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Determinants of intrapreneurial performance within the banking industry in South Africa

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A research report submitted to the Faculty of Commerce, Law and Management, University of Witwatersrand, in fulfilment of the requirements for the degree, Doctor of Philosophy

Supervisor B Urban

Wits Business School

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ABSTRACT

The ability for large corporates to remain competitive and grow ahead of the market in an era that has been defined by globalisation, the fourth industrial revolution, and more recently the COVID-19 pandemic has become increasingly difficult. Therefore, it is a critical imperative for organisations to develop a new capability that equips them to navigate the turbulent global macro-economic environment and complex business markets successfully.

Globally, banks have experienced severe pressure to transform their business models from capital intense businesses into revenue diversification drivers through new fee-based services. Investors are leaning towards new generation banking models that serve customers holistically, intuitively, and better by employing “new age” technology solutions, as profitability levels within global banks have slipped below the cost of shareholder equity.

Coupled with the reality on the ground pre-2020, COVID-19 has become a watershed transformation moment for banks. It has accelerated many long-term banking trends that have resulted in customer shifts in relation to their needs, behaviours and expectations and has subsequently impacted their recovery performance. As such, African banks need to pivot their focus towards growth and relevance by ensuring the establishment of a fundamentally different business model that provides integrated digital ecosystem solutions that go beyond traditional banking, and offer to ensure market competitiveness.

Corporate entrepreneurship is a strategic capability that enables organisations to embed innovation as a core competency and simultaneously engage in explorative and exploitative activities, which are essential thrusts in the strategic renewal of a company.

This research study enriched the domain of corporate entrepreneurship by deepening the understanding of the mechanisms that underpin the corporate entrepreneurial embedment process, within a dynamic complex organisational setting. This was through the development of a core embedment capability model

of corporate entrepreneurship that predicts the value drivers of corporate entrepreneurial performance and explores the contextual corporate entrepreneurship nuances attributed to banking corporations domiciled in Africa.

This study importantly furthered contextual setting theory development and shed light over the heterogeneity of corporate entrepreneurship, which arose due to an idiosyncratic corporate entrepreneurship embedment process. This process consists of institutional path dependencies that resulted from gradations in the macro, meso, and micro layers.

The model and theories emanating from this study not only aimed to bridge the research gap by exploring the dynamic complexity of corporate entrepreneurship, but also assessed the knowledge transfer of market intelligence into corporate entrepreneurial performance, and the significance of network ties in developing countries as an influencer of corporate entrepreneurial activity.

In this research study, the levels of corporate entrepreneurship within the financial services sector of companies domiciled in South Africa were analysed to determine the quantum of influence that organisational, individual, and environmental antecedent factors have as predictors of corporate entrepreneurial performance. This was a precursor to crafting an embedment capability model that would enable financial services organisations to embed a corporate entrepreneurial ecosystem systematically, and enable effective and agile corporate entrepreneurial transformation.

The research purpose was achieved by employing a three-prong approach. First, a configurational method was applied to existing literature to consolidate prevailing theories and to integrate existing models and frameworks as a basis of the proposed theoretical model. Second, the theoretical model was empirically tested using partial least squares structured equation modelling (PLS-SEM) to validate the model and to establish causal relational influence among the three different sets of antecedent variables. This would determine their quantum of impact on corporate entrepreneurial performance. Finally, an optimal configuration was proposed as a premise to describe and predict corporate entrepreneurial performance as a function of system thinking.

The empirical evidence from this study validated that the most significant transformational driver of corporate entrepreneurial activity within incumbents remained organisational antecedents and entrepreneurial corporate strategy as the bedrock of a corporate entrepreneurial embedment ecosystem. Its singular effect on corporate entrepreneurial activity was circa five times larger than any other predictor within the corporate entrepreneurial embedment ecosystem. This was flanked equally by employee enablement of the corporate entrepreneurial strategy and the execution of the corporate entrepreneurial strategy. Employee enablement consisted of two supporting predictors, namely, the decisions and behaviours of transformation leaders, and the entrepreneurial cognitive horsepower of employees to develop initiatives and formulate strategic plans that enable the delivery of the corporate entrepreneurial strategy. Strategy execution encompassed two underpinning predictors, namely, the implementation of an organic organisational structure and the deployment of novel resource recipes to build new capabilities and adjacent capabilities to a firm's core offering.

Considering the nuances in the African operating environment, both macro level antecedents and network ties were deemed non-significant direct value drivers of corporate entrepreneurial performance within African banks.

DECLARATION

I, Thanusha Govender, declare that this research report is my own work, except as indicated in the references and acknowledgements. It is submitted in fulfilment of the requirements for the degree of Doctor of Philosophy. It has not been submitted before, in whole or part, for any degree at any university or tertiary education institution.



_____

Thanusha Govender

Signed at Sandton

On the 6th day of December 2022

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“It always seems impossible until it is done” Nelson Mandela.

A true story of my PhD journey:

A journey that would not have been possible without the love and support of my darling husband and daughter. Thank you for being my true north and believing in me.

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“I stand on the shoulders of giants” Isaac Newton.

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1 INTRODUCTION

Entrepreneurship generates economic value and surges a country's global competitiveness, where increased entrepreneurship activity levels within a country is seen as a vital opportunity to unlock job creation, encourage economic development, increase levels of innovation, and enhance capabilities within a country (Bosma, Hill, Ionescu-Somers, Kelley, Guerrero & Schott, 2021; Doran, McCarthy & Connor, 2021). Economist, Schumpeter (1934), was the founding father in latent research, to contextualise the importance of entrepreneurship in economic markets and theorised the importance of entrepreneurship in driving sustainable economic development. Schumpeter (1934) equally postulated that entrepreneurship is not restricted to the domain of start-up firms but rather it is the creative disruption of markets and the strategic renewal of incumbents through innovation.

Extant research has strongly supported Schumpeter's (1934) interpretation of entrepreneurship along with the notion that entrepreneurship is not only an ideology that is reserved for new venture business but rather a business and economic philosophy that can be applied across an array of businesses regardless of tenure, size, or revenue output and is both industry and continent agnostic. Entrepreneurship fundamentally challenges the status quo thinking and creates a paradigm shift in mind-sets and behaviours, which drives transformational, change within organisations but equally produces disruptive change within business markets (Brown, Davidsson & Wiklund, 2001; Kuratko & Morris, 2018).

The operating context for businesses has become significantly more resource constrained, COVID-19 set into motion an emergence of new customer needs and behavioural patterns, which has compounded the situation that has developed over the last two decades, where the business world has simultaneously had to navigate aggressive market dynamics due to globalisation and hyper-competition (McKinsey, 2021b). The operating business landscape has created a trigger or precipitating event for incumbents to shift their operating system from that of a

traditional corporate firm to one that is entrepreneurial in nature to futureproof their businesses. The relevance and sustainability of corporate firms will be premised on the capability of businesses to become highly responsive to market needs (Herbert & Brazeal, 1998, Popowska, 2020).

Companies need to transcend their current spectrum of organisational competencies, to building and strengthening capabilities that hinge on transformative business practices of concurrently exhibiting an ambidextrous competency of executing both advantage-seeking and opportunity-seeking behaviours (Shepherd & Krueger, 2002).

Scholars have operationalised the concept of intrapreneurship or corporate entrepreneurship as entrepreneurial behaviour or practices within organisations. Antoncic and Hisrich (2003, p. 518) described corporate entrepreneurship as "entrepreneurial activities and orientations in an established organisation, which is one important aspect of organisational and economic development, as well as, wealth creation".

