of a total of 19 items was used to elicit information from respondents within medium-sized construction companies in the WC. The result from the study is presented in Table 4.3.

The mean of each of the 19 items on the management support instrument ranged from 2.75 – 3.64, suggesting that the respondents in the medium-sized construction companies in WC have a moderate tendency to experience management support. Similarly, the standard deviation of these items fell to 0.90 – 1.06, an indication that there is low variability i.e., little variance which translates to weak covariance. This suggests a correlation in the responses of the respondents as regards management support (Table 4.4).

Specifically, the item statement "*In my organisation, developing one's own ideas is encouraged for improvement of the corporation"* has the highest mean response with low variability, suggesting that management encourage staff to generate ideas that can improve the organisation (Table 4.3).

However, the item statement "*Senior managers encourage innovators to bend rules and rigid procedures to keep promising ideas on track"* has the lowest mean response and a moderate variability, suggesting that there is no correlation in the responses of the respondents, i.e., senior managers do not support bending rigid procedures and rules to keep promising innovative ideas in their organisations (Table 4.3).

More than half (57%) of the respondents agreed that their organisation was quick to improve work methods. A total of 52% of respondents also agreed that their organisation was quick to use the methods developed by their workers. Also, 59% of respondents agreed that their organisation encouraged the development of one's own ideas for organisational improvement. Similarly, a total of 55% of respondents agreed that upper management was aware and receptive to workers' ideas and suggestions. Only 28% of respondents agreed that promotion usually followed the development of new and innovative ideas.

More than half (58%) of respondents agreed that employees who come up with initiatives on their own often receive management encouragement for their activities (Table 4.3).

A total of 32% of respondents agreed that "doers on projects "are allowed to make decisions without going through elaborate justification and approval procedures. Few (23%) of respondents agreed that senior managers encourage innovators to bend rules and rigid procedures to keep promising ideas on track. About half (49%) of respondents agreed that many top managers have been known for their experience with the innovation process. Only 33% of respondents agreed that money is often available to get new project ideas off the ground. On innovative projects, 30% of respondents agreed that individuals with successful innovative projects receive additional rewards and compensation beyond the standard reward system for their ideas and efforts. About a quarter (25%) of respondents agreed that there are several options within the organisation for the individuals to get financial support for their innovative projects and ideas (Table 4.3).

More than half (53%) of the respondents agreed that people are often encouraged to take calculated risks with ideas around their organisation. A little above 50% of respondents agreed that individual risk-takers are often recognised for their willingness to champion new projects, whether eventually successful or not. Less than half (39%) of respondents agreed that the term "risk-taker" is considered a positive attribute for people in their work area. Similarly, 32% of the respondents agreed that their organisation supports many small and experimental projects, realising that some will undoubtedly fail. Further, 32% of the respondents agreed that an employee with a good idea is often given free time to develop that idea and that there is a considerable desire among people in the organisation for generating new ideas without regard for crossing departmental or functional boundaries respectively. A little above half (51%) of respondents agreed that people are encouraged to talk to employees in other departments of their organisation about ideas for new projects (Table 4.3).

Table 4.3: Management support (MS) participant scoring

	Antecedents of CE No. 1 _ Management Support	**No.**	**SD**	**D**	**N**	**A**	**SA**
MS_1	My organisation is quick to use improved work methods.	100	2%	7%	34%	42%	15%
MS_2	My organisation is quick to use improved work methods that are developed by workers.	100	3%	15%	30%	40%	12%
MS_3	In my organisation, developing one's own ideas is encouraged for the improvement of the corporation.	100	3%	9%	29%	39%	20%
MS_4	Upper management is aware and very receptive to my ideas and suggestions.	100	2%	9%	34%	38%	17%
MS_5	A promotion usually follows from the development of new and innovative ideas.	100	6%	31%	35%	26%	2%

MS_6	Those employees who come up with innovative ideas on their own often receive management encouragement for their activities.	100	2%	12%	28%	48%	10%
MS_7	The "doers on projects "are allowed to make decisions without going through elaborate justification and approval procedures.	100	5%	32%	31%	24%	8%
MS_8	Senior managers encourage innovators to bend rules and rigid procedures to keep promising ideas on track.	100	10%	33%	34%	18%	5%
MS_9	Many top managers have been known for their experience with the innovation process.	100	1%	11%	39%	39%	10%
MS_10	Money is often available to get new project ideas off the ground.	100	10%	22%	35%	29%	4%
MS_11	Individuals with successful innovative projects receive additional rewards and compensation beyond the standard reward system for their ideas and efforts.	100	9%	24%	37%	23%	7%
MS_12	There are several options within the organisation for the individuals to get financial support for their innovative projects and ideas.	100	7%	25%	43%	23%	2%
MS_13	People are often encouraged to take calculated risks with ideas around here.	100	3%	13%	31%	44%	9%
MS_14	Individual risk-takers are often recognized for their willingness to champion new projects, whether eventually successful or not.	100	3%	19%	26%	41%	11%
MS_15	The term "risk-taker" is considered a positive attribute for people in my work area.	100	4%	18%	39%	33%	6%
MS_16	This organisation supports many small and experimental projects, realizing that some will undoubtedly fail.	100	6%	27%	35%	26%	6%
MS_17	An employee with a good idea is often given free time to develop that idea.	100	9%	31%	28%	25%	7%
MS_18	There is considerable desire among people in the organisation to generate new ideas without regard for crossing departmental or functional boundaries.	100	8%	20%	40%	27%	5%
MS_19	People are encouraged to talk to employees in other departments of this organisation about ideas for new projects.	100	2%	16%	31%	42%	9%

*SD-Strongly Disagree; D – Disagree; N – Neutral; A – Agree; SA – Strongly Agree; Std – Standard Deviation

Below, Table 4.4 presents the mean and standard deviations of management support among top management. The mean (M) holds particular significance for the five-point Likert scale, also referred to as the interval scale (Pimentel, 2010). On this scale, the mean (M) ranges provide specific interpretations:

from 1 to 1.80 indicates "do not agree at all"; from 1.81 to 2.60 signifies "disagree"; from 2.61 to 3.40 denotes "neutral"; from 3.41 to 4.20 suggests "agree"; and from 4.21 to 5 indicates "strongly agree".

Table 4.4: Management Support (MS) Question Scoring

	Antecedents of CE No. 1 _ Management Support	No.	Mean	Standard deviation
MS_3	In my organisation, developing one's own ideas is encouraged for the improvement of the corporation.	100	3.64	1
MS_1	My organisation is quick to use improved work methods.	100	3.61	0.9
MS_4	Upper management is aware and very receptive to my ideas and suggestions.	100	3.59	0.94
MS_6	Those employees who come up with innovative ideas on their own often receive management encouragement for their activities.	100	3.52	0.9
MS_9	Many top managers have been known for their experience with the innovation process.	100	3.46	0.86
MS_2	My organisation is quick to use improved work methods that are developed by workers.	100	3.43	0.99
MS_13	People are often encouraged to take calculated risks with ideas around here.	100	3.43	0.94
MS_19	People are encouraged to talk to employees in other departments of this organisation about ideas for new projects.	100	3.4	0.93
MS_14	Individual risk-takers are often recognized for their willingness to champion new projects, whether eventually successful or not.	100	3.38	1.01
MS_15	The term "risk-taker" is considered a positive attribute for people in my work area.	100	3.19	0.94
MS_18	There is considerable desire among people in the organisation to generate new ideas without regard for crossing departmental or functional boundaries.	100	3.01	1
MS_16	This organisation supports many small and experimental projects, realizing that some will undoubtedly fail.	100	2.99	1.01
MS_7	The "doers on projects "are allowed to make decisions without going through elaborate justification and approval procedures.	100	2.98	1.04
MS_10	Money is often available to get new project ideas off the ground.	100	2.95	1.04
MS_11	Individuals with successful innovative projects receive additional rewards and compensation beyond the standard reward system for their ideas and efforts.	100	2.95	1.06
MS_17	An employee with a good idea is often given free time to develop that idea.	100	2.9	1.1
MS_12	There are several options within the organisation for the individuals to get financial support for their innovative projects and ideas.	100	2.88	0.91
MS_5	A promotion usually follows from the development of new and innovative ideas.	100	2.87	0.94
MS_8	Senior managers encourage innovators to bend rules and rigid procedures to keep promising ideas on track.	100	2.75	1.03

According to Table 4.4, *"In my organisation, developing one's own ideas is encouraged for the improvement of the corporation"* has the highest mean score (M = 3.64, Std = 1), indicating that

respondents generally agree that creating one's own ideas is encouraged for the benefit of the organisation. "*My organisation is quick to use improved work methods"* follows closely with a mean score of M = 3.61, Std = 0.9, showing that respondents generally agree that their organisation is quick to adapt improved work techniques. *"Upper management is aware and very receptive to my ideas and suggestions"* has a mean score of M = 3.59, Std = 0.94, also falling within the range of "agree," indicating that respondents generally think that higher management is open to their thoughts and suggestions.

"Those employees who come up with innovative ideas on their own often receive management encouragement for their activities" has a mean score of M = 3.52, Std = 0.9, indicating that respondents generally agree that employees who propose creative ideas are encouraged by management. *"Many top managers have been known for their experience with the innovation process"* has a mean score of M = 3.46, Std = 0.86, suggesting that respondents generally agree that many top managers have experience with the innovation process. *"My organisation is quick to use improved work methods that are developed by workers*" has a mean score of M = 3.43, Std = 0.99, implying that respondents generally agree that their organisation quickly incorporates worker-developed work techniques. Similarly, "*People are often encouraged to take calculated risks with ideas around here"* has a mean score of M = 3.43, Std = 0.94, indicating that respondents generally agree that people are encouraged to take measured risks with ideas.

"People are encouraged to talk to employees in other departments of this organisation about ideas for new projects" has a mean score of M = 3.4, Std = 0.93, indicating that respondents generally agree that people are encouraged to communicate ideas with colleagues in different departments. *"Individual risk-takers are often recognized for their willingness to champion new projects, whether eventually successful or not"* has a mean score of M = 3.38, Std = 1.01, indicating that respondents generally agree that individual risk-takers are recognized for their efforts. *"The term 'risk-taker' is considered a positive attribute for people in my work area"* has a mean score of M = 3.19, Std = 0.94, indicating that respondents generally agree that taking risks is a good thing.

"There is considerable desire among people in the organisation to generate new ideas without regard for crossing departmental or functional boundaries" has a mean score of M = 3.01, Std = 1, suggesting that respondents largely agree that there is a strong desire to produce new ideas. *"This organisation supports many small and experimental projects, realizing that some will undoubtedly fail"* has a mean score of M = 2.99, Std = 1.01, reflecting a neutral opinion on whether the organisation promotes small and experimental projects. *"The 'doers on projects' are allowed to make decisions without going through elaborate justification and approval procedures"* has a mean score of M = 2.98, Std = 1.04, reflecting a neutral opinion on whether project doers can make decisions without complex procedures.

"Money is often available to get new project ideas off the ground" and "Individuals with successful innovative projects receive additional rewards and compensation beyond the standard reward system for their ideas and efforts" both have a mean score of M = 2.95, with Std = 1.04 and Std = 1.06 respectively, reflecting a neutral position on whether money is frequently available for new project ideas and whether persons with successful inventive ventures earn greater rewards. *"An employee with a good idea is often given free time to develop that idea"* has a mean score of M = 2.9, Std = 1.1, reflecting a neutral opinion on whether employees with good ideas are allowed free time. *"There are several options within the organization for individuals to get financial support for their innovative projects and ideas"* has a mean score of M = 2.88, Std = 0.91, reflecting a neutral view on whether there are multiple possibilities for financial assistance.

"A promotion usually follows from the development of new and innovative ideas" has a mean score of M = 2.87, Std = 0.94, reflecting a neutral position on whether promotions often follow the creation of new and inventive ideas. Finally, "Senior managers encourage innovators to bend rules and rigid procedures to keep promising ideas on track" has the lowest mean score of M = 2.75, Std = 1.03, reflecting a neutral opinion on whether senior managers support bending rules for promising ideas.

Overall, the replies indicate a generally positive opinion of the organisation's support for innovation and idea development, with some indifferent responses to issues such as promotions for innovative ideas and the availability of financial support for initiatives.

4.3.2 Awareness of work discretion (WD)

The result presented in Table 4.5 represents the level of work discretion with the medium-sized construction companies in WC.

The mean of each of the 10 items in the work discretion instrument ranges from 3.06 – 3.75, suggesting that the respondents in the medium-sized construction companies in WC have a moderate tendency to experience a significant level of work discretion. Also, the standard deviation of these items falls with 0.89 – 1.14, indicating that there is little variance, which translates to weak covariance and suggests a correlation in their responses on work discretion (Table 4.6).

In particular, the item statement *"This organisation provides the chances to do something that makes use of my abilities"* has the highest mean response with low variability, which is an indication that workers in medium-sized construction companies in WC are given an enabling environment to utilise their abilities (Table 4.5).

However, the item statements *"This organisation provides the chances to do something that makes use of my abilities"* and *"I have much autonomy on my job and am left on my own to do my own work"* have

the lowest mean response and a moderate variability, suggesting that there is a correlation in the responses of those item statements among the respondents, i.e., they are given enabling environment to utilise their abilities with some level of autonomy (Table 4.5).

Less than half (38%) of the respondents feel that they are their own boss and do not have to double-check all of their decisions with someone else. 39% of respondents also agreed that harsh criticism and punishment result from mistakes made on the job. More than half (60%) of respondents agreed that their organisation provided the chance to be creative and try their own methods of doing the job (Table 4.5).

Similarly, a total of 64% of respondents agreed that their organisation provided the freedom to use their own judgment. More than half (67%) of respondents agreed that their organisation provided the opportunities to do something that made use of their abilities. Less than half (40%) of respondents agreed that they had the freedom to decide what they did on their job (Table 4.5).

A total of 59% of respondents agreed that it was their own responsibility to decide how their job was done. Few (34%) of respondents agreed that they almost always got to decide what they did on their job. More than half (55%) of respondents agreed that had much autonomy on their job and were left on their own to do their own work. Only 42% of respondents agreed that they seldom had to follow the same work methods or steps for doing major tasks day to day (Table 4.5).

Table 4.5: Work discretion (WD) participant scoring

	Antecedents of CE No. 2_ Autonomy/ Work Discretion	**No.**	**SD**	**D**	**N**	**A**	**SA**
WD_ 20	I feel that I am my boss and do not have to double-check all of my decisions with someone else.	100	7%	29%	26%	27%	11%
WD_ 21	Harsh criticism and punishment result from mistakes made on the job.	100	3%	17%	41%	28%	11%
WD_ 22	This organisation provides the chance to be creative and try my own methods of doing the job.	100	1%	15%	24%	44%	16%
WD_ 23	This organisation provides the freedom to use my own judgment.	100	3%	9%	22%	52%	14%
WD_ 24	This organisation provides the chances to do something that makes use of my abilities.	100	2%	6%	25%	49%	18%
WD_ 25	I have the freedom to decide what I do on my job.	100	4%	21%	35%	30%	10%
WD_ 26	It is basically my own responsibility to decide how my job gets done.	100	5%	12%	24%	43%	16%
WD_ 27	I almost always get to decide what I do on my job.	100	3%	25%	38%	26%	8%

WD_ 28	I have much autonomy in my job and am left on my own to do my own work.	100	1%	13%	31%	44%	11%
WD_ 29	I seldom have to follow the same work methods or steps for doing my major tasks from day to day.	100	4%	28%	25%	38%	5%

*SD – Strongly Disagree; D – Disagree; N – Neutral; A – Agree; SA – Strongly Agree; Std – Standard Deviation

The information presented in Table 4.6 below includes both the mean and standard deviations of work discretion. The mean (M) holds significant importance in the context of the five-point Likert scale, also referred to as the interval scale (Pimentel, 2010). On this scale, a mean (M) ranging from 1 to 1.80 indicates a complete lack of agreement. A mean (M) falling between 1.81 and 2.60 signifies disagreement, while the range of 2.61 to 3.40 indicates a neutral stance. Mean (M) values within the range of 3.41 to 4.20 suggest agreement, and those from 4.21 to 5 indicate a strong agreement.

Table 4.6: Work discretion (WD) question scoring

	Antecedents of CE No. 2_ Autonomy/ Work Discretion	No.	Mean	Std
WD_ 24	This organisation provides the chances to do something that makes use of my abilities.	100	3.75	0.89
WD_ 23	This organisation provides the freedom to use my own judgment.	100	3.65	0.94
WD_ 22	This organisation provides the chance to be creative and try my own methods of doing the job.	100	3.59	0.97
WD_ 26	It is basically my own responsibility to decide how my job gets done.	100	3.53	1.06
WD_ 28	I have much autonomy in my job and am left on my own to do my own work.	100	3.51	0.89
WD_ 21	Harsh criticism and punishment result from mistakes made on the job.	100	3.27	0.97
WD_ 25	I have the freedom to decide what I do on my job.	100	3.21	1.02
WD_ 29	I seldom have to follow the same work methods or steps for doing my major tasks from day to day.	100	3.12	1.01
WD_ 27	I almost always get to decide what I do on my job.	100	3.11	0.97
WD_ 20	I feel that I am my boss and do not have to double-check all of my decisions with someone else.	100	3.06	1.14

Table 4.6 data on work discretion (WD) demonstrates that employees perceive varied amounts of autonomy and work discretion within the organisation. For example, item WD_20, "*I feel that I am my boss and do not have to double-check all of my decisions with someone else*", gets a M score of 3.06,

showing a proclivity to agree with the statement. The Std of 1.14 indicates a degree of variability in answers. Similarly, item WD_21, "*Harsh criticism and punishment result from mistakes made on the job*", had a M score of 3.27, indicating a tendency to agree with the statement, with an Std of 0.97.

Items WD_22 through WD_29 indicate employees' perceptions of autonomy and discretion in various parts of their jobs. The M scores for these items range from 3.53 to 3.65, indicating a tendency to agree or strongly agree with statements about workplace autonomy and discretion. The Std for these items range between 0.89 and 1.06.

Overall, the statistics indicate that employees perceive a moderate to high amount of autonomy and work discretion inside the firm, as evidenced by mean scores falling within the range of agreement on the Likert scale. However, the range in replies, as shown by the standard deviations, suggests that perceptions of autonomy and discretion may differ among employees.

4.3.3 Awareness of rewards and/or reinforcement (Re)

The result presented in Table 4.7 represents the item statement of rewards/reinforcement within the medium-sized construction companies in WC.

The mean of each of these 6 items on the rewards/reinforcement instrument are between 3.05 to 4.18 suggesting that the respondents in the medium-sized construction companies in WC have a significant level of rewards/reinforcement. Similarly, the standard deviation of these items falls within 0.67 – 1.04, indicating that there is very little variability which translates to weak covariance, suggesting a higher correlation in their responses on rewards/reinforcement (Table 4.8).

In particular, the item statement *"There is a lot of challenge in my job"* followed by *"My supervisor will increase my job responsibilities if I am performing well in my job"* has the highest mean response with a low variance, which is an indication that managers in the medium-sized construction companies in WC are given more responsibilities based on their performance and that they are faced with various challenges when carrying out their duties (Table 4.7).

However, the item statement *"There is a lot of challenge in my job"* has the lowest mean response and a moderate variability, suggesting that there is a correlation in the responses of those item statements among respondents, i.e., they are faced with numerous challenges during the course of carrying out their responsibilities (Table 4.7).

More than half (56%) of the respondents felt that their managers helped them get their work done by removing obstacles and roadblocks. On rewards for innovative job approach, 35% of respondents also agreed that the rewards they received were dependent upon their innovation on the job. The majority

(70%) of respondents agreed that their supervisor would increase their job responsibilities if they performed well in their jobs (Table 4.7).

Similarly, a total of 64% of respondents agreed that their supervisor would give them special recognition if their work performance was especially good. More than half (65%) of respondents agreed that their manager would tell his/her boss if their work was outstanding. Most (87%) of respondents agreed that there was a lot of challenge in their job (Table 4.7).

Table 4.7: Rewards/reinforcement (Re) participant scoring

	Antecedents of CE No. 3_ Rewards/Reinforcement	No.	SD	D	N	A	SA
Re_30	My manager helps me get my work done by removing obstacles and roadblocks.	100	5%	12%	27%	42%	14%
Re_31	The rewards I receive are dependent upon my innovation on the job.	100	6%	25%	34%	28%	7%
Re_32	My supervisor will increase my job responsibilities if I am performing well in my job	100	1%	1%	28%	50%	20%
Re_33	My supervisor will give me special recognition if my work performance is especially good.	100	4%	6%	28%	47%	15%
Re_34	My manager would tell his/her boss if my work was outstanding.	100	3%	9%	23%	46%	19%
Re_35	There is a lot of challenge in my job.	100	0%	1%	12%	55%	32%

*SD – Strongly Disagree; D – Disagree; N – Neutral; A – Agree; SA – Strongly Agree; Std – Standard Deviation

Table 4.8 presented below also provides the mean and standard deviations of Reward/Reinforcement. Mean (M) holds considerable significance within the context of the five-point Likert scale, which is also referred to as the interval scale (Pimentel, 2010). On this scale, a mean (M) ranging from 1 to 1.80 signifies complete disagreement. A mean (M) falling between 1.81 and 2.60 indicates disagreement. From 2.61 to 3.40, it represents neutrality; from 3.41 to 4.20, it indicates agreement; and from 4.21 to 5, it implies strong agreement.

Table 4.8: Rewards/Reinforcement (Re) question scoring

	Antecedents of CE No. 3_ Rewards/Reinforcement	No.	Mean (M)	Standard deviation (Std)
Re_35	There is a lot of challenge in my job.	100	4.18	0.67
Re_32	My supervisor will increase my job responsibilities if I am performing well in my job	100	3.87	0.77
Re_34	My manager would tell his/her boss if my work was outstanding.	100	3.69	0.98

Re_33	My supervisor will give me special recognition if my work performance is especially good.	100	3.63	0.95
Re_30	My manager helps me get my work done by removing obstacles and roadblocks.	100	3.48	1.04
Re_31	The rewards I receive are dependent upon my innovation on the job.	100	3.05	1.03

Table 4.8 above indicates that Re_35: "There is a lot of challenge in my job" has M = 4.18 and Std = 0.67. The responses demonstrate excellent agreement with low variability. Re_32: *"My supervisor will increase my job responsibilities if I am performing well in my job"* has M = 3.87 and Std = 0.77. The responses show good agreement with low variability.

Re_34: "*My manager would tell his/her boss if my work was outstanding"* has M = 3.69 and Std = 0.98. The answers are generally consistent with moderate variability. Re_33: "*My supervisor will give me special recognition if my work performance is especially good"* has M = 3.63 and Std = 0.95. The data indicate agreement with some variation. Re_30: "My manager helps me get my work done by removing obstacles and roadblocks" has M = 3.48 and Std = 1.04. The replies indicate a trend towards agreement, with considerable variation in perspectives. Re_31*: "The rewards I receive are dependent upon my innovation on the job"* has M = 3.05 and Std = 1.03. The responses incline toward agreement, with some variation between responders.

Overall, the data indicates variable levels of agreement on the reward and reinforcement aspects, with some items exhibiting stronger consensus and others indicating greater variability in replies.

4.3.4 Awareness of time availability (TA)

The results presented in Table 4.9 represent the item statements on time availability within medium-sized construction companies in WC.

The mean of each of these 6 items in the time availability instrument falls between 3.05 to 3.85, suggesting that the respondents in these companies have moderate time availability. Similarly, the standard deviation of these items falls within 0.78 – 0.99, an indication that there is very little variance, which translates to weak covariance, suggesting a higher correlation in their responses on time availability (Table 4.10).

In particular, the item statement *"I feel that I am always working with time constraints on my job"* has the highest mean response with very low variance, suggesting that there is a correlation in the responses of those item statements among respondents. This indicates that managers in these companies are always working with time constraints when carrying out their duties (Table 4.9).

Half (50%) of the respondents agreed that during the past three months, their workload kept them from spending time developing new ideas. Very few (19%) of respondents agreed that they always seem to

have plenty of time to get everything done. Few (37%) of respondents agreed that they have just the right amount of time and workload to do everything well (Table 4.9).

Further, a total of 38% of respondents agreed that their job was structured such that they had very little time to think about wider organisational problems. The majority (73%) of respondents agreed that they felt they were always working with time constraints on their job. Less than half (34%) of respondents agreed that their co-workers and themselves always found time for long-term problem-solving (Table 4.9).

Table 4.9: Resource/Time availability (TA) participant scoring

	Antecedents of CE No. 4_ Resource/Time Availability	No.	SD	D	N	A	SA
TA_36	During the past three months, my workload kept me from spending time on developing new ideas.	100	1%	13%	36%	41%	9%
TA_37	I always seem to have plenty of time to get everything done.	100	13%	40%	28%	17%	2%
TA_38	I have just the right amount of time and workload to do everything well.	100	5%	24%	34%	35%	2%
TA_39	My job is structured so that I have very little time to think about wider organisational problems.	100	1%	19%	42%	36%	2%
TA_40	I feel that I am always working with time constraints on my job.	100	0%	6%	21%	55%	18%
TA_41	My co-workers and I always find time for long-term problem-solving.	100	4%	16%	46%	28%	6%

*SD – Strongly Disagree; D – Disagree; N – Neutral; A – Agree; SA – Strongly Agree; Std – Standard Deviation

Table 4.10 presented below also provides the mean and standard deviations of Resource/Time availability. M holds considerable significance within the context of the five-point Likert scale, which is also referred to as the interval scale (Pimentel, 2010). On this scale, a mean (M) ranging from 1 to 1.80 signifies complete disagreement. A mean falling between 1.81 and 2.60 indicates disagreement. From 2.61 to 3.40, it represents neutrality; from 3.41 to 4.20, it indicates agreement; and from 4.21 to 5, it implies strong agreement.

Table 4.10: Time availability (TA) question scoring

	Antecedents of CE No. 4_ Resource/Time Availability	No.	Mean	Standard deviation
TA_40	I feel that I am always working with time constraints on my job.	100	3.85	0.78
TA_36	During the past three months, my workload kept me from spending time on developing new ideas.	100	3.44	0.87
TA_39	My job is structured so that I have very little time to think about wider organisational problems.	100	3.19	0.80

TA_41	My co-workers and I always find time for long-term problem-solving.	100	3.16	0.91
TA_38	I have just the right amount of time and workload to do everything well.	100	3.05	0.94
TA_37	I always seem to have plenty of time to get everything done.	100	2.55	0.99

Table 4.10 indicates that TA_40: *"I feel that I am always working with time constraints on my job*" shows M = 3.86 and Std = 0.78. The mean is within the range of agreement (3.41 - 4.20), showing that respondents largely agree that they are usually working under time limitations. The Std of 0.78 indicates that respondents agreed relatively consistently.