Burgelman's (1984, p. 154) view, provided a different perspective, suggesting that corporate entrepreneurship is "extending the firm's domain of competence and corresponding opportunity set through internally generated new resource combinations". Both perspectives confirm broadly that corporate entrepreneurship is a company differentiator and operating system of an organisation that leverages its internal resources and builds competencies that enable incumbents to engage in explorative and exploitative behaviours.

Instrumental philosophers in the domain of corporate entrepreneurship, Covin and Slevin (1991) described corporate entrepreneurship as a posture or firm-level behaviour of an organisation where an incumbent has three key strengths that enable companies to achieve sustained entrepreneurial behaviour. First, this includes the ability to be comfortable in risk-taking practices and not to naturally default to a more conservative risk appetite. Second, a proactive proclivity towards the exploration of new opportunities; and finally, the exploitation of opportunities employing innovation as a crucial competency. The model equally posits that entrepreneurial behaviour permeates through all organisational levels of a

company and is a dominant philosophy of the chief executive officer (CEO) and top-level management of a firm.

In light of the business necessity and environmental imperative for traditional corporates to re-invent their business model in order to remain competitive and relevant through business and economic cycles, the stimulus for corporate entrepreneurship activity has become a focus for researchers. It provides companies with the competency framework and organisational methodology required to achieve corporate entrepreneurial performance (Dyduch & Bratnicki, 2018).

According to Kuratko and Audretsch (2013), corporate entrepreneurship is considered a highly effective capability to achieve superior echelons of organisational performance over sustained financial year periods through establishing market competitive advantages that drive the profitable growth of a company. Consistently, empirical research has validated that corporate entrepreneurial performance leads to organisational performance (Ahmed, Umrani, Zaman, Rajput, & Aziz, 2020).

Given the importance of corporate entrepreneurial performance as a wealth creation lever for a company, the ability to successfully develop and embed the value drivers of corporate entrepreneurial performance within an organisation is critical to enable organisations to realise the benefit of corporate entrepreneurship (Sakhdari, 2016).

The studies conducted by Covin and Slevin (1991), Guth and Ginsberg (1990), Ireland, Covin and Kuratko (2009), and Kuratko, Ireland and Hornsby (2004) have converged theoretically on the deduction that the degrees of corporate entrepreneurial behaviour exerted by an organisation is encouraged or stifled based on the multiplier effect of a series of factors acting upon an organisational system across three macro-level theoretical domains namely, organisational factors, environmental triggers, and individual-level motivation and behaviour.

Research studies have equally identified a broad array of micro-level theoretical domains and antecedent variables that drive entrepreneurial, firm-level behaviour, concurring with the ideology that corporate entrepreneurship is a multi-

dimensional construct, given that a spectrum of influences simultaneously create an intrapreneurial system that works harmoniously to drive entrepreneurial outcomes. Research has synthesised that individual level behaviour, organisational level behaviour, and the external environment play an active role in achieving corporate entrepreneurial output (Covin & Slevin, 1991, Bloodgood, Hornsby, Burkemper & Sarooghi, 2015).

Regardless of the convergence of a sub-section of extant research on corporate entrepreneurship being a multi-dimensional construct, given that the corporate entrepreneurship research domain is relatively young facet of research and not fully explored; definitional issues still plague this domain of research. Based on a critical study of literature, a cohort of scholars remain, who provide a strong argument for corporate entrepreneurship being a unitary construct (Kuratko & Audretsch, 2013; Popowska, 2020).

However, even among the research studies that have concluded on the multiplicity causal effect of corporate entrepreneurship, limited inroads have been made to identify the spectrum of dimensions that enable the creation of a sustainable corporate entrepreneurial ecosystem and influence corporate entrepreneurship behaviour within firms. More importantly, their inter-relatedness to one another and the correlations and effects of each dimensional construct on firm performance required confirmation (Kuratko & Audretsch, 2013).

Scholars have progressed studies that have isolated certain antecedent sets and their corporate entrepreneurial association; however, empirically tested integrated studies that explore the embedment model of corporate entrepreneurship and predict the value drivers of corporate entrepreneurial performance would enrich the body of knowledge by furthering the development of a fine-grained model and associated theories. The research benefit from this study was not restricted to academia but extrapolated to business. Likewise, the model coupled with the associated theories could be leveraged by corporate executives to formulate actions that systematically spur corporate entrepreneurship performance and create novel value to economies through the “thoughtful and productive assemblage of resources” (Covin & Slevin, 1991, p. 21).

The model and theories emanating from this study not only aimed to bridge the research gap by exploring the dynamic complexity of corporate entrepreneurship and the contextual nuances attributed to banking corporations domiciled in Africa, but also explored the entrepreneurial embedment process within an incumbent's organisational setting. This enabled the development of the corporate entrepreneurial embedment capability model and the corporate entrepreneurship ecosystem predictive framework (Demirkan, Yang, & Jiang, 2019; Sakhdari, 2016).

Coupled with these research objectives, given that corporate entrepreneurship does not develop within an organisational vacuum, the knowledge transfer process of market intelligence into corporate entrepreneurial performance and the significance of network ties in developing countries as an influencer of corporate entrepreneurial activity was likewise explored (Zahra, 2015).

Given the relationship between corporate entrepreneurial performance and organisational performance, similarly, the benefit of this research study extended to businesses. The embedment capability model and predictive framework could enable executives to implement corporate entrepreneurship effectively in a resource constrained operating environment to maximise impact over the short to medium term. Equally, since entrepreneurship is a behavioural phenomenon, employee attributes that are value drivers of corporate entrepreneurial performance could be nurtured to achieve the desired entrepreneurial outcome by encouraging some and discouraging other behavioural actions.

1.1 Theoretical Background to the Study

The overarching theoretical basis for this research study was complex dynamic system's theory, which is leveraged as a framework for conceptualising the corporate entrepreneurial embedment process. This process is underpinned by a set of complex and interrelated variables from multiple theoretical knowledge domains and which captures the "complexity of social reality" (Kraus, Kauranen & Reschke, 2011, p. 61). The development configuration approach (Harms, Kraus & Schwarz, 2009) was harnessed to critically analyse extant corporate

entrepreneurial research and create a theoretical model of the corporate entrepreneurial embedment process. The conceptual model not only evaluated dependencies, but equally evaluated interdependencies, as the model aimed to capture the complexity of social organisational reality and transformational intrapreneurial change (Kraus et al., 2011).

1.1.1 Corporate Entrepreneurship

The world of business progressively changes, and reinvention is the new constant. The corporate arena becomes significantly more complex, innovation and advanced technology enables businesses regardless of their size to embrace globalisation. Industries have become hyper-competitive due to the entry of new players, expansion of traditional markets and industry players revitalising their product and service offering to meet evolving customer needs that are both sophisticated and demanding (Kuratko, Hornsby & Goldsby, 2004; Zahra & Covin, 1995).

Given the new reality facing businesses, there is a clear imperative for traditional incumbents to evolve beyond the current capability set of the firm and modernise the business to survive aggressive competition and sustain inter-generational relevance. Globally, established organisations are beginning to embrace corporate entrepreneurial practices as a turnaround philosophy and a toolset to foster innovation, engage in business model rejuvenation, achieve strategic renewal and attain organisational transformation for the purposes of sustainable business performance and profitability (Dyduch & Bratnicki, 2018).