TA_36: "*During the past three months, my workload kept me from spending time on developing new ideas*" shows M = 3.44 and Std = 0.87. The mean is within the range of agreement (3.41 - 4.20), indicating that most respondents believe that their workload has hampered their ability to generate new ideas. The standard deviation of 0.87 indicates considerable diversity in replies, but a general trend toward agreement.

TA_39: "*My job is structured so that I have very little time to think about wider organisational problems"* shows M = 3.19 and Std = 0.80. The mean falls within the neutrality range (2.61 - 3.40), indicating that respondents are neutral about the extent to which their job structure restricts their ability to think about larger organisational issues. The Std of 0.80 suggests moderate variability in responses.

TA_38: "*I have just the right amount of time and workload to do everything well*" shows M = 3.05 and Std = 0.94. The mean is within the neutrality range (2.61 - 3.40), indicating that respondents feel neutral about having enough time and workload to do adequately. The Std of 0.94 suggests moderate variety in responses, indicating varying perspectives among respondents.

TA_41: *"My co-workers and I always find time for long-term problem-solving*" shows M = 3.16 and Std = 0.91. The mean is within the neutrality range (2.61 - 3.40), showing that respondents are undecided about whether they and their co-workers always make time for long-term problem solving. The Std of 0.91 indicates that responses vary moderately.

TA_37: *"I always seem to have plenty of time to get everything done"* shows M = 2.55 and Std = 0.99. The mean is within the range of disagreement (1.81 - 2.60), indicating that most respondents disagree with the statement. However, the comparatively large standard deviation of 0.99 indicates significant heterogeneity in replies, implying that perspectives on this statement differ.

4.4.5 Awareness of organisational boundaries (OB)

The result presented below in Table 4.11 represents the item statement of organisation boundaries within medium-sized construction companies in WC.

The mean of each of these 7 items in the organisation boundaries instrument are between 3.12 to 3.98, suggesting that the respondents in these companies are aware of their organisational boundaries. Similarly, the standard deviation of these items falls within 0.74 – 1.24, an indication that there is moderate variability which translates to small covariance, suggesting moderate correlation in their responses on organisational boundaries (Table 4.12).

Specifically, the item statements *"On my job I have no doubt of what is expected of me"* followed by *"I clearly know what level of work performance is expected from me in terms of amount, quality, and timelines of output"* has the highest mean response with a low variance, which is an indication that workers in the medium-sized construction companies in WC are significantly aware of their organisational boundaries, i.e., they have clear-cut instructions on what to do, with well-defined quality expectations within a stipulated time frame (Table 4.11).

However, the item statement *"In the past three months, I have always followed standard operating procedures or practices to do my major tasks"* has the lowest mean response and a moderate variability, suggesting that there is a correlation in the responses of those item statements among respondents, i.e., they are often following their organisation's standard operating procedures when carrying out their duties (Table 4.11).

The majority (74%) of the respondents agreed that in the past three months, they have always followed standard operating procedures or practices to do their major tasks. More than half (69%) of respondents agreed that there were many written rules and procedures that existed for doing their major tasks. The majority (77%) of respondents agreed that they did not doubt what was expected of them in their jobs (Table 4.11).

More than 54% of respondents agreed that there was little uncertainty in their jobs. Less than half (44%) of respondents agreed that during the past year, their immediate supervisor discussed their work performance with them frequently. More than half (54%) of respondents agreed that their job description clearly specified the standards of performance on which their job was evaluated. The majority (81%) of the respondents agreed that they clearly knew what level of work performance was expected from them in terms of amount, quality, and timelines of output. (Table 4.11).

Table 4.11: Organisational boundaries (OB) participant scoring.

	Antecedents of CE No. 5_Organisational Boundaries	No.	SD	D	N	A	SA
OB_ 42	In the past three months, I have always followed standard operating procedures or practices to do my major tasks.	100	0%	3%	23%	54%	20%
OB_ 43	There are many written rules and procedures that exist for doing my major tasks.	100	2%	8%	21%	49%	20%
OB_ 44	On my job I have no doubt of what is expected of me.	100	1%	7%	15%	47%	30%
OB_ 45	There is little uncertainty in my job.	100	5%	22%	19%	42%	12%
OB_ 46	During the past year, my immediate supervisor discussed my work performance with me frequently.	100	11%	24%	21%	30%	14%
OB_ 47	My job description clearly specifies the standards of performance on which my job is evaluated.	100	5%	17%	24%	36%	18%
OB_ 48	I clearly know what level of work performance is expected from me in terms of amount, quality, and timelines of output.	100	4%	4%	11%	54%	27%

*SD – Strongly Disagree; D – Disagree; N – Neutral; A – Agree; SA – Strongly Agree; Std – Standard Deviation

Table 4.12 presented below also provides the mean and standard deviations of Organisational Boundaries. M holds considerable significance within the context of the five-point Likert scale, which is also referred to as the interval scale (Pimentel, 2010). On this scale, a mean (M) ranging from 1 to 1.80 signifies complete disagreement. A mean falling between 1.81 and 2.60 indicates disagreement. From 2.61 to 3.40, it represents neutrality; from 3.41 to 4.20, it indicates agreement; and from 4.21 to 5, it implies strong agreement.

Table 4.12: Organisational boundaries (OB) question scoring

	Antecedents of CE No. 5_Organisational Boundaries	No.	Mean (M)	Standard deviation (Std)
OB_ 44	On my job I have no doubt of what is expected of me.	100	3.98	0.91
OB_ 48	I clearly know what level of work performance is expected from me in terms of amount, quality, and timelines of output.	100	3.96	0.95
OB_ 42	In the past three months, I have always followed standard operating procedures or practices to do my major tasks.	100	3.91	0.74

OB_ 43	There are many written rules and procedures that exist for doing my major tasks.	100	3.77	0.93
OB_ 47	My job description clearly specifies the standards of performance on which my job is evaluated.	100	3.45	1.12
OB_ 45	There is little uncertainty in my job.	100	3.34	1.1
OB_ 46	During the past year, my immediate supervisor discussed my work performance with me frequently.	100	3.12	1.24

Table 4.10 above shows OB_44: "*On my job I have no doubt of what is expected of me":* M = 3.98, Std = 0.91, which shows that, on average, respondents firmly agreed that they knew exactly what was expected of them in their jobs. The standard deviation suggests some variation in replies.

OB_48: *"I clearly know what level of work performance is expected from me in terms of amount, quality, and timelines of output":* M = 3.96, Std = 0.95. On average, respondents strongly believed that they understood the degree of work performance required of them in terms of quantity, quality, and timeliness of output. The standard deviation indicates some diversity in responses.

OB_42: *"In the past three months, I have always followed standard operating procedures or practices to do my major tasks"*: M = 3.91, Std = 0.74. Respondents agreed (but not strongly) that they followed standard operating procedures or practices for their principal duties. The standard deviation indicates some degree of response variability.

OB_43: *"There are many written rules and procedures that exist for doing my major tasks"*: M = 3.77, Std = 0.93. On average, respondents agreed (although not strongly) that their principal tasks are governed by several written rules and procedures. The standard deviation suggests that responses are variable.

OB_47*: "My job description clearly specifies the standards of performance on which my job is evaluated"*: M = 3.45, Std = 1.12. Respondents are mostly neutral on whether their job descriptions effectively define the performance standards against which their jobs are evaluated. The standard deviation suggests some diversity in responses.

OB_45: *"There is little uncertainty in my job":* M = 3.34, Std = 1.10. Respondents are generally neutral regarding job instability. The standard deviation implies a significant level of variability in responses.

OB_46: *"During the past year, my immediate supervisor discussed my work performance with me frequently":* M = 3.12, Std = 1.24. This suggests that, on average, respondents disagreed with the statement that their direct superiors addressed their work performance regularly in the previous year. The standard deviation indicates that responses were very variable.

4.5 Factor Analysis

This study focuses on exploratory factor analysis (Shrestha, 2021). According to Yong and Pearce (2013), the main purpose of exploratory factor analysis (EFA) is to summarise data so that it can be easily interpreted and to understand the relationships and patterns. It is generally used to decrease variables into a smaller set to save time and facilitate easier interpretations. A factor is an unobservable variable that impacts more than one observed measure and that accounts for the correlations among these observed measures (Watkins, 2018).

Factor analysis was used to establish the correctness of the questionnaire theories. Specifically, factor loadings were used to establish the weight of the various statements on extracted factors.

An EFA was conducted to discover the number of factors that underlie the set of items and to define the underlying dimensionality of a set of items. This was done to enable the researcher to identify those items that did not measure an anticipated factor or those that fell under multiple factors. Such items were identified as poor indicators of the desired construct and were eliminated from further research. The main point was to limit data by eliminating all items that were identified under multiple factors because those items could make the results poor, or form unfair results from biased data.

4.4.1 The steps and result indicated in conducting factor analysis

Before the analysis began, it was important to determine the factorability of the correlation matrix. For this purpose, two tests were performed: the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity. For the data to be appropriate and adequate for statistical analysis, KMO must be greater than 0.5, while anything less than that is unacceptable. The KMO values between 0.8 to 1.0 indicate the sampling is good, between 0.7 to 0.79 values are fair, and values between 0.6 to 0.69 are average (Shrestha, 2021).

Table 4.12 Kaiser- Meyer-Olkin and Bartlett's Sphericity Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.788
Bartlett's Test of Sphericity	Approx. Chi-Square	2763.730
	df	1128
	Sig.	<,001

These results indicate that patterns and correlations are compact, thus providing an excellent justification for further statistical analysis to be conducted. To strengthen the research validity and reliability, the Corporate Entrepreneurship Assessment Instrument (CEAI) was used which has been highly used in different research studies and has been proven to be both valid and reliable (Vizitiu et al., 2018; Kuratko et al., 2014b). EFA was conducted to add further support to the validity and reliability of the instrument used in this study.

Next, after the KMO and Bartlett's Test, the next step was to investigate the items to be extracted. Shrestha (2021) states that factor extraction incorporates determining the lowest number of factors that can be used to best characterise the interrelationships among the set of variables. There are several approaches to extract the number of underlying factors.

This study used principal component analysis (PCA) for obtaining factor solutions. The purpose of the study was to analyse the data to obtain the minimum number of factors required. The assessment was conducted on the entire 48 CEAI questionnaire items; the total variance was up to 12 factors which were to be extracted with Eigenvalues > 1.00 (Ponnam et al., 2014), explaining 69.529 % of the total variance with the 12-factor solution. This was deemed impractical given the number of items, and therefore a factor solution was investigated using a Principal Component Factoring with direct oblimin rotation (Hayton et al., 2004; Shrestha, 2021).

Next was factor rotation: Initially the pattern matrix observed indicated some cross-loadings between different factors/components and these were greater than 0.3. When items appear in double factor loadings, it is suggested (Guvendir & Ozkan, 2022) that such factors be deleted, to ensure that the results can be interpreted easily and accurately. Stevens and Pituch (2011:347) and Emerson (2017) suggest using a cut-off of 0.4, irrespective of sample size, for interpretative purposes. However, some studies suggest that suppressing loadings that are less than 0.7 is acceptable, while other studies recommend greater than 0.5 loadings, and suppressing all factor loadings less than 0.5 (Beavers et al., 2013).

Hence, further investigation or observation was completed, and the researcher performed a principal component analysis using the oblique rotation method. Initially, the suppression of absolute values was less than 0.3, the suppression of absolute value was increased to 0.5 to suppress all cross-loadings less than 0.5 and the only items retained were with factor loadings greater than 0.5. This process was repeated until the item reflected loading higher than 0.5.

In this study, only 16 items were deleted as they loaded on two factors with less than 0.5. and the aim was to identify the items that had similarities. This was the last stage; this stage is called factor rotation. Rotation helps to deal with data sets where there are large numbers of observed variables that are thought to reflect a smaller number of underlying/latent variables. Note that for all rotations, the goal is the same, implicitly, namely the clarity of factor loadings (Kimani, 2016).

Factor number 1 and 2, management support, consisted of nineteen items. Six items (MS 5, MS 10, MS 11, MS 13, MS 16, and MS 19) were originally intended to measure management support, but none of them loaded onto the management support factor. They either could not load on this factor, or they did not survive the 0.50 cut-off for significance for factor loading in the study. Of the management support items, six loaded factor one (MS 1, MS 2, MS 3, MS 4, MS 6, and MS 9) with work discretion and rewards items, and seven loaded in factor two (MS 7, MS 8, MS 12, MS 14, MS 15, MS 17, MS 18). This indicate that the work discretion and rewards have something in common whether in their questionnaires or respondents.

Rewards/reinforcement measured with management support in factor 1. Rewards/reinforcement comprised six items in total. Three of the six items (R 32, R 33, and R 34) that were originally intended to measure the construct of rewards/reinforcement loaded with management support factor one. The other item cross-loaded onto other constructs, or it was dropped as it could not survive the cut-off factor loading point of 0.50, as recommended by Cristobal et al. (2007).

Factor 3, labelled organisational boundaries, consisted of four items (OB 42, OB 43, R/TA 36, and R/TA 40). Five of the organisational boundaries' items (OB 44, OB 45, OB 46, OB 47, and OB 48) were originally intended to measure risk taking, none of them loaded onto the organisational boundaries factor and could either not load on this factor and cross-loaded onto other factors, or they did not survive the 0.50 cut-off for significance for factor loading in the study. The two items that loaded with organisational boundaries (R/TA 36 and R/TA 40) were originally intended to measure under resource and/or time availability. These two items were regarded by respondents as being related to the organisational boundaries factor.

The 4th factor resource and/or time availability comprised of six items. Of the six items that were originally intended to measure the construct of resource/time availability, only two items loaded onto this construct (RTA 37, R/TA 38) and with one item (WD 29) that was intended to measure work discretion. Items, R/TA 39, and R/TA 41 did not load onto this construct, nor cross-load onto any other construct that was not theoretically intended to measure resource and/or time availability. Two items loaded (R/TA 36 and R/TA 40) with organisational boundaries, which means they had something in common.

Factor 5, labelled work discretion, comprised seven items (WD 22, WD 23, WD 24, WD 25, WD 26, WD 27 and WD 28). The other two items (WD 20 and WD21) that were originally intended to measure work discretion were removed because of insufficient factor loading, being less than the cut-off of 0.5. The last one item (WD 29) was disqualified; therefore, it was deleted.

Table 4.14 Rotated pattern matrix

Pattern Matrix[a]					
CE antecedents	Component				
	1	2	3	4	5
MS 6	.754				
MS 4	.699				
MS 1	.668				
R 33	.661				
WD 24	.636				
R 34	.634				
MS 3	.629				
MS 2	.623				
WD 22	.594				
MS 9	.539				
R 32	.535				
MS 18		.649			
MS 14		.618			
MS17		.599			
MS 8		.586			
MS 7		.582			
MS15		.522			
MS 12		.515			
OB 43			.626		
OB 42			.622		
R/TA 40			.607		
R/TA 36			.527		
R/TA 37				.731	
R/TA 38				.603	
WD 29				.533	
WD 28					-.685
WD 23					-.682
WD 26					-.659
WD 27					-.628
WD 25					-.618
Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalisation.[a]					
a. Rotation converged in 16 iterations.					

4.4.2 Reliability and scale descriptive statistics

The descriptive and reliability statistics of the 19-tem scale management support, 10-item scale work discretion, 6-item scales rewards/reinforcement and time availability respectively, and 7-item scale organisational boundaries are presented in Table 4.14 and Figure 4.3.

The reliability estimates (Cronbach's α) for management support [Mean = 60.93, SD = 10.80], work discretion [Mean = 33.80, Std = 6.19], rewards/reinforcement [Mean = 21.90, SD = 16.13] (Figure 4.7), time availability [Mean = 19.24, Std = 6.00] and organisational boundaries [Mean = 25.53, Std = 5.58] of the scale ranges from 0.264 – 0.891, with the time availability scale having the poorest internal consistency, and other scales reflecting acceptable/excellent internal consistency values. This suggests that respondents in the medium-sized construction companies in WC certainly experienced each item except for time availability (Table 4.9).

Table 4.15: Reliability and scale descriptive statistics

Scale	Cronbach's Alpha	Cronbach's Alpha based on Standardized Items	No of Items
Management Support	0.891	0.892	19
Work Discretion	0.829	0.83	10
Rewards/Reinforcement	0.824	0.816	6
Time Availability	0.264	0.244	6
Organisational Boundaries	0.769	0.772	7

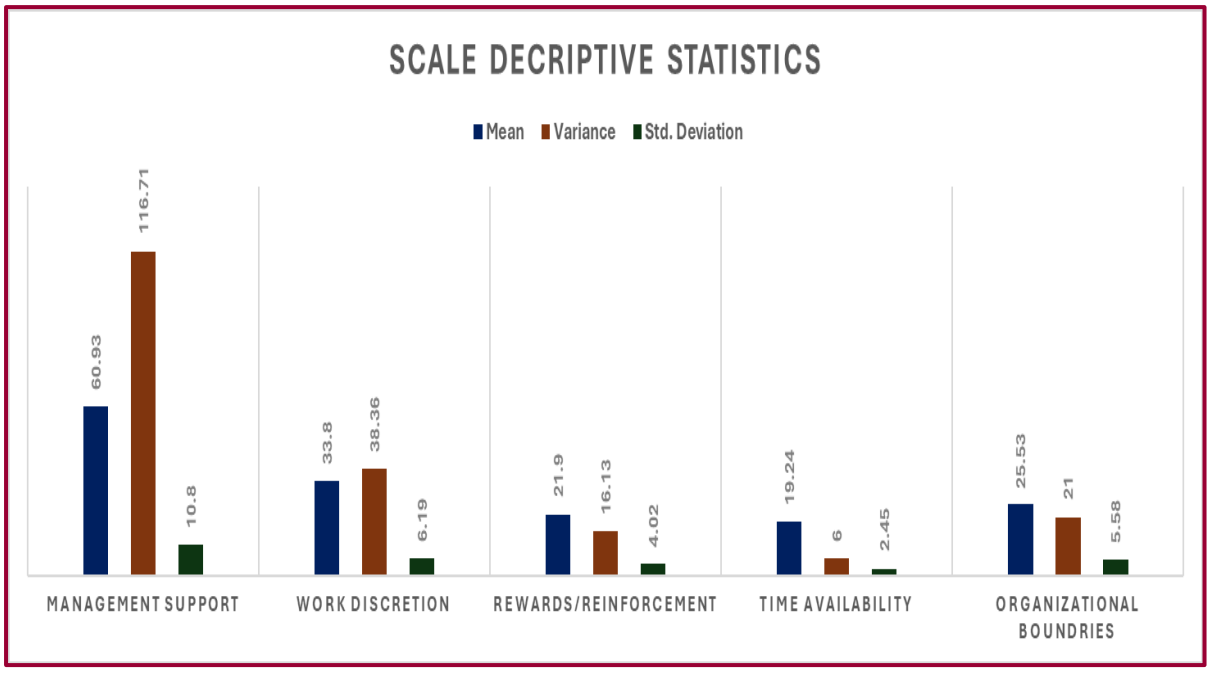


Figure 4.3: Scale descriptive statistics of 5 CE antecedents

4.4.3 Correlation matrix between the 5 CE antecedents

Figure 4.4 below shows the relationship between the 5 CE antecedents among the respondents in the medium-sized construction companies in WC.

The correlation coefficient values among these scales range from 0.16 – 0.63, suggesting that there is a weak to moderate relationship among these scales, and some of these relationships are not statistically significant such as the relationship between rewards/reinforcement vs time availability, and work discretion vs time availability (Figure 4.3).

The following pairs of scales are statistically significantly correlated together organisational boundaries vs time availability, management support vs organisational boundaries, work discretion vs organisational boundaries, rewards/reinforcement vs organisational boundaries, work discretion vs management support, rewards/reinforcement vs management support, and work discretion and rewards/reinforcement suggesting that as the responses on any of these scales increases, there is a corresponding and significant increase on the other scales (Figure 3).

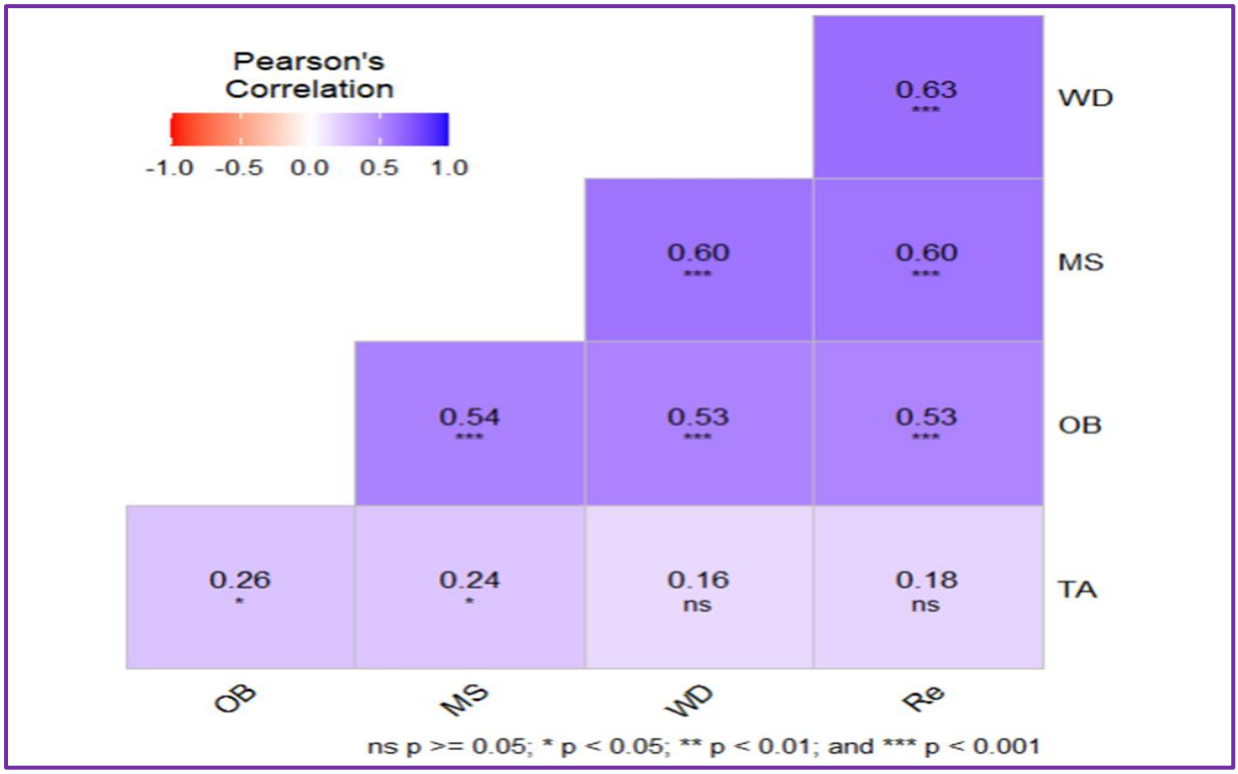


Figure 4.4: Correlation matrix of the 5 CE antecedents

*Significant at 5% level of significance (OB – organisational Boundaries, MS – Management Support, WD – Work Discretion, Re – Rewards/Reinforcement, TA- Time Availability).

The following chapter discusses the findings of the data analysed in this chapter.

CHAPTER 5: DISCUSSION OF FINDINGS

5.1 Introduction

In this portion of the thesis, the focus is on discussing the outcomes of the data analysis presented in the presiding chapter derived from the examination of the five components of corporate entrepreneurship. These elements, namely management support, work discretion, rewards/reinforcement, time availability, and organisational boundaries, are sequentially discussed. The chapter commences with a discussion of the participants' profiles.

5.2 Respondents' profile

The age of research participants is a significant factor in any study, particularly when examining work experience, career goals, and motivation. In this research, the data reveals that the largest group of respondents is aged 31–40 years, followed by those aged 20–30 years and 41+ years. This distribution indicates that most management-level employees in medium-sized construction companies in the Western Cape are middle managers within the 31–40 age range.

Research suggests that this age group is at a vibrant stage of their careers, having acquired substantial experience yet not nearing retirement, which typically occurs between 55 and 65 years. Employees in this cohort are generally skilled and open to learning, but they also bring specific challenges to organizations. They are often full of ideas, opinions, and aspirations, which can be both an asset and a challenge.

Studies have shown that mid-career professionals, such as those aged 31–40, are highly engaged but may encounter issues related to career progression and balancing personal and organizational goals (Cuddy et al., 2023). Ng and Parry (2022) find that this group frequently has high expectations for career advancement and work-life balance. This aligns with PwC (2011), which notes that these employees might focus more on their personal needs and become disengaged if their expectations are not met.

Fang and Zhang (2021) highlight that individuals in this age range often seek roles that align with their personal values and offer growth opportunities. McKee-Ryan and Harvey (2022) discuss the complexity of career transitions for mid-career professionals, emphasizing the unique challenges they face. Furthermore, Kooij and van de Voorde (2023) point out that employees aged 31–40 are looking for roles that resonate with their work preferences and organizational objectives.

Brewster, Chung, and Sparrow (2024) also provide insights on managing employee engagement across various age groups, emphasizing the need to understand and address the specific needs and expectations of mid-career professionals.

There are several possible explanations for the results pertaining to the 20 – 30-year-old group. For example, this is a group of fresh minds, who are still new in the industry and eager to learn. Their mission is to apply what they have learned theoretically from the universities or schools. This group is highly complicated and lacks coherence, with a fragmented focus and a significant reliance on advice from more experienced personnel inside the company. There is a noticeable need for expanded structure and mentorship to streamline its operations and develop greater autonomy. This group's liberal tendencies might lead to carelessness if not guided, but with the right guidance, they have the ability to offer tremendous value to the business. This group wants new technologies to be implemented that can benefit the organisation's products and ultimately enhance the organisation's competitive advantages. Agenbag and Amoah (2021) agree that this age group is willing to learn and use new technologies and follow organisational work strategies. They are an honest about their feelings about the organisation's operations and that may be difficult sometimes for other managers to comprehend.

The results indicated that this group (20 – 30 years) had the second highest number of respondents within medium-sized construction companies. Also, this indicates that the majority of these companies have flexible, fresh minds are and eager-to-learn individuals.