The definitional domain of corporate entrepreneurship or intrapreneurship has been steadily evolving since the late 1970s; scholars have many descriptions for corporate entrepreneurship, from being a strategic vision or strategy, or a transformational process, to the identification and exploitation of innovative ideas within a corporate setting (Kreiser, Kuratko, Covin, Ireland & Hornsby, 2021). As the definitions are broad and spread across a wide definitional spectrum, for the purpose of this research paper, corporate entrepreneurship was conceptualised using the definition proposed by Barreira, Dhliwayo, Luiz, Naude & Urban (2008,

p. 139), “as an entrepreneurial mind-set and behaviour of an organisation”. Hence, the conceptual model was a firm-level behavioural model. In relation to the intrapreneurial outcome relationship that the model sought, the partial corporate entrepreneurship definition theorised by Guth and Ginsberg (1990) was leveraged; hence, the model would drive strategic renewal through organisational transformation.

However, the working definition of corporate entrepreneurship, employed for the theoretical deductions and empirical testing of this study, was an intrapreneurial competency profile of a company that drives an entrepreneurial mindset to achieve continuous strategic renewal. According to Miller (1983), corporate entrepreneurship has three organisational competencies, specifically organisational proactiveness, positive disposition to risk-taking, and product or services innovation, thus Miller’s (1983) definition of corporate entrepreneurship was utilised as the working definition for the conceptual model.

Research studies conducted by Ahmed et al. (2020) and Yunis, Tarhini, and Kassar (2018) both deduced that intrapreneurial firm-level behaviour leads to superior business performance; however, embedment of entrepreneurial organisational competencies without targeted implementation will not achieve the desired firm performance and profitability that corporate entrepreneurship promises. The philosophy of innovating firms posits that companies only generate a return on investment after the stages of firm investment into the development of technology, process, and innovation transformation, and the deliberate harvesting of this investment to achieve a maximum return. Investment into transformational activities or the quantum of investment does not guarantee a successful outcome, it is only when investment is married with addressing an unmet customer need, and when execution is coupled with entrepreneurial thinking does the propensity of a fruitful outcome, exponentially increase (Urban & Wood, 2017).

To ensure that an organisation’s intent of pursing corporate entrepreneurship translates into corporate entrepreneurial performance, subsequent organisational performance necessitates an embedment framework for corporate entrepreneurship, which was the cornerstone research contribution for this study. The formulation of the theoretical corporate entrepreneurship embedment process

model leveraged in this study, adopted the configuration approach where four key theory anchors were leveraged as a foundational framework, namely domain theory, firm level entrepreneurship theory, sustaining theory, and strategic integration theory (Covin & Slevin, 1991; Guth & Ginsburg, 1990; Ireland et al., 2009; Kuratko, Hornsby et al., 2004).

Guth and Ginsburg's (1990) domain theory combines the principles of corporate entrepreneurship with that of strategic management, which breaks down corporate entrepreneurship into the disciplines of corporate venturing and organisational transformation via strategic renewal. This theory has four manifestation drivers: the external environment, leadership, internal climate, and company performance. The model largely assumes a one-way influence between these drivers and corporate entrepreneurship, except in the case of company performance, which is viewed as reciprocal; the model inevitably does not capture the social complexity of corporate entrepreneurship (Ngoze, 2018).

Covin and Slevin's (1991) firm level entrepreneurship theory, positions corporate entrepreneurship as a multi-level construct that is derived due to the multiplicity effect of employee entrepreneurial behaviour, organisational entrepreneurial behaviour, and the influence of the macro environment. Even though the model articulates the broad-level dimensions that drive corporate entrepreneurial activity, the model, however, lacks specificity in relation to corporate entrepreneurial performance value drivers and the underlying execution framework (Ngoze, 2018).

The sustaining theory of Kuratko, Hornsby et al. (2004), frames the influence of the environment as a strategic renewal trigger and centres on the continued entrepreneurial behaviour on the part of the employee. The model conceptualises that it is dependent on whether the intrinsic and extrinsic returns outweigh the personal risks endured by an employee. It is driven by the perceptions of the top leadership cohort and their ongoing support evidenced through resource allocation, rewards, autonomy, and elastic work boundaries. The drawback of this theory is that the starting point for corporate entrepreneurship is not strategy and assumes a bottom-up organic manifestation, which does not capture organisational power complexity (Ngoze, 2018).

On the other hand, the strategic integration theory of Ireland et al. (2009), centres on corporate entrepreneurial strategy and the manifestation of that strategy into a firm entrepreneurial orientation, which drives market competitiveness and strategic positioning. The theory does not capture the workings of the multi-levels within an organisation and how the various value drivers align to systematically deliver corporate entrepreneurial performance, nor does it factor the nuances that arise due to embedment time frames (Ngoze, 2018).

As such, the embedment process in this study's model integrated the four underpinning theory frameworks into an embedment theory and capability framework, that encapsulated the dynamic complexity of corporate entrepreneurship, the multi-level analysis, predictors of corporate entrepreneurship performance, and corporate entrepreneurship organisational alignment framework and execution model.

1.1.2 Antecedents of Corporate Entrepreneurship

Corporate entrepreneurship extant research has ripened into a consensus regarding core factors or antecedents that encourage corporate entrepreneurship activity and subsequently, the absence of these drivers would potentially hinder corporate entrepreneurial output. Leveraging the four theoretical anchor models, a synthesis of common drivers across the multi-level domains was selected to be included into the corporate entrepreneurship embedment model, with a targeted focus on market dynamics within the macro domain (Covin & Slevin, 1991; Guth & Ginsburg, 1990; Ireland et al., 2009; Kuratko, Hornsby et al., 2004). Furthermore, the model included a deepening of the exploration of network ties in a developing continent perspective and inclusion of the moderation effect of market dynamics within an African banking context (Sakhdari, 2016; Zahra, 2015).

Included in the framework of the theoretical corporate entrepreneurship embedment model are individual level variables of cognitions, persona, network ties, and cultural values; organisational level variables of leadership, strategy, and organisational climate comprising culture, rewards, structure, resources, and capabilities; and environmental level variables comprising dynamism and hostility.

1.1.2.1 Organisational Level Variables

Leadership

Given that the business context has transformed into a high-velocity, aggressive environment, the profile of leadership required to navigate these ambiguous waters, differs from traditional management styles. As such, even though there is an array of universal leadership models available, that at their most granular level influences a group of followers to achieve an outcome, given the current business context and the case for change, a very specific skill-set and mindset is required to influence transformational change and strategic renewal. A leadership style that motivates superordinate performance by appealing to employee's higher order needs of self-actualisation and inspires constituents to transcend self-interest behaviour for the collective good (Gupta, MacMillan & Surie, 2004).

Assessing the leadership capability model required, transformational leadership, a leadership construct developed by Bass (1985), is closely aligned with evoking entrepreneurial behaviour among employees and leading significant strategic change efforts. Transformational leadership differs significantly from preceding leadership research that focused on the more transactional aspects of leadership. According to Bass (1985), transformational leaders are visionary leaders that motivate organisational members to achieve extraordinary outcomes by transcending their current role boundaries. Transformational leaders have the cognitive ability to align the purpose of followers with that of the company and nurture an organisational mind-set among their followers. The required mindset is aligned to the firm's dominant logic and the metacognitive capability to drive an innovation agenda within the company, shape the culture of the organisation, while role-modelling the behaviours required to achieve firm-level performance (Howell & Avolio, 1993; Idris, Suyuti, Supriyanto, & As, 2022). Avolio, Bass and Jung (1999, p. 457) stated that, "transforming leaders convert followers to disciples and they develop followers into leaders".