The age bracket of the last group was 40+ years, suggesting that these are people who have been in the industry for a while and are thus experienced. The results indicated that this group was the smallest, which could mean that the medium-sized construction companies have a minimum of individuals presented in this group. This is a very dangerous group because they consider themselves as seniors within the organisation, and therefore they find it hard to accept new strategies and developments that can enhance the organisation's competitive advantages. Additionally, as much as they have all the experience, some of them might not be willing to share it with younger colleagues (Hanafi, 2020). A lack of shared knowledge can be dangerous for organisational growth. On the other hand, Workforce and Ce (2015) stated that this group tends to focus on the more practical arrangements that their role offers. Their priorities are flexible working hours, being able to achieve a work-life balance, and a cohesive working environment.

The motivation for this discussion of age groups is that age groups in organisations play a significant role. Many organisations that have these age groups are thriving in the markets while others are being damaged and destroyed by the same groups. From the presented results, it is highly evident that the construction industry is filled with young and vibrant employees. The construction industry is also well known for not being keen and adaptive to change, but young people demand change. Hence, this study saw the need to analyse and report the age group findings.

5.3 Prevalence of management support

Management support is essential for an organisation to be innovative, and it is one of the five antecedents of corporate entrepreneurship (CE) explored in this study (Herbert et al., 2023). When top managers provide middle managers with the support and resources they need to be creative, it can drive the development of novel products, services, and processes that will propel their firm to success (Khan & Mohiya, 2020).

According to the findings of the study, grade 8 and 9 middle managers at medium-sized construction companies in the Western Cape receive moderate management support. This suggests that top management in these organisations moderately support innovation, which may lead to middle managers being afraid of breaking regulations and rigid procedures to nurture potential ideas and keep them on track. This finding is congruent with those of Balkova, Lejskova, and Lizbetinovz (2022), who discovered that the art of offering innovative products relies on having highly motivated and creative middle managers. Without this motivation, talented workers/middle managers may avoid job opportunities and put minimal effort into enhancing their performance. Inefficient utilisation of middle managers' talent is viewed as a resource wastage, resulting in reduced creativity, diminished market share, and a loss of competitive advantage.

From the perspective of middle managers, there exists a perception that strict adherence to organisational rules and procedures impedes their capacity to fulfill their roles as innovators and creative thinkers. This sentiment implies that these middle managers believe that a more flexible approach to regulations could empower them to better contribute to innovative processes within medium-sized construction companies in the WC.

Management support and flexible management rules are essential in any organisation that desires innovation and wants it to thrive. To support innovation, one important way is to create a culture of innovation (Ceausu et al., 2017). This entails creating an environment where innovative employees such as middle managers feel at ease sharing their ideas at any stage of a project, irrespective of how crude that idea may be (Matinaro & Liu, 2017). Also, creating a safe environment for these employees such as middle managers to take risks, allowing the autonomy to experiment with their innovative ideas, and implementing the same solutions towards solving organisational challenges. This level of support is more advantageous for intrapreneurial employees such as middle managers who display entrepreneurial traits. This set of employees (middle managers) plays a significant role in driving innovation within the organisation, as noted by Huang, Yang Lin, and Hsieh (2021).

Unfortunately, this is not supported by this research, the participants (grade 8 and 9 middle managers) confirmed receiving moderate support from the top management, but they were also subject to rigid rules

which they were often scared of crossing to nature their innovative ideas. These findings revealed a counterproductive action within the construction industry as innovation cannot thrive in the uncertain space between support and stiff regulations.

Another important factor relating to top management support for their middle managers is the provision of adequate resources. It became evident that one of the ways top managements can support their middle managers is by providing them with the resources they need to execute their task and ideas. According to Schachtebeck and Nieuwenhuizen (2015), these resources may include providing them with adequate training, funding, and mentorship.

Medium-sized construction companies, as observed in this study, the encouragement of innovative ideas in these organisations not only encourages innovation and creativity among middle managers but also aligns with the recommendations put forth by Morais et al. (2021). The current study emphasises that enhancing support for intrapreneurs could potentially address the existing deficits in top management support, contributing to a more holistic and innovation-oriented organisational culture.

The link between supportive environments and innovation, together with an awareness of the needs of intrapreneurs, emerges as a cornerstone for effective innovation management and organisational development.

The implications of these findings show that, while there is some foundation for corporate entrepreneurship inside these medium-sized construction enterprises, considerable barriers must be overcome. To improve their innovative capacities and remain competitive, management must expand their support for corporate entrepreneurship by cultivating a more adaptable, resourceful, and risk-tolerant culture. This could entail rethinking reward structures, allocating greater resources to innovation, and cultivating a culture that promotes and supports creative problem-solving and cross-functional collaboration.

Hypothesis (H1): Top managers of medium-sized construction companies in the Western Cape support middle managers' entrepreneurial spirit.

The idea that top managers encourage the entrepreneurial spirit of middle managers in medium-sized construction enterprises in the Western Cape (WC) is based on management support's crucial role in encouraging organizational innovation. According to Herbert et al. (2023), managerial support is a critical antecedent of corporate entrepreneurship (CE), which is required to cultivate an atmosphere conducive to innovation. Khan and Mohiya (2020) back up this idea by arguing that when top managers offer intermediate managers with the appropriate assistance and resources, it stimulates the development of innovative goods, services, and procedures, propelling the firm to success.

However, the results of this study show that, while middle managers (grades 8 and 9) in medium-sized construction enterprises in the WC receive moderate support from top management, this support is frequently hindered by rigid organizational norms and procedures. These limits may limit middle managers' ability to act on their entrepreneurial inclinations, since they may be afraid of breaching rules to foster promising ideas (Balkova, Lejskova, & Lizbetinovz, 2022). The tension between offered help and restrictive restrictions implies that, while some managerial support exists, it may not be adequate to completely empower middle managers' entrepreneurial spirit.

5.4 Prevalence of work discretion

Work discretion is another factor used to measure corporate entrepreneurship. *The findings suggest that work discretion is moderate within medium-sized construction companies in the Western Cape*. This is an indication that the middle managers have some level of autonomy to make decisions. This aligns with the findings in the study on work discretion as a factor that fosters corporate entrepreneurship.

Suyadi and Java (2014) and Ireland et al. (2006) have previously said that work discretion promotes employee flexibility, autonomy, and the encouragement to experiment and take risks. They think that having the freedom to make decisions promotes creativity and experimentation. However, subsequent research has highlighted the difficulties and limitations of job discretion.

For instance, recent research by Gupta and Saxton (2022) underlines that, while work discretion allows individuals to experiment and create, it can also present difficulties when reconciling autonomy with organizational limitations. De Jong and Den Hartog (2023) agree that excessive discretion might make it harder to follow organizational standards and comply with industry requirements.

Furthermore, Ahmed et al. (2017) and Suyadi and Java (2014) found that middle managers frequently experience restraints as a result of strict norms and work procedures. These limits may limit their ability to exercise full judgment. This difficulty is especially acute in the construction business, where adherence to safety rules and building codes is essential (Koehn et al., 2023). Recent studies by Liu et al. (2024) reinforce this viewpoint, demonstrating how the need to combine autonomy with regulatory obligations frequently limits the extent of work discretion accessible to construction managers.

Another significant component of work discretion is its effect on employee commitment. Ramdhani et al. (2019) found that when employees are given the flexibility to control their own work, they generate a greater emotional tie and commitment to the firm. Employees feel more involved in corporate goals and motivated when they have autonomy over their duties (Smith & Thompson, 2022; Patel & Wu, 2023).

Recent research confirms that work discretion correlates positively with employee success. Higher autonomy promotes innovation and successful problem resolution (Ireland et al., 2006; Lee & Wright,

2023). Organizations with more work discretion perform better because their employees are more engaged and motivated (Lumpkin & Dess, 2001; Johnson & Parker, 2024).

In the construction industry, middle managers frequently work in teams involving various stakeholders. This practice offers them opportunities to engage in different projects with different stakeholders within medium-sized construction companies in the WC. This exposure allows them to showcase a wide range of skills, and different challenges, which helps develop new skills. Companies embracing this strategy highlight the importance of adaptability and collaboration across various roles, enabling individuals to effectively apply their abilities in different situations.

The findings also indicate that autonomy or freedom can manifest in different ways across organisations. In medium-sized construction companies in the WC, middle managers often enjoy certain levels of freedom, given the expectation of fulfilling their duties. Such autonomy comes in different dimensions, including decision-making, scheduling, and method autonomy.

In conclusion, it is clear that medium-sized construction companies' top managers are creating environments where middle managers can utilise their skills, offering them opportunities for career advancement. These opportunities can be facilitated through fostering a supportive work culture and providing training, allowing middle managers to excel and find job satisfaction. Furthermore, rotating middle managers among projects in the construction industry enhances their abilities and adaptability, ultimately contributing to a more effective and collaborative work environment.

However, the level of autonomy is moderate and needs to be re-evaluated. When middle managers feel there is control over their creativity, they tend to limit their abilities and become bored, and leave employment to find better opportunities that allow them to exercise their abilities with significant autonomy.

In summary, based on these findings, it is evident that there exists a level of work discretion in the medium-sized construction companies in the WC. Although these companies limit the level of autonomy of their middle managers, it is still an environment that allows middle managers to use their abilities to some degree.

The findings' implications draw attention to the necessity for Western Cape medium-sized construction enterprises to strengthen corporate entrepreneurship. Even though workers' skills are effectively employed, their lack of autonomy and fear of criticism stifle creativity. Companies should give workers more freedom, lessen the severity of consequences for errors, and provide a more encouraging atmosphere for taking risks and trying new things in order to develop an entrepreneurial culture.

Hypothesis H2. Top managers grant work discretion to the middle managers for them to participate in the entrepreneurial initiative within the medium-sized construction companies in the WC.

The hypothesis that top managers delegate work authority to middle managers for entrepreneurial activities in medium-sized construction enterprises in the WC is supported by evidence indicating moderate autonomy. Suyadi and Java (2014) and Ireland et al. (2006) have observed that this discretion promotes creativity and adaptability. However, limits imposed by organizational rules and industry laws, as noted by Gupta and Saxton (2022) and Koehn et al. (2023), limit the full exercise of this liberty. While discretion exists, its moderation may limit middle managers' ability for innovation, affecting their commitment and job happiness.it.

5.5 Prevalence of rewards/reinforcement

Three interesting insights emerged from data analysis of middle managers' rewards and reinforcement. To begin, intermediate managers in these construction enterprises encounter enormous hurdles at work. *This is clear, as 87% of respondents stated that they experienced numerous challenges in their professions.* This finding is consistent with research by Ogwueleka and Maritz (2013) and Yahaya (2021), as well as Siddiqui and Ali (2023), who identified problems such as a lack of resources, unreasonable timelines, and challenging clientele. According to Preenen (2021) and Smith and Wong (2023), these hurdles detract from performance rather than motivate it.

Second, *the findings revealed that most firms' reward systems are neither well-structured or established.* The majority of middle managers' comments indicated that the awards they got did not reflect the innovative outcomes of their positions. Supervisors recognized their great work, but there was a lack of awareness and clarity about the organizational incentive structure. This can demotivate middle managers and diminish productivity, according to Niguse and Getachew (2019), Khan, Mahmood, and Nawaz (2017), and Miller and Jones (2023). Recent studies such as those by Lee and Ng (2023) and Gibson and Zhao (2022) highlight the shortcomings of incentive systems and emphasize the significance of matching rewards with performance outcomes.

The third finding *indicates that there is a gap in the adoption of the reward and reinforcement CE component.* According to Niguse and Getachew (2019), both financial and non-financial benefits are important in motivating middle managers. Middle managers' comments support this notion, as they indicated that upper managers frequently had to intervene to remove impediments before they could complete their work. This intervention demonstrates a lack of clear expectations for rewards for great performance and is consistent with previous research on the effects of a poorly defined reward system in the construction industry (Patel & Kumar, 2023). Furthermore, Tan and Zhang (2024) point out that

traditional reward schemes often encourage competition rather than collaboration, which may be detrimental to total production.

Contrary to some studies, such as Ogwueleka and Maritz (2013), which debate the potential negative effects of incentives in the construction industry, recent findings indicate that top managers in medium-sized construction companies in the WC may only recognize middle managers' valuable contributions during construction projects. However, they frequently fail to fulfill the promised benefits when the project is completed. This trend may cause middle managers to feel demotivated as they face problems in the incentive system. This is corroborated by Adams and Lee (2022), who discovered that incentives might often promote unhealthy rivalry rather than teamwork.

Furthermore, middle managers face a slew of obstacles, including insufficient health and safety precautions, antiquated technologies, theft on the job site, inept subcontractors, an infinite list of customer instructions, and a skilled labor scarcity. These hurdles eventually weaken motivation and increase turnover. This finding indicates a large disparity in the implementation of the reward/reinforcement CE component among medium-sized construction enterprises in the WC, as noted by recent studies (Wilson & Green, 2023; Patel & Kumar, 2023).

The implications of the findings highlight the necessity for Western Cape-based medium-sized construction enterprises to improve their corporate entrepreneurship. Although employment difficulties and performance-based rewards encourage entrepreneurial activity, incentives for innovation need to be strengthened and challenges need to be regular. These businesses can more effectively promote an entrepreneurial culture by giving employees more autonomy, lowering their fear of criticism, and establishing a welcoming environment for taking risks.

Hypothesis H3. Top managers provide middle managers with rewards and/or reinforcements to improve their entrepreneurial behaviour within medium-sized construction companies in the WC.

The findings reveal several key findings that challenge this hypothesis. For instance, middle managers encounter substantial problems such as limited resources, unreasonable timelines, and challenging clients (Siddiqui & Ali, 2023; Smith & Wong, 2023). These impediments impede their performance and indicate that the current rewards and reinforcements supplied by top management are insufficient to address these difficulties.
Second, existing compensation systems are inadequately organized and do not align with the innovative outcomes of middle managers' work (Miller & Jones, 2023; Lee & Ng, 2023). This misalignment implies that the awards are not properly structured to promote entrepreneurial conduct, which contradicts the idea that rewards should motivate such behavior.

Furthermore, intermediate managers frequently demand assistance from top management to overcome challenges and finish their tasks (Patel & Kumar, 2023). This dependency on managerial assistance implies that current rewards and reinforcements are insufficient for promoting entrepreneurial activity among middle managers.

Finally, typical incentive systems may promote unhealthy rivalry over collaboration (Tan & Zhang, 2024; Adams & Lee, 2022). This competitive dynamic can detract from the purpose of improving entrepreneurial behavior, raising concerns about the efficiency of compensation systems in encouraging the desired outcomes.

In summary, these data imply that the rewards and reinforcements offered by top managers are ineffective in supporting entrepreneurial action among middle managers, calling into question the idea that these reward systems are sufficient to drive such conduct.

5.6 Prevalence of resource/time availability

The effect of allotted job execution resource/time on the middle managers was another important CE capability studied. It was observed that this level of managers has moderate time availability. However, a significant number of middle managers feel that they are constantly working under pressure within strict time constraints. The statement "*I feel that I am working with time constraints on my job*" had the highest mean score and that is a clear indication and a fact supporting this finding.

This lack of proper available time for job execution can have negative consequences, including 1) reduced motivation when they are constantly under time pressure, resulting in them having less time to think creatively to and formulate new ideas. Surely, this can hinder innovation, thereby making it difficult for the company to remain competitive; 2) the middle managers working under constant time pressure are likely to experience stress and burnout. This can impact productivity and turnover negatively, and 3) middle managers working under constant pressure are likely to make mistakes which would affect the work output quality. According to Raja and Murali (2020), time availability is essential for the successful completion of construction projects, and Simpeh (2021) argued that it can negatively have an impact on a company's reputation. In Raja and Murali (2020) study, they stated that construction project often has tight deadlines and when they are missed, it can lead to customer dissatisfaction, increased project cost, and damaged reputation. This no doubt can make it difficult for the company to attract new clients.

The responses also indicate that these middle managers lead or run multiple projects simultaneously. They indicated that they were handling up to six projects at the same time and they utilised the same team members to close out these projects. This is prevalent in many medium-sized construction companies in the WC.

This perhaps explains why the time availability for middle managers in these companies is moderate. They face heavy administrative workloads while still having to complete their projects within designated timeframes and within budgets. For these companies to remain successful, they might need to reconsider how they distribute work among their middle managers. Ignoring this aspect could harm middle managers' morale and project outcomes. The medium-sized construction companies need to realise that when middle managers are pressed for time, they are more likely to make mistakes that could end up costing the company. It is important to note that it is not solely the company's responsibility to manage time; middle managers might unintentionally engage in "student syndrome", where they allocate all their time to tasks that could have been finished on time if started earlier.

However, middle managers need sufficient time to experiment and take risks for innovation. A reasonable amount of available time helps to manage workloads effectively and strike a balance between time and tasks. Based on the findings, the moderate level of time availability suggests a lack of time management, as well as lack of recognition of the importance of providing middle managers sufficient time for entrepreneurial and daily activities, and a lack of understanding that balancing time and workloads is essential for fostering innovation and success.

The findings' implications highlight the impact of time constraints on corporate entrepreneurship in medium-sized construction enterprises in the Western Cape. Employees are under considerable time constraints, which limit their ability to engage in long-term problem solving and innovative activities. The high mean score for time limitations shows that the majority of respondents are continuously subjected to these pressures, restricting their ability to create and implement new ideas. To encourage a more entrepreneurial environment, companies should handle time restrictions, companies could explore rearranging workloads so that staff have dedicated time for creative thought and innovation, rather than being constantly bound by tight deadlines. By implementing more effective workload management tactics, staff may be able to find time for strategic issue solving and long-term projects. Creating an environment in which employees can occasionally take a break from urgent responsibilities to think on larger organizational concerns could boost entrepreneurial activity.

To summarize, addressing time constraints and managing workloads more effectively are critical steps for medium-sized construction organizations seeking to foster a more innovative and entrepreneurial culture.

Hypothesis H4: In the WC, medium-sized construction companies' top managers make time and resources available to middle managers to behave entrepreneurially.

According to the investigation, existing management practices for allocating time and resources call this premise into question. Middle managers, in particular, report modest time availability but admit to

constantly feeling pressured due to stringent time limitations. The statement "I feel that I am working under time constraints on my job" obtained the highest mean score, showing a widespread problem with time management.

In summary, these data imply that the rewards and reinforcements offered by top managers are ineffective in supporting entrepreneurial action among middle managers, calling into question the idea that these reward systems are sufficient to drive such conduct.

For instance, Middle managers frequently have tight timelines, which inhibits their ability to think creatively and innovate (Raja & Murali, 2020; Simpeh, 2021). This shows that senior managers do not devote enough time to entrepreneurial activity, which calls the notion into question. Constant time pressure causes stress and burnout in middle managers, reducing productivity and increasing turnover (Raja & Murali, 2020). This suggests that the support anticipated of top managers is insufficient. Middle managers commonly oversee multiple projects with the same team, indicating inadequate time and resource management (Simpeh, 2021). This suggests that senior managers may not be properly managing time and resources, contrary to the hypothesis. The moderate time availability shows problems with time management and insufficient support for entrepreneurial activity. This shows that top managers should enhance their time and resource allocation to better support middle managers.

5.7 Prevalence of organisational boundaries

Organisational boundaries ensure employees are aware of their specific roles and responsibilities and that they are adhering to the common goal (Raja and Murali, 2020). Also, it helps employees cope with the fast-paced and dynamic nature of the construction industry (Simpeh, 2021). The construction industry is characterised by complex projects and multiple stakeholders which makes the management of projects difficult. In this complex and dynamic field, clear organisational boundaries can help reduce confusion and conflict among the employees, maintain a sense of stability and direction, and ensure that projects are completed on time and within budget (Raja & Murali, 2020; Simpeh, 2021; Yahaya, 2021).

In the case of this research study, the outcomes showed that the middle managers in the WC medium-sized construction companies are aware of their organisational boundaries. That is, they have clear-cut instructions on what to do with well-defined quality expectations within the stipulated time frame. Specifically, the findings indicate that the middle managers have a clear understanding of what is required of them regarding their job duties, performance standards, and the deadlines associated with each project. This is supported by the high mean score (refer to Figure 4.3) obtained in the questions related to work performance and expectation. Clearly-defined roles and responsibilities at the workplace decrease the level of stress, overwhelming, anxiety, and frustration among middle managers (Ogwueleka & Maritz, 2013).

In a nutshell, organisational boundaries are like borders within a workplace (Dumez and Jeunemaitre, 2010). The authors confirmed that organisational boundaries exist in medium-sized construction companies, but they do not create divisions among middle managers, rather, they foster, encourage, and support their entrepreneurial mindset.

The findings' implications highlight that while medium-sized construction enterprises in the Western Cape have set clear boundaries and objectives to assist operational efficiency, these frameworks may also limit the entrepreneurial activities required for long-term growth and competitiveness. To boost corporate entrepreneurship, these businesses could consider developing more flexible work environments that stimulate creativity, provide regular feedback, and allow employees to explore new ideas outside of traditional operating routines.

Hypothesis H5. Top managers within the medium-sized construction companies in the WC create necessary organisational boundaries that promote entrepreneurial behaviour for middle managers.

Middle managers have well-defined roles and precise instructions, which assist them comprehend their job responsibilities and performance expectations (Raja & Murali, 2020; Simpeh, 2021). This suggests that senior managers have successfully established organizational boundaries that encourage entrepreneurial action. Middle managers experience less stress, worry, and dissatisfaction when they have clear organizational boundaries (Ogwueleka and Maritz, 2013).

This transparency creates a more favorable atmosphere for entrepreneurial activities. Organizational boundaries promote and support an entrepreneurial spirit rather than dividing middle managers (Dumez & Jeunemaitre, 2010). This lends credence to the notion that top executives actively encourage entrepreneurial behavior. Clear boundaries facilitate efficient project management, ensuring that projects are finished on schedule and within budget (Raja & Murali, 2020; Simpeh, 2021; Yahaya, 2021). This efficiency enables middle managers to focus on new tasks, which supports the idea.

5.8 Reliability and scale descriptive statistics

The study's results indicate that among the various CE antecedents assessed, time availability shows the weakest internal consistency. However, the other CE antecedents demonstrate acceptable to excellent internal consistency values. This suggests that the respondents generally possess the necessary antecedents associated with corporate entrepreneurship (CE), except for time availability.

Baskaran et al. (2018) stress the importance of having enough time and resources to promote entrepreneurial activities. Middle managers believe that having access to sufficient resources and time is crucial for engaging in entrepreneurial endeavours. The actual and perceived availability of these

resources and time play a pivotal role in facilitating innovation and CE. Consequently, an organisation's ability to provide these resources and time is essential for successfully implementing CE.

This research specifically investigated how middle managers in the medium-sized construction companies in the WC perceive the availability of time. The objective was to ascertain whether these companies offer adequate resources and time, or if there is a deficiency from the middle managers' standpoint.

Through reliability testing, it was shown that the time availability lacks consistency and a robust structure. This suggests that the significance attributed to having ample time and resources for fostering entrepreneurial activities, as highlighted by Baskaran et al. (2018), may not be highly regarded by medium-sized construction companies in the WC. Consequently, middle managers perceive a shortage of available resources and/or time within these companies

5.9 Correlation between CE antecedents

The findings propose a weak relationship between work discretion and rewards and/or reinforcement. They also propose a very weak correlation, suggesting a lack of significance, between the rank order of time/resource and organisational boundaries.

These findings suggest that the medium-sized construction companies operating in the WC are engaging in CE antecedents, though some of these CE antecedents were found to need more attention than others. That is why studies have shown that medium-sized construction companies are lagging in CE because there is no balance in the CE antecedents. In this study, the entire range of CE antecedents need to have a significant relationship so that medium-sized construction companies in the WC can be seen to be participating in innovation as well.

5.10 Chapter summary

This chapter presented a discussion of the findings from the research data collected to examine CE in medium-sized construction companies in the WC, South Africa. The chapter examined each of the five CE antecedents, drawing from both academic literature and empirical data. The findings revealed that generally, WC medium-sized construction companies are in support of CE but there are areas where improvements are needed.

For example, while the level of CE support is commendable, more rewards and/or reinforcement could be made available for the entrepreneurially-minded middle managers who engage in entrepreneurial activities. Alluding to the rewards and/or reinforcement results, middle managers are experiencing challenges in the reward systems within medium-sized construction companies. While respondents suggested that some challenges were good for growth, and availability of time is necessary for production, they acknowledged that medium-sized construction companies in the WC operate in a fast-paced industry

and construction projects require more time. Additionally, to aid their success, top managers should allocate more time and resources to enable and encourage middle managers to work on more innovative projects.

The findings reflect that medium-sized construction company middle managers are operating within time constraints, which has a negative impact on their performance. It was therefore concluded that the reason medium-sized construction companies in the WC are facing difficulties in the adoption of CE antecedents is that they lack time management in their structure.

Organisational boundaries (OB) within the medium-sized construction industry, according to the findings, could be improved despite the current existence of OB. This could be done by providing more communication and feedback between the top managers and other managers such as middle managers.

Overall, the findings indicate that medium-sized construction companies in WC have great potential to be more innovative and competitive by improving their CE antecedents. So, by addressing the key areas of improvement identified, they could create a more supportive environment for the middle managers to engage in entrepreneurial activities.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The objectives of this study were to assess the existence and lack of CE antecedents within medium-sized construction companies operating in the Western Cape. To identify the gaps in adopting CE, which assists in implementing innovation within medium-sized companies in the construction industry, the researcher diagnosed the CE antecedents.

6.2 Hypothesis testing

H1. Top managers of medium-sized construction companies in the WC support middle managers' entrepreneurial spirit.

The study found that more than 59% of middle managers were encouraged to develop ideas for the improvement of the corporation. Impliedly, top managers within the medium-sized construction companies moderately support their middle managers' ideas. Therefore, the hypothesis that top managers of medium-sized construction companies in the WC support middle managers' entrepreneurial spirit is accepted.

H2. Top managers grant work discretion to the middle managers for them to participate in the entrepreneurial initiative within the medium-sized construction companies in the WC.

The survey results regarding the work discretion factor in CE revealed that most respondents (67%) felt that their organisation gave them opportunities to use their skills. However, a smaller group (38%) (Refer to Table 4.5) agreed that they had a lot of independence in decision-making without someone else double-checking their choices. In summary, it was observed that medium-sized construction companies in the WC exercise some degree of autonomy for middle managers to engage in their job activities using their abilities. Hence, the findings supported or accepted the hypothesis.

H3. Top managers provide middle managers with rewards and/or reinforcements to improve their entrepreneurial behaviour within medium-sized construction companies in the WC.