Strategy

The strategy of an organisation encompasses the direction of travel for the organisation including its intents and choices, its presence or behaviours in the

market, and its mission, purpose, and vision for the business (Barreira et al., 2008).

The operating paradigm for companies has fundamentally shifted, along with the levels of change and complexity, and a constantly evolving competitor landscape; these have not simply changed the rules of the game, but transformed the game completely. Within this context, organisations need to not only survive, but also generate profitable growth. A pivotal lever that companies are adopting to unlock the 'art of the possible' within organisations is the incorporation of entrepreneurship as an essential component of a company's strategy (Kuratko, Morris & Covin, 2011).

According to Barreira et al. (2008), an entrepreneurial strategy is being implemented when an entrepreneurial posture or actions form the backbone of an organisational strategy and underpin the choices made. Ireland et al. (2009, p. 21) posited that entrepreneurial strategy "is a vision-directed, organisation-wide reliance on entrepreneurial behaviour that purposefully and continuously rejuvenates the organisation and shapes the scope of its operations through the recognition and exploitation of entrepreneurial opportunity".

An entrepreneurial strategy is considered an explicit materialisation of firm-level entrepreneurship, a potential cause of competitor advantage, and a roadmap for organisations to continuously renew and create capabilities that are central to sustaining business performance and success (Ireland et al., 2009).

Organisational Climate:

- Culture

Extant research has postulated the pivotal role that culture plays in the business performance of organisations and has theorised, given the dynamism of the global competitive environment, that strategy without a reinforcing culture does not enable high levels of employee engagement and growth in shareholder value (Groysberg, Lee, Price, & Cheng, 2018). Kuratko et al. (2011) strengthened this argument by positing that culture directly influences both strategy and performance.

According to definitions proposed by both Covin and Slevin (1991) and Kuratko et al. (2011), organisational culture is a set of shared values, behaviours, beliefs, assumptions, and expectations that encapsulate the internal ways of working within companies, and is transferred between employees during their tenures. Culture is a fundamental driver of any organisation; when employees behave in a manner that is congruent with a set of shared values and beliefs; their behaviour inevitably leads to a significant positive impact on organisational effectiveness (Venter, Urban & Rwigema, 2010).

Kuratko et al. (2011) theorised that entrepreneurial organisations have pro-entrepreneurial architecture, which enables organisations to nurture and sustain a climate that is conducive to intrapreneurship because entrepreneurship is not seen as an activity but rather a culture (Kuratko et al., 2011). Entrepreneurial cultures differ vastly from traditional or corporate cultures. It discourages command and control leadership and encourages learning through failure, continuous innovation, and improvement of performance (Barreira et al., 2008). According to Covin and Slevin (1991), an intrapreneurial culture drives an entrepreneurial posture and stimulates proactiveness, innovation, and risk-taking practices within companies.

- Reward

Extant research has proved that the Human Resource Management function of organisations needs to evolve to play a strategic role in order to develop mainstay competencies and create sustainable value through its employees. Theorists have argued that entrepreneurship cannot exist without the presence of individual level entrepreneurial behaviour (Shane, 2000), thus Human Resource Management policies and practices play a pertinent role in encouraging intrapreneurial behaviour within an organisation (Kuratko et al., 2011).

Reward policies and practices outline a company's strategy and framework to both long-term and short-term compensation. According to Ireland et al. (2009, p. 32), reward practices are an "organisational system that can have a direct and immediate effect on the occurrence of entrepreneurial behaviour". Kuratko et al. (2011) concurred with this viewpoint and hypothesised that reward philosophies

are facilitators of entrepreneurial behaviour and assist in creating an internal ecosystem conducive for intrapreneurship.

- Structure

The structure within an organisation refers to a recognised blueprint of how jobs and employees are grouped together and how activities or work flow of different functional groupings are interconnected (Kuratko et al., 2011). According to theorists Covin and Slevin (1991), organisational structure refers to the agreement or understanding of authority, workflow relationships, and communication flow within companies. Ireland et al. (2009) equally concurred with this definition of structure.

Corporate entrepreneurship thrives when the structure of the company has fewer levels, the spans of control are larger, and the decision-making rights are distributed across the depth of the organisation. The ideal fit between corporate entrepreneurship and structure is a move away from vertical hierarchical design to horizontal flat structures that encourage decentralisation and create empowerment (Kuratko et al., 2011).

Barreira et al. (2008) posited that intrapreneurial organisations have flexible enabling structures that permit businesses to efficiently and effectively respond to the continually evolving business environment while simultaneously competing in the current global climate (Kuratko, Hornsby & Covin, 2014).

Covin and Slevin (1991) argued that a company's entrepreneurial orientation or behaviour positively correlates with firm performance when the structure of the company allows managers and leaders to vary their operating approach or style within the organisation and authority is proclaimed based on the skill set and expertise of an employee.

- Resources and capabilities

According to Ireland et al. (2009), organisational resources embody what a company has at its disposal to transact and grow; when resources are combined to create an outcome, this combination of resources is referred to as

organisational capability. Organisational resources include capital, employees, plant and equipment, and organisational systems (Covin & Slevin, 1991).

Covin and Slevin (1991) argued that having an entrepreneurial posture is resource consuming and further posited that an organisation's entrepreneurial capability will be largely influenced by the quantum and quality of its resource base. Equally, the strength of the conversion relationship between entrepreneurial posture and firm performance depends on the degree to which the organisational resources and capabilities support an entrepreneurial posture.

1.1.2.2 Individual Level Variables

The fundamental building block to entrepreneurial theory, is the notion that entrepreneurial action is a direct outcome of individual driven action (Shane & Venkataraman, 2000) and more precisely the intentions, motivational psychology, and cognitive abilities of an entrepreneur, thus human agency is a cornerstone theory utilised to explain entrepreneurial activity variance among individuals (Barreira, Botha, Oosthuizen, & Urban, 2013).

According to Bandura (2001), human agency is the capability to control one's thoughts and actions and is based on theoretical framework that the functioning of one's brain is due to micro-analytic cognitive thinking patterns and the macro-analytic influence of social structures (Barreira et al., 2013).

Entrepreneurial Mind-set:

The transformation of the global business arena into a landscape ridden with inherent hyper-competition, uncertainty, and ambiguity has become very challenging for established companies to navigate competently. Integral to survival and exponential growth, is the ability for businesses to exploit and capitalise on the evolving opportunity gamut given the environmental context (McGrath & MacMillian, 2000).

Barreira et al. (2008) posited corporate entrepreneurship as an organisational entrepreneurial mind-set, whereas McGrath and MacMillian (2000) suggested that an individual's thinking structure enables employees to detect and profit from

turbulent change and uncertainty. This entrepreneurial mind-set is “a set of finely honed cognitive skills that allows for the forging of opportunity from uncertainty and adaptive business execution” (McGrath & MacMillian, 2000, p. 4).

An entrepreneurial mind-set is based on the principles of social cognitive theory and more specifically entrepreneurial metacognitions (Haynie, Shepherd, Mosakowski & Earley, 2010). According to Bandura (2001, cited in Barreira et al., 2013, p. 4), “social cognitive theory supports a model of nascent, interactive agency and considers that individuals exist within a total situation described by two pairs of factors: one being cognition and motivation and the other being the person in the situation.”