The analysis of rewards in the study revealed that a significant majority of respondents (87%) reported that they encountered numerous challenges in their jobs. Among these challenges, poor reward systems were identified as a significant issue that middle managers often wrestled with.

In line with these findings, the literature reviewed emphasised that job challenges encompass difficulties and motivations encountered in work settings where individuals are faced with problems to solve and decisions to make in situations characterised by a high degree of risk and uncertainty. This insight sheds light on the nature of the challenges faced by managers in these construction companies.

Therefore, the hypothesis that top managers provide middle managers' rewards and/or reinforcements to improve their entrepreneurial behaviour within the medium-sized construction companies in the WC is rejected based on the research findings.

H4: In the WC, medium-sized construction companies' top managers make time and resources available to middle managers to behave entrepreneurially.

It was found that most middle managers (73%) often work with time constraints in their jobs. Most medium-sized construction companies operating in the WC carry out around four to six projects at the same time using the same workforce, and those projects need to be completed within the agreed project times and budgets. Therefore, with limited time it is not possible for middle managers to complete their jobs on time and within the budget. Based on this finding, the hypothesis that in WC medium-sized construction companies, top managers make time and resources available to middle managers to behave entrepreneurially is rejected.

H5. Top managers within the medium-sized construction companies in the WC create necessary organisational boundaries that promote entrepreneurial behaviour for middle managers.

Top managers within the medium-sized construction companies in the WC understand the impact of a conducive environment through clear expectations and/or communication with their middle managers, making them understand clearly what is expected so that they can perform accordingly with no confusion. It was found that creating necessary organisation boundaries, for example, is not just a furnished office space with air conditioning and lights but a space where middle managers feel valued and trusted to do their work. Therefore, the hypothesis that top managers within the medium-sized construction companies in the WC create necessary organisational boundaries that promote entrepreneurial behaviour for middle managers is accepted.

6.3 Overview of the study

This research investigated the corporate entrepreneurship (CE) antecedents of medium-sized construction companies in the Western Cape, South Africa. The investigation was conducted against the backdrop of five CE antecedents including management support, work discretion, resource/time availability, rewards and/ reinforcement, and organisation boundaries. To address the research problem that sought to determine if medium-sized construction companies operating in the WC Province of South Africa have CE antecedents and to what extent they practice CE, the below-stated objectives were explored:

- Investigate the managerial support that influences middle managers' entrepreneurial spirit within medium-sized construction companies.

- Determine the extent of work discretion given to middle managers by top managers of medium-sized construction firms to behave entrepreneurially.
- Assess the existence of rewards and reinforcement given to middle managers of medium-sized construction companies by top managers to improve their entrepreneurial behaviour.
- Identify the availability of time and freedom available to middle managers to behave entrepreneurially within medium-sized construction companies in the WC.
- Investigate organisational boundaries that promote entrepreneurial behaviour within medium-sized construction companies in the WC for middle managers.

The findings revealed that generally, top management within the medium-sized construction companies in the WC are in support of CE, but there are areas where improvements are needed. For example, while the level of CE support is commendable, more rewards and/or reinforcement should be provided for the entrepreneurially-minded middle managers who engage in entrepreneurial activities. Alluding to the rewards and/or reinforcement results, middle managers are experiencing challenges in the reward systems within medium-sized construction companies. While respondents suggested that some challenges were good for growth and availability of time is necessary for production, they acknowledged that medium-sized construction companies in the WC operate in a fast-paced industry and construction projects require more time. Additionally, to aid their success, top managers should allocate/provide more time and or resources to enable and encourage middle managers to work on more innovative projects.

The findings reflected that medium-sized construction companies' middle managers are operating within time constraints, and that has a negative impact on their performance. It was therefore concluded that the reason medium-sized construction companies in the WC are facing difficulties in the adoption of CE antecedents is that they lack time management in their structure.

Organisational boundaries (OB) within the medium-sized construction industry according to the findings, could be improved despite the current existence of OB. This could be done by providing more communication and feedback between the top managers and other employees such as middle managers.

Overall, the findings indicate that medium-sized construction companies in WC have great potential to be more innovative and competitive by improving their CE antecedents. So, by addressing the key areas of improvement identified, they can create a more supportive environment for the employees such as middle managers to engage in entrepreneurial activities.

6.3.1 Addressing research questions

- Research question 1: Investigate the managerial support that influences middle managers' entrepreneurial spirit within medium-sized construction companies.

Achieved: According to the study, more than 59% of middle managers were encouraged to generate ideas for corporate change. This suggests that top managers modestly promote the entrepreneurial spirit of intermediate managers, which meets the goal of researching managerial support.

- Research question 2 : Determine the extent of work discretion given to middle managers by top managers of medium-sized construction firms to behave entrepreneurially.

  Partially Achieved: The findings revealed that while 67% of respondents believed they had the opportunity to use their expertise, just 38% thought they had sufficient autonomy in decision-making. While there is some degree of job discretion, it is limited, hence the goal was only partially realized because full autonomy is not frequently offered***.***

- Research question 3: Assess the existence of rewards and reinforcement given to middle managers of medium-sized construction companies by top managers to improve employee entrepreneurial behaviour.

  Not Achieved: The study discovered considerable issues in the reward systems, with 87% of respondents reporting unsatisfactory reward systems. The lack of appropriate rewards and reinforcement indicates that this goal was not reached.

- Research question4 : Identify the availability of time and freedom available to middle managers to behave entrepreneurially within medium-sized construction companies in the WC.

  Not Achieved: According to the research, 73% of middle managers had time constraints at work, which restricted their capacity to take on entrepreneurial endeavour's. Consequently, the goal of determining appropriate time and freedom was not accomplished***.***

- Research question 5: Investigate organisational boundaries that promote entrepreneurial behaviour within medium-sized construction companies in the WC for middle managers.

  Achieved: According to the study, top managers understood the value of creating a positive workplace with clear expectations and communication. While organizational boundaries may be strengthened, the current structure encourages entrepreneurial behaviour, thereby attaining this goal.

6.4 Limitations

Throughout the research, the researcher encountered various limitations while collecting information from the selected participating companies.

The research encountered challenges in collecting data due to slow response rate and limited or slow participation from the medium-sized construction companies. Some participating companies were slow to respond or provided a limited number of participants, making it difficult to access the key personnel within the companies. This delayed the data collection process by an extra month. This led to adjustment of the initial number of companied proposed to enable in-depth study of the phenomena under investigation.

Additionally, COVID-19 pandemic restrictions prevented the planned face-to-face data collection, consequently affecting the proposed research methodology. Due to this, the researcher shifted to utilising online surveys through Google Forms. Even with this adjustment, slow response rate persisted, leading to a slow average response rate of two weeks.

Furthermore, due to confidentiality issues during assessment and auditing of CE antecedents, resistance was encountered from the participating companies which further delayed the whole processes of data collection.

6.5 Recommendations

Following the challenges and limitations encountered during the research, the following recommendations are made so that this research could be taken further to accommodate the limitations. The recommendation is given in two parts: 1) for further research for academics, 2) for industry practitioners:

Further research

This research only explored the existence or absence of CE antecedents in medium-sized companies in the WC, SA. It did not go deep into the effects of CE on some important factors that ensure a company's competitiveness like innovation. Further research should be conducted to determine the impact of CE on the innovation and competitiveness of these medium-sized companies.

A more equitable evaluation system that is accessible, affordable, and tailored to the specific needs of medium-sized companies should be developed for corporate entrepreneurship (CE) antecedents.

The construction industry is well known to engage constantly in high tender competition, tender adjudication scoring, fraud, limited client specifications, and variation orders. And amidst their struggles of design errors which cannot be completely avoided, the adoption of CE can be implemented by the medium-sized construction companies that want to be competitively advantageous. Therefore, further research could be conducted to determine how medium-sized construction companies in the WC can be assisted concerning the adoption of CE.

Industrial practitioners/Improve CE among construction firms in SA

Medium-sized construction companies operating in the WC need to establish a reward system that can assist all parties involved, employer and employee alike, because both these parties have their agendas, and those agendas need to be met equally for the organisation to be innovative.

Performance review is part of work motivation when it is rendered correctly and sensitively to the reviewee. Workers want to know how they are doing in their work and being given feedback constantly or quarterly might increase their entrepreneurial spirit.

Time is essential for everyone, all of us want to have time, and seemingly we all cannot have enough. Perhaps medium-sized construction companies could start drafting ways that can help improve their manager's time and workload and seek feedback or suggestions in such matters from their employees. Often employees are left behind in the planning stages, but they are supposed to be involved because they are the ones who often work with time.

Autonomy is one of the substances of growth, if medium-sized construction companies want to see their managers (top, middle, and operating) prosper, they should willingly give their managers the freedom to do their work. With autonomy, employees can learn and find new methods that can suitably work for them and that is how they learn from their mistakes.

Risk-taking is one of the five dimensions of entrepreneurial orientation. Risk-taking is the tendency to take bold action rather than being conscious or afraid. It is considered one of the key factors that can be identified in the initial stages before embarking on a new opportunity. Medium-sized construction companies that want to grow in their businesses should encourage risk-taking amongst their employees. Risk-taking is one of the best qualities for the employee and the organisation at large.

Medium-sized construction companies in the WC should ensure that they value their human resources and ensure that they are happy within the organisation, because without the happiness of the human resources, there would be no innovation.

Framework for Enhancing Corporate Entrepreneurship in Medium-Sized Construction Companies

The multi-dimensional framework outlined below is proposed to develop a more entrepreneurial atmosphere in South African medium-sized construction enterprises. It focuses on the major CE antecedents, providing practical solutions to enhance industrial innovation, autonomy, and risk-taking.

Managerial support enhancement

Action: Create formalized programs for ongoing management support, such as weekly ideation meetings and leadership coaching for middle managers.
Objective: Ensure that top managers actively encourage middle managers' entrepreneurial activities by offering more direct and visible support in the form of feedback and professional development opportunities.

Increase work discretion and autonomy.

Action: Give middle managers more decision-making ability, reduce micromanagement, and set clear regulations that define when autonomy is anticipated.
Objective: Foster a culture of trust in which middle managers can experiment with new ideas and make decisions without continual supervision, so encouraging innovation.

Revamp Reward & Incentive Systems

Implement performance-based compensation systems to encourage entrepreneurial behavior, such as money incentives, promotions, and non-monetary recognition for creative contributions.

Objective: Encourage entrepreneurial endeavour's by directly linking rewards to innovation outcomes and contributions to business success.

Set aside more time and resources for entrepreneurial activities.

Action: Make sure that middle managers have enough time and resources to focus on entrepreneurial ventures, perhaps by lowering project loads or delegating routine work.

Objective: Free up middle managers' time so that they can engage in creative problem-solving and innovation without being bound by tight project deadlines.

Strengthen organizational boundaries and communication.

Action: Enhance internal communication channels to promote clear, two-way communication between top and middle management on expectations, feedback, and goals.

Objective: Create a transparent organizational climate in which boundaries encourage rather than constrain entrepreneurial behaviour and collaboration.

6.6 Conclusion

This study examined the antecedents of corporate entrepreneurship (CE) among medium-sized construction enterprises in the Western Cape. The findings found that, while top management moderately supports entrepreneurial activities, considerable gaps exist in critical areas. Middle managers have limited job discretion and get inadequate compensation, with 87% reporting weak reward schemes. Time constraints also limit their ability to participate in creative projects. However, organizational boundaries are generally clear and helpful, although communication has to be improved. Overall, these businesses have the potential for greater innovation, but critical issues such as rewards, autonomy, and time management must be addressed.

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APPENDICES

APPENDIX A – QUESTIONNAIRE

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This research study is titled "**An assessment of Corporate Entrepreneurship Antecedents Within Medium-sized Construction Companies in the Western Cape**"

Corporate Entrepreneurship Antecedents

The Five factors:

Top management support,

Work discretion/autonomy,

Rewards/reinforcement,

Time availability, and

Organisational boundaries.

Closed-ended questionnaire

Please help me to assess your organisation by participating in completing the survey by **Ticking One** of the following:

Strongly disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, Strongly agree = 5

Also, before starting with answering the questionnaires below, please indicate the age group below:

20 – 30 years ☐

31 – 40 years ☐

☐

40 years +

Factor 1: Top management support

No	Statement	1.Strongly disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly agree
1	My organisation is quick to use improved work methods.					
2	My organisation is quick to use improved work methods that are developed by workers.					
3	In my organisation, developing one's own ideas is encouraged for the improvement of the corporation.					
4	Upper management is aware and very receptive to my ideas and suggestions.					
5	A promotion usually follows from the development of new and innovative ideas.					
6	Those employees who come up with innovative ideas on their own often receive management encouragement for their activities.					
7	The "doers on projects " are allowed to make decisions without going through elaborate justification and approval procedures.					
8	Senior managers encourage innovators to bend rules and rigid procedures to keep promising ideas on track.					

9	Many top managers have been known for their experience with the innovation process.					
10	Money is often available to get new project ideas off the ground.					
11	Individuals with successful innovative projects receive additional rewards and compensation beyond the standard reward system for their ideas and efforts.					
12	There are several options within the organisation for individuals to get financial support for their innovative projects and ideas.					
13	People are often encouraged to take calculated risks with ideas around here.					
14	Individual risk-takers are often recognised for their willingness to champion new projects, whether eventually successful or not.					
15	The term “risk-taker” is considered a positive attribute for people in my work area.					
16	This organisation supports many small and experimental projects, realising that some will undoubtedly fail.					
17	An employee with a good idea is often given free time to develop that idea.					
18	There is considerable desire among people in the organisation for generating new ideas without regard for crossing departmental or functional boundaries.					
19	People are encouraged to talk to employees in other departments of this organisation about ideas for new projects.					