Haynie et al. (2010) described entrepreneurial metacognitions as “deep-seated in ‘higher-order’ mental processing or metacognitive processes that enable the entrepreneur to think beyond or reorganise existing knowledge structures and heuristics, promoting adaptable cognitions in the face of novel and uncertain decisions or contexts” (Haynie et al., 2010, p. 217).

Research conducted by Haynie and Shepherd (2009) and Urban (2012), narrowed the domain of an entrepreneurial mind-set from a broader metacognitive lens to specifically looking at cognitive adaptability as a fundamental foundation of an entrepreneurial mind-set of employees. Cognitive adaptability enables individuals to effectively navigate high-velocity business environments with a high degree of competency and agility through the self-regulation of their thinking configurations. This is achieved through the cognitive ability of an employee to be reflective but at the same time, strategically deliberate in business action in order to maximise firm performance regardless of the level of business uncertainty and ambiguity. As such, Haynie et al. (2010) predicted that varying degrees of entrepreneurial performance among employees are related to the depth of an employee’s cognitive adaptability.

Persona:

Extant research has expressed mixed viewpoints regarding personality traits and motivational attributes that drive entrepreneurial behaviour. Two studies conducted by Ardichvili, Cardozo and Ray (2003) and Shane, Locke and Collins

(2003) evaluated different constructs pertaining to this narrow focus of entrepreneurship and the subsequent research criticisms associated with each construct and leveraged constructs in their respective research studies that demonstrated more consistent deductions.

This study integrated and synthesised the research work conducted by Ardichvili et al. (2003) on personality traits that act as antecedents to entrepreneurial behaviour, and the research work conducted by Shane et al. (2003) on human motivational attributes that influence entrepreneurial action. Hence, this research study focused on four characteristics that conceptualise an entrepreneurial persona, the need for achievement, locus of control, creativity, and optimism.

Social networks:

According to Adler and Kwon (2002), social capital is widely acknowledged as the goodwill that is accessible to entrepreneurial teams or entrepreneurs. Its origin lies in an individual's social relations structure and richness that is drawn upon to enable entrepreneurial action. Social capital includes the social networks and relationships from which an entrepreneur gains institutional support and benefit (Barreira et al., 2013; Venter et al., 2011).

An entrepreneur's social structure consists of three facets, namely market relations, social relations, and hierarchical relations. The diversity in a social network is due to the richness and spectrum of both strong and weak social ties. Social networks provide individuals with access to knowledge, entrepreneurial opportunities, critical resourcing including funding, and a knowledge base to tap into when tackling business obstacles (Adler & Kwon, 2002).

Cultural values:

Culture is conceptualised as a customary set of characteristics shared by a collective group of people. Cultural values are shaped by an individual's social habits, social heritage, ethnicity, and nationality. Barreira et al. (2008, p. 163) provided a perspective that inferred that "cultural values affect the perception of an individual through cognitive schema, interpretation and sense making therefore dimensions of culture play an important role in shaping an individual's schema and

sense making, which subsequently act as powerful filters that shape interpretation and perception which in turn leads to differences in behaviours and outcomes."

Hofstede (1980) through an extensive empirical study across multi-national companies, formulated four dimensions that uniformly express national or macro-level cultures, namely individualism versus collectivism, large or small power distance, strong or weak certainty avoidance, and masculinity versus femininity. For the purpose of this study, the working definition for cultural values includes the four cultural dimensions created by Hofstede (1980).

The cultural attribute of individualism favours behaviours that drive self-actualisation and self-respect, which advocate and drive the needs of the group. Power distance denotes where the decision-making authority and mandate to act resides within a group structure whereas the cultural characteristic of weak uncertainty avoidance signifies how comfortable an organisation is in navigating ambiguity, engaging in bold practices and risk-taking behaviours. Finally, masculinity tendencies embody more assertive mannerisms and an inclination towards more dominant roles (Hofstede, 1983).

1.1.2.3 Environmental Level Variables

Dynamism and Hostility:

Covin and Slevin (1991) conceptualised the external environment to be the forces and components that exist outside of an organisation's boundaries that dually affect the actions and responses of a company and are affected by a company's internal operations. This equally includes forces related to the macroeconomic landscape, political-legal framework, sociocultural context and technological lens that together provide the wider context for organisational performance.

In the research study conducted by Zahra (1993, p. 319), a multidimensional definition of a firm's environment was formulated, utilising cluster analysis to distinguish 102 companies into four specific external environment settings, namely "dynamic growth, hostile and rivalrous but technologically rich, hospitable, product-driven growth, and static and impoverished".

For the purpose of this study, the working definition for the external environment was characterised by both dynamic growth and hostility.

Zahra (1993, p. 322), conceptualised “dynamic growth”, as the “continuity of changes in a firm’s environment, arising from technological progress, competitive rivalry, regulatory developments, and similar forces”, which emphasises the exponential rate of change. Dynamism characteristics within an environment, provides opportunities for businesses within its existing sector as well as adjacent industries. Dynamism, based on western research creates the impetus for companies to engage in strategic renewal and business venturing to remain competitive (Demirkan et al., 2019).

Kreiser, Anderson, Kuratko and Marino (2020), characterised hostility as a descriptor of environmental conditions that are underpinned by significant levels of hyper-competition and market rich exploitable opportunities balanced with market ambiguity, which extant research has widely acknowledged as a strong environmental antecedent of corporate entrepreneurship in developed economies (De Villiers-Scheepers, 2012).

Two studies conducted by the McKinsey Global Institute, ‘Lions on the Move 2: Realising the potential of Africa’s economies’ (Bughin, 2016) and ‘Roaring to life: Growth and innovation in African Retail Banking’ (Chironga, 2018) are leveraged to ascertain the working definition. Both these white papers categorise the banking sector as having rich revenue pools, good growth trajectories due to the emerging middle class across the continent, and being an incubator for digital innovation that is shaping the banking sector in Africa to be more aggressive and in some instances more progressive than the global banking sector (Malinga, 2018; Marous, 2018). This perspective was augmented with the arguments presented by Marous (2018) and a KMPG (2018) global CEO study, which articulated that the African continent is equally infused with an increasing spectrum of competitors, continuously evolving regulation and political hostility. Thus, the African banking sector is classified as being influenced by two pivotal environmental factors: dynamic growth and hostile and rivalrous but technologically rich.

The relationship between banks and the economy is a reciprocal relationship; banks play a foundational role in the wider economy within Africa and their performance is directly impacted by the economic outlook of the region. Domestically, the South African economy is considered a laboured economy, characterised by subdued growth rates and systemic challenges since 2011. The challenges that existed have been exacerbated by the COVID-19 pandemic, which has been incredibly harsh on the African continent, resulting in a rapid shrinking of the economy, a six per cent decline in real GDP in 2020. However, South Africa's economy woes did not stop there; they were further compounded by new variants of the virus, record high levels of unemployment, and national rioting (Demirkan et al., 2019; PWC, 2021).

Subsequently, the hostile environmental conditions resulted in sharp decline in the average return of equity of African banks from 50 per cent to seven per cent in 2020 and a cost-to-asset ratio of two times the global average. This has been coupled with heightened dynamism within the banking market due to an acceleration of many long-term banking trends and experiences emanating from the pandemic, which have shifted customer behaviours and expectations, resulting in the merging of industries, and subsequently challenged the very core of traditional banking (McKinsey, 2021a).

However, the hostility and dynamism in the global banking market has seen divergent responses between progressive economies and emerging economies, thus resulting in an uneven banking performance and economic recovery. Even though African banks have leap-frogged over global banks in a number of banking innovations like mobile banking since 2011, the systemic corporate mindset informed by a deep history of colonisation and organisational ineffectiveness has resulted in Africa's incumbent banks being more risk averse. This was due to deeper levels of market uncertainty in Africa, less fiscal support, and fewer country safety nets in place (Mustafa & Hughes, 2018; Nyantakyi, Sy & Kayizzi-Mugerwa, 2015).

Thus, regardless of the growth opportunities, which have arisen due to the crises, African banks have chosen to 'weather the storm' and conserve financial resources in comparison to their global counterparts.

1.2 Context of the Study

Increasingly, the ability for large corporates to remain competitive and grow ahead of the market has become a challenge and a limitation for intergenerational sustainability. The approach of cutting costs and downsizing is no longer a viable solution for success or survival and thus a new imperative is required to navigate the turbulent global macro-economic environments and complex external landscapes successfully (Garvin & Levesque, 2006).

According to an article published in the Guardian, the average life of companies across the spectrum has drastically reduced to 12.5 years. Organisations and individuals are no longer catalysts of change and the heart of the business solution to survival lies with an organisation's "ability to be resilient, [which] is about adapting when everything around it is changing – like an aspen tree" (Visser, 2013, para. 12).

The banking sector is not isolated from this phenomenon; the global banking sector is experiencing sluggish growth while Africa's banking industry offers an inspirational contrast, largely influenced by digital-first, simpler, leaner business models (e.g., mobile money), competitive pricing, and value bundles (Malinga, 2018, Urban & Townsend, 2021).

The global banking sector is fast adopting the mindset and behavioural characteristics of fintech start-ups, and transforming to become both more strategically minded and technologically progressive. This approach responds to evolving customer needs while trying to remain relevant and competitive against a spectrum of big tech, new and traditional competitors, and intensifying the hostility in the market (Marous, 2018).

According to Riccardo Orcel, deputy CEO of VTE Group (Orcel, 2015), Banking and the broader financial services sector plays a crucial role in contributing towards Africa's growth agenda, commonly coined as 'Africa Rising'. The banking industry is among a narrow group of institutions that can claim to have the transformative power to change the economic profile of the continent.

According to an African retail banking sector report (Chironga et al., 2018), circa three hundred million Africans are currently banked, which is forecasted to increase by an additional 150 million over the next five years. The banking industry across Africa is the second fastest growing and most dynamic continent; more importantly, Africa is an innovation incubator (Marous, 2018).

Africa has made significant inroads into the advancement of banking technology, digitisation, and innovation. Africa has arguably leap-frogged the world in mobile money innovation and has demonstrated the potential of innovation to unlock Africa's potential and spearhead economic growth (Nyantakyi et al., 2015, Urban & Townsend, 2021).

The South African banking sector survey, conducted in 2013 by PWC (2013), posited that the global banking-operating environment has been turned on its head and rapid change has become the new constant. Regardless of the break-through progress and success, traditional banks have enjoyed on the continent, the entry of fintech and big-tech players, coupled by intense rivalry, has subsequently turned banking on its head and is being intensified by digitally driven transformation, which is threatening the long-term survival of traditional banks (Arise, 2017; KPMG, 2018).

Non-traditional banking competitors, including retailers and mobile service providers, are blurring banking industry lines and, coupled with fintechs, are disrupting the banking industry. Apart from the introduction of new players into the market, evolving customer preferences and purchasing behaviour have resulted in the deep global customer need of real time convenience banking (Thulo, 2015, Urban & Townsend, 2021).

Based on extant research, it is increasingly clear that the rate of innovation change over the next ten years (until 2031) will outstrip the rate at which the innovation changed over the last ten years (since 2011), a sentiment equally expressed by Moore's law, given that the heart of change on the continent is being driven by techno innovation. This constant spiral of change and disruption will result in the evolution of banking business models (KPMG, 2018; Marous, 2018).

In order to compete and defend aggressively, while growing margins, financial services companies must pivot the priorities of the company towards innovation as the number one priority, and transform the organisational culture and structure of the business to support innovation acceleration (Marous, 2018).

It is an imperative for banks to embrace digital innovation, strategic renewal and the creation of new business models to optimise current revenue streams and create new revenue streams (Arise, 2017). The banking industry will need to cultivate and secure diverse skills and competencies to remain competitive; the ability to choose the optimum pathway to transformation will become an imperative differentiator (KMPG, 2018).

In fact, extant research has posited that the new imperative to businesses is intrapreneurship, the critical response required to achieve sustainable competitiveness and profitable growth (Kuratko, 2009).

According to Kuratko (2009) and Guth and Ginsberg (1990), innovation, strategic renewal and new value creation are vital facets of corporate entrepreneurship and a crucial imperative for the banking industry, given the rapid technology-driven innovation disrupting banking and the customers' need for value added services and bundling. The ability for banks to build intrapreneurial capabilities that enable banking incumbents to defend and grow is critical to business survival (Thulo, 2015).

First Rand Group, a financial services company, headquartered in South Africa has spearheaded banking innovation and digitisation of traditional incumbents across the continent over the last decade (since 2011) (Thulo, 2015), which is evident in their above average return on equity of 22.5 per cent for the 2017 financial performance year (First Rand Group, 2019). In stark contrast are regional players who have not proactively embraced the need for organisational renewal and digitisation; for example, Absa Group Limited has significant presence across the continent but its financial performance and position on the banking market power curve has significantly slipped since 2011 (ABSA, 2018).

Even pre-COVID-19, the banking industry had become increasingly hostile since 2011 due to an influx of non-traditional competitors entering the market, thus a

need for traditional banks to engage in strategic renewal of their core businesses to maintain competitiveness in the market and inter-generational sustainability.

However, COVID-19 accelerated the burning platform for banks; “African banks cannot afford to leave their performance recovery to chance” and if they do, it will inevitably result in a forecasted loss of $48 billion in cumulative post risk revenue by 2024 within the banking market in Africa. This will lead to “multiple years of returns below the cost of capital” (McKinsey, 2021a, p. 6). Thus, African banks need to quickly pivot their focus towards growth and relevance.

A fundamentally different business model and delivery channel that addresses major swings in customer behaviours and lifestyle expectations will drive growth and relevance in the African banking market. However, this will require African banks to provide integrated digital ecosystem solutions that go beyond the traditional banking offering to be delivered quickly into the market (PWC, 2021).

In this research study, the levels of corporate entrepreneurship, within the financial services sector of companies headquartered in South Africa, were analysed as a precursor to creating a strategic framework and capability model to enable financial services organisations to embed a corporate entrepreneurial ecosystem that enables effective and agile corporate entrepreneurial transformation.

1.3 Problem Statement

The global operating context for businesses has fundamentally changed, influenced by globalisation and the fourth industrial revolution (4IR), and continues to change at an exponential rate, due to the seismic shifts in business brought about by the COVID-19 pandemic. Given the downstream impact on businesses and their ability to thrive in the ‘new normal’ and ‘next normal’, it is imperative for incumbents to follow a path of strategic renewal and transformational change in relation to their business models, business practices, capabilities and organisational architecture and thus ensure business survival and intergenerational sustainability. Corporate entrepreneurship provides incumbents with a firm-level philosophy and capability framework to drive strategic renewal, thereby enabling firms to achieve market competitiveness through economic and

financial cycles and enable the successful performance recovery and growth of African banks during and post the pandemic (McKinsey, 2020; 2021a).