Factor 2: Work discretion

No	Statement	1.Strongly disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly agree
20	I feel that I am my boss and do not have to double-check all of my decisions with someone else.					
21	Harsh criticism and punishment result from mistakes made on the job.					
22	This organisation provides the chance to be creative and try my own methods of doing the job.					
23	This organisation provides the freedom to use my own judgement.					
24	This organisation provides the chances to do something that makes use of my abilities.					
25	I have the freedom to decide what I do on my job.					
26	It is basically my own responsibility to decide how my job gets done.					
27	I almost always get to decide what I do on my job.					
28	I have much autonomy on my job and am left on my own to do my own work.					
29	I seldom have to follow the same work methods or steps for doing my major tasks from day to day.					

Factor 3: Rewards/reinforcement

No	Statement	1.Strongly disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly agree

30	My manager helps me get my work done by removing obstacles and roadblocks.					
31	The rewards I receive are dependent upon my innovation on the job.					
32	My supervisor will increases my job responsibilities if I am performing well in my job					
33	My supervisor will give me special recognition if my work performance is especially good.					
34	My manager would tell his/her boss if my work was outstanding.					
35	There is a lot of challenge in my job.					

Factor 4: Time availability

No	Statement	1.Strongly disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly agree
36	During the past three months, my workload kept me from spending time on developing new ideas.					
37	I always seem to have plenty of time to get everything done.					
38	I have just the right amount of time and workload to do everything well.					
39	My job is structured so that I have very little time to think about wider organisational problems.					
40	I feel that I am always working with time constraints on my job.					

41	My co-workers and I always find time for long-term problem solving.					

Factor 5: organisational boundaries

No	Statement	1.Strongly disagree	2. Disagree	3.Neutral	4.Agree	5.Strongly agree
42	In the past three months, I have always followed standard operating procedures or practices to do my major tasks.					
43	There are many written rules and procedures that exist for doing my major tasks.					
44	On my job I have no doubt of what is expected of me.					
45	There is little uncertainty in my job.					
46	During the past year, my immediate supervisor discussed my work performance with me frequently.					
47	My job description clearly specifies the standards of performance on which my job is evaluated.					
48	I clearly know what level of work performance is expected from me in terms of amount, quality, and timelines of output.					

APPENDIX B

RESPONSE RECORDS

Corporate Entrepreneurship Instrument (CEAI)

The standard questions are taken from the Corporate Entrepreneurship Assessment Instrument (CEAI) (Mcarthur et al., 2012). CEAI is a tool that indicates firms capabilities to take on the CE process. This tool helps the firm to show clearly the areas of the internal work environment to be focused on the development of effort (Kuratko et al., 2014).

Five organisational factos are measurable to review whether the organisational culture is in support (or not) of Corporate Entrepreneurship (CE).

The Five factors:

1. Top management support,
2. Work discretion/autonomy,
3. Rewards/reinforcement,
4. Time Availability, and
5. Organizational boundaries.

Closed-ended questions

The close-ended questions are in a form of a statement. The Likert survey system will be used for this study to help the participants. According to A.Barua (2013), the Likert scale is a psychometric scale commonly involved in research based on survey questionnaires. Here, the respondents will specify their level of agreement or disagreement on a symmetric agree-disagree scale for a series of statements while responding to a Likert questionnaire item. The range of the Likert scale helps to capture the intensity of their feelings for a given item.

Please help me to assess your organisation by participating in completing the survey by **Ticking One** of the following :

Strongly disagree = 1 , Disagree = 2, Neutral = 3, Agree = 4 , Strongly agree = 5

Also, before starting with answering the questionnaires below, please indicate the age group below:

1. 20 - 30 years ☐
2. 31 – 40 years ☐
3. 40 or older ✓

Factor 1: Top magement support

No	Statement	1.Strongly disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly agree
1	My organization is quick to use improved work methods.		X			
2	My organization is quick to use improved work methods that are developed by workers.		X			
3	In my organization, developing one's own ideas is encouraged for the improvement of the corporation.				X	
4	Upper management is aware and very receptive to my ideas and suggestions.				X	
5	A promotion usually follows from the development of new and innovative ideas.			X		
6	Those employees who come up with innovative ideas on their own often receive management encouragement for their activities.				X	
7	The "doers on projects " are allowed to make decisions without going through elaborate justification and approval procedures.				X	
8	Senior managers encourage innovators to bend rules and rigid procedures to keep promising ideas on track.				X	
9	Many top managers have been known for their experience with the innovation process.				X	
10	Money is often available to get new project ideas off the ground.			X		
11	Individuals with successful innovative projects receive additional rewards and compensation beyond the standard reward system for their ideas and efforts.		X			
12	There are several options within the organization for the individuals to get financial support for their innovative projects and ideas.			X		
13	People are often encouraged to take calculated risks with ideas around here.				X	
14	Individual risk-takers are often recognized for their willingness to champion new projects, whether eventually successful or not.				X	
15	The term "risk-taker" is considered a positive attribute for people in my work area.			X		
16	This organization supports many small and experimental projects, realizing that some will undoubtedly fail.			X		
17	An employee with a good idea is often given free time to develop that idea.			X		
18	There is considerable desire among people in the organization for generating new ideas without regard for crossing departmental or functional boundaries.		X			
19	People are encouraged to talk to employees in other departments of this organization about ideas for new projects.				X	

Factor 2: Work discretion

No	Statement	1.Strongly disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly agree
20	I feel that I am my boss and do not have to double-check all of my decisions with someone else.				X	
21	Harsh criticism and punishment result from mistakes made on the job.				X	
22	This organization provides the chance to be creative and try my own methods of doing the job.				X	
23	This organization provides the freedom to use my own judgement.				X	
24	This organization provides the chances to do something that makes use of my abilities.				X	
25	I have the freedom to decide what I do on my job.				X	
26	It is basically my own responsibility to decide how my job gets done.				X	
27	I almost always get to decide what I do on my job.			X		
28	I have much autonomy on my job and am left on my own to do my own work.				X	
29	I seldom have to follow the same work methods or steps for doing my major tasks from day to day.		X			

Factor 3: Rewards/reinforcement

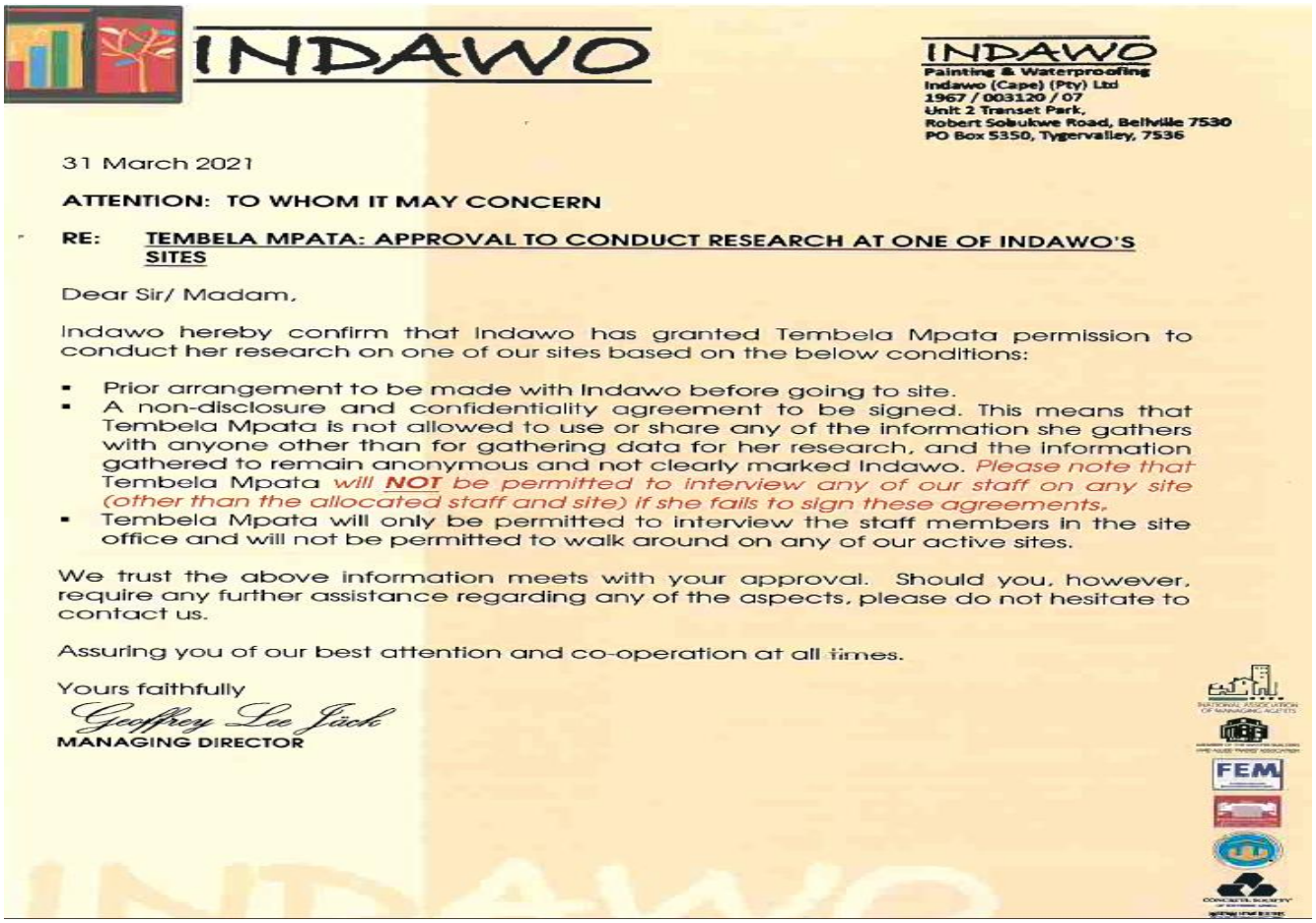
No	Statement	1.Strongly disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly agree
30	My manager helps me get my work done by removing obstacles and roadblocks.				X	
31	The rewards I receive are dependent upon my innovation on the job.			X		
32	My supervisor will increases my job responsibilities if I am performing well in my job				X	
33	My supervisor will give me special recognition if my work performance is especially good.				X	
34	My manager would tell his/her boss if my work was outstanding.				X	
35	There is a lot of challenge in my job.			X		

Factor 4: Time availability

No	Statement	1.Strongly disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly agree
36	During the past three months, my workload kept me from spending time on developing new ideas.		X			
37	I always seem to have plenty of time to get everything done.			X		
38	I have just the right amount of time and workload to do everything well.				X	
39	My job is structured so that I have very little time to think about wider organizational problems.		X			
40	I feel that I am always working with time constraints on my job.				X	
41	My co-workers and I always find time for long-term problem solving.			X		

APPENDIX C

LETTER FROM PARTICIPANTS



INDAWO

INDAWO
Painting & Waterproofing
Indawo (Cape) (Pty) Ltd
1967 / 003120 / 07
Unit 2 Transet Park,
Robert Sobukwe Road, Bellville 7530
PO Box 5350, Tygervalley, 7536

31 March 2021

ATTENTION: TO WHOM IT MAY CONCERN

RE: TEMBELA MPATA: APPROVAL TO CONDUCT RESEARCH AT ONE OF INDAWO'S SITES

Dear Sir/ Madam,

Indawo hereby confirm that Indawo has granted Tembela Mpata permission to conduct her research on one of our sites based on the below conditions:

- Prior arrangement to be made with Indawo before going to site.
- A non-disclosure and confidentiality agreement to be signed. This means that Tembela Mpata is not allowed to use or share any of the information she gathers with anyone other than for gathering data for her research, and the information gathered to remain anonymous and not clearly marked Indawo. *Please note that Tembela Mpata will **NOT** be permitted to interview any of our staff on any site (other than the allocated staff and site) if she fails to sign these agreements.*
- Tembela Mpata will only be permitted to interview the staff members in the site office and will not be permitted to walk around on any of our active sites.

We trust the above information meets with your approval. Should you, however, require any further assistance regarding any of the aspects, please do not hesitate to contact us.

Assuring you of our best attention and co-operation at all times.

Yours faithfully

Geoffrey Lee Jack

MANAGING DIRECTOR

Permission Letter for Research

To

Tembela Mpata

Research student

Cape Peninsula University of Technology

Symphony way

Bellville

7535

16th March 2021

Subject: Permission for researching Power Group Construction Company

Dear Mrs Tembela Mpata

I am pleased to inform you that I give you permission in respect of your request in Assessing Corporate Entrepreneurship capabilities within Power group construction companies in WC. The survey will cover five internal environmental factors.

1). Top management support. 2). Work discretion. 3). Rewards and reinforcement. 4). Resource availability. 5). Organisational boundaries factors. Your initiative is appreciative and Power group construction is ready to support this research.

In assisting with this research, I will only ask members of the HR Team and our Site Engineers to assist.

Please contact us if there is anything that we can do more for you.

Thanks and Regards

Winnie De Pass

HR Manager

Power Group

Email Address: wdepass@powergrp.co.za

Tel: +27 21 907 1300 | Direct: +27 21 907 1458

Signature : W de Pass

W.M. De Pass