This study determined the degree of influence that organisational, individual, and environmental antecedent factors had, as predictors of corporate entrepreneurial performance within the South African banking industry.

1.4 Research Purpose, Aims of the Study, and Research Question

The purpose of the study was to deepen the convergence of corporate entrepreneurship as a multi-dimensional construct and develop an integrated and comprehensive appreciation of the dynamic complexity of the corporate entrepreneurial embedment process in driving entrepreneurial performance; a research gap identified through the studies conducted by Bloodgood et al. (2015), and Kuratko, Hornsby et al. (2015).

This study predicted the relative importance of internal organisational factors, individual level factors, and environmental factors, in promoting and advancing corporate entrepreneurship performance levels and ascertaining the effect of interrelated relationships and interdependencies among organisational, individual, and environmental antecedent variables. It aimed to develop a corporate entrepreneurship embedment capability model, which is a research gap identified by Sakhdari (2016). It augmented theory development in the domain of corporate entrepreneurship, the model of antecedent effects within the banking industry across an emerging continent, a research gap identified by Chelliah and Lekmat (2011), in relation to furthering the localisation of industry studies of corporate entrepreneurship in developing countries. Apart from addressing the research gaps identified above, the empirical evidence gathered during this study enriched the understanding of the impact of dynamism and hostility, environmental antecedent variables, on corporate entrepreneurship performance within the African context (Mustafa & Hughes, 2018).

This integrative research study aimed to bridge the research gaps identified by Kuratko and Audretsch (2013) and Sakhdari (2016) and harmonise multiple perspectives of corporate entrepreneurship as multi-construct (Moroz & Hindle, 2011). Empirical knowledge gained from this research was used to progress the thought leadership in the field of corporate entrepreneurial embedment process within an organisational setting by understanding the effect of multi-level antecedent sets as value drivers of corporate entrepreneurial performance within a dynamic organisational ecosystem. Corbett, Covin, O'Connor and Tucci (2013) posited that this is an area of research that has limited existing literature.

The developmental approach adopted for this research study utilised a configurational approach to achieve the research purpose. The methodology consisted of a three-pronged approach. First, existing literature was leveraged to consolidate existing theoretical approaches and integrate existing models and frameworks, which formed the basis of the proposed theoretical model. Second, the theoretical model was validated through empirical testing, causal relational influence among the three different sets of antecedent variables established, and the quantum of impact on corporate entrepreneurial performance determined (Corbett et al., 2013). Finally, an optimal configuration was proposed as a premise to describing and predicting corporate entrepreneurial performance as a function of system thinking.

The theoretical model integrated the models and theoretical frameworks created by Covin and Slevin (1991), Guth and Ginsberg (1990), Ireland et al. (2009), and Kuratko, Hornsby et al. (2004). The model converged theory from the following domains, namely entrepreneurship, leadership, organisational culture, strategy, organisational structure, reward, resources and capabilities, entrepreneurial mind-set, entrepreneurial persona, cultural values, social networks and environmental factors of dynamism and hostility, to establish optimal configurations that drive effective and agile corporate entrepreneurial performance.

This study aimed to create a predictive comprehensive embedment framework of corporate entrepreneurship, through the formulation of an integrated model of a corporate entrepreneurial performance ecosystem. It aimed to predict the "rules of the game" (Trussler, 1998, p. 16), which would establish how the entrepreneurial

zeal of employees is channelled within an organisational construct, given the external stimulus shaped by the evolving external environment and a codified set of internal conditions that create a conducive climate to propel an organisation to create value and deliver sustainable growth (Hornsby, Naffziger, Kuratko, & Montagno, 1993; Kuratko & Hornsby, 1998).

The main research question asked: What degree of influence does organisational, individual, and environmental antecedent factors, as predictors of corporate entrepreneurial performance, have within the banking industry in South Africa?

1.5 Importance of the Study

Apart from the inroads made in relation to decreasing the knowledge research gaps that exist within the domain of corporate entrepreneurship highlighted in the preceding sections of this report, the empirical research progresses African management theory and business insights into transformational effectiveness within the banking sector in emerging economies (Chelliah & Lekmat, 2011; McKinsey, 2021b).

Given the study is centred around the banking industry, and that banks play an indispensable role in the wider economic and societal advancement in Africa, the importance of this study is not isolated to firm level benefits, but extends to an aggregate or national level, and more specifically to economic development and faster pandemic performance recovery in Africa. Chen, Zhu and Anquan (2005, p. 529), posited, “entrepreneurship plays an indispensable role in improving productivity and promoting economic growth”. A philosophy supported by endogenous growth theory models (Leibenstein, 1979) and strongly supported by several prominent economic scholars from Richard Cantillon (1680-1734) to Schumpeter (1934). Even strategist Michael Porter (1990), in his formulation of the national diamond theory, theorised that entrepreneurship plays a pivotal role in the growth of nations.

Research in the field of entrepreneurship and the link between entrepreneurship and economic growth has largely been premised around Western thinking and observations extracted from the developed countries. This research did not take

into consideration the contextual backdrop of Africa and the strong influence of cultural values, beliefs, behaviour, institutional drivers, and the aftermath of colonialism on the management of companies across the continent resulting in nuances within African organisations that differ from Western management theory (Demirkan et al., 2019; Zoogah, Peng & Woldu, 2015).

The Achilles heel of African organisations to compete in the era of globalisation and the influx the multi-national corporations, 4IR, and the COVID-19 pandemic is organisational effectiveness across firms in Africa. Zoogah et al. (2015) theorised that a critical influence on firm-wide organisational effectiveness, is building company differentiated resources and capabilities that are difficult to replicate. Extending this line of thinking and coupling this argument with the thoughts posited by Chen et al. (2005), corporate entrepreneurship is a vital capability enabling emerging economies to catch up with more advanced countries. Thus, a critical analysis of Western philosophies, emerging market research, and African nuances, has led to the conclusion that cultivating corporate entrepreneurial thinking and behaviour among African organisations will enable incumbents to build organisational effectiveness, outperform their competitors, and operate effectively and competently in a global arena. Africa remains a fertile ground to test corporate entrepreneurial theory and possesses the potential to further theory development in this field of research (Demirkan et al., 2019).

1.6 Conceptual / Theoretical Definition of Terms

- *Absa Group (Pty) Ltd*: An African financial services company, with operations across 10 countries, 11 banks, an employee base of 42 000, and three trillion rands worth of assets (ABSA, 2019).
- *First Rand Group (Pty) LTD*: An African financial services holding company, which is the parent company to FirstRand Bank. It operates across eight African countries, three international locations and is headquartered in South Africa (FirstRand, 2019).

- *Entrepreneurial orientation*: This “refers to the strategy-making practices that businesses use to identify and launch corporate ventures” (Dess & Lumpkin, 2005, p. 147).
- *Entrepreneurial posture*: This describes the entrepreneurial firm-level behaviour of an organisation that reflects the level of risk-taking, rate of innovation, and proclivity to participate in pre-emptive business practices (Covin & Slevin, 1991).
- *Social capital*: This denotes “the goodwill available to entrepreneurs, or entrepreneurial teams; its source lies in the structure and content of the entrepreneur’s social relations” (Adler & Kwon, 2002, p. 23).
- *Human capital*: This describes the knowledge, skills, and capabilities of employees, which increases the cognitive ability of employees and explains variance in performance outcomes (Venter et al., 2010).

1.7 Contribution of the Study

This research study extended the academic understanding of the dynamic complexity of corporate entrepreneurship and the complexity embedded in organisational contexts in driving transformational change, which was identified by Bloodgood et al. (2015) as a limitation of prior corporate entrepreneurship models.

According to Kuratko and Audretsch (2013), there is a fundamental ambiguity that exists in literature which is attributed to varying perspectives of corporate entrepreneurship in an organisational setting as a result of targeted examinations of antecedent relationships within the corporate entrepreneurship domain. Although research has cemented the need for corporate entrepreneurship in the new era due to globalisation, 4IR, COVID-19, and the inherent value that corporate entrepreneurship creates for organisations, this unfortunately has not translated into a deep knowledge base of the mechanisms that enable corporate entrepreneurial performance within an organisational setting.

As such, this study closed the knowledge gap identified by Kuratko and Audretsch (2013) and Sakhdari (2016) by deepening the theory of the holistic corporate entrepreneurship embedment process within an organisational setting. In banking

this process spans three levels of analysis as “process models can better tease apart the needed steps to enhance the levels of corporate entrepreneurship. [While there have been some] process models explaining the process of corporate entrepreneurship” (Sakhdari, 2016, p. 11), limited models have focused on theorising the process of strategic renewal and transformational change.

This research advances the knowledge base, through the integrated analysis of the causal relationship patterns among a comprehensive set of multi-level antecedent variables, a research area that had not been fully explored at the time of study (Kuratko, Hornsby et al., 2004).

According to Corbett et al. (2013), research has focused largely on the definition of corporate entrepreneurship and its inherent value and less on pinpointing the circumstances through which corporate entrepreneurial initiatives might be successful. Thus, this study furthered the development of a comprehensive corporate entrepreneurship performance ecosystem framework and the prediction of high performing value drivers of corporate entrepreneurial performance, a research gap identified by Corbett et al. (2013). Subsequently, significant strides in establishing a single harmonised model of corporate entrepreneurship within large corporates was made; areas of research development that had been highlighted by both Moroz and Hindle (2011) and Kuratko Hornsby, et al. (2004).

Prior corporate entrepreneurship studies zeroed into a distinctive area of corporate entrepreneurship focus for example, business environment, top management, and structural factors; marginal research focus has been given to the organisational capability of corporate entrepreneurship (Sakhdari, 2016). Equally, through three decades of research, Zahra (2015) deduced that the knowledge transfer process of market intelligence into corporate entrepreneurial performance remains a research gap.

As such, this study narrowed the significant research gap that exists by developing a capability-oriented corporate entrepreneurship model, that maps the corporate practices and processes that enhance the rate of corporate entrepreneurial performance through the conversion of market intelligence (Sakhdari, 2016).

Africa's spending power has significantly increased over the last decade; it is a continent rich with opportunity coupled with great growth prospects. Regardless of this backdrop, African companies struggle to seize these opportunities due to a "low level of organisational effectiveness" and access to organisational effectiveness building frameworks that consider the dynamic environmental and organisational influences within the African context (Zoogah et al., 2015, p. 8).

Beyond the purist contributions towards deepening corporate entrepreneurship research, the study advanced the development of an organisational effectiveness capability framework. A corporate entrepreneurship capability framework for African businesses is a research gap in African management theory identified by Zoogah et al. (2015) that aims to address the ability of African organisations to compete effectively in a global arena.

Corporate entrepreneurship is a firm level construct that manifests in intrapreneurial behaviour. According to Sakhdari (2015), limited empirical studies have explored the organisational mechanisms that stimulate employee's entrepreneurial behaviour. As such, this study explores the moderation effect of organisational factors in driving employee entrepreneurial behaviour.

This development configurational study equally progressed the understanding of corporate entrepreneurial behaviour within the financial services sector in developing countries, areas identified by researchers (Chelliah & Lekmat, 2011; Murimbika & Urban, 2013; Urban & Wood, 2017; Zahra, 1993), and that require more detailed empirical studies and validation regarding corporate entrepreneurship theoretical relevance in developing countries.

Given that management research has been conducted primarily in Western developed economies, and even though this bias has slowly been reduced, with research conducted in developing countries increasing, management research in Africa that embraces the contextual nuances has essentially been scarce. As such, the nature of the relational influence of dynamism and hostility on corporate entrepreneurship within an African environmental context (Mustafa & Hughes, 2018) and the significance of network ties in driving corporate entrepreneurial

activity in the context of developing countries has not been fully explored; this empirical study closed these gaps (Sakhdari, 2016).

As organisations strive to create sustainable corporate entrepreneurship against the backdrop of increasingly more tense macro-environmental conditions, it is imperative that organisations have a clear sense of what the big-bets are when creating an internal entrepreneurial ecosystem.

Organisations need to first be able to prioritise the implementation or embedment of the profile of antecedents required to build an entrepreneurial ecosystem, as companies deal with a very real problem of managing the scarcity of resources and the complexity of implementing change.

The empirical findings from this research could assist CEOs and top-level management to prioritise implementation of entrepreneurial initiatives. It would enable organisations to plan effectively and sequentially, and to implement an entrepreneurial transformation that creates business performance impact and market competitiveness with speed and agility.

Equally, theoretical deductions emanating from this empirical study could be leveraged to expand empirical testing to include a global financial services framework thus being able to establish consistency of findings across different economy types.

1.8 Delimitations of the Study

This targeted research study was conducted to obtain a predictive perspective on the engineering of corporate entrepreneurial activity within established banking firms in Africa. As such, it provided both a theoretical lens and an empirical lens to improve understanding of corporate entrepreneurship activity and antecedent predictive behavioural patterns of corporate entrepreneurship in a developing economy, localised within the banking industry. Thus, generalisations of the outcomes from the study could not be unilaterally applied to other industries or different economy constructs without further empirical studies.

2 LITERATURE REVIEW

The literature review provides a theoretical foundation that underpins the research merits of this study. It establishes a methodological framework and approach that is utilised to ascertain the research domains and constructs that are pertinent to this study. This forms the basis of the conceptual model and the identification of the endogenous and exogenous variables contained within the model. This chapter leverages extant research to theoretically substantiate the causal and contingency relationships hypothesised within the conceptual model and segue into the creation of an empirical model that formed part of the field study for this research report.

Corporate entrepreneurial behaviour is evaluated through three levels of analysis, organisational, individual, and environmental levels, to determine the impact of antecedent entrepreneurial determinants in cultivating corporate entrepreneurial behaviour and stimulating organisational performance in the South African banking sector.

2.1 Entrepreneurship and the Evolution of Entrepreneurial Theory

Entrepreneurial research has always had a controversial theoretical foundation even though the birth of entrepreneurship emerged from growth theory research conducted by economic theorists; the role of entrepreneurship in growth theory has varied from being non-existent to being viewed as playing a meaningful role and significantly influencing market equilibrium dynamics. A consistent viewpoint among many researchers is that the domain of entrepreneurship is fundamentally missing a consistent theoretical framework that weaves together the different strands of entrepreneurship into a singular narrative and an empirical model (Grebel, Pyka & Hanusch, 2001). Although entrepreneurship is not a well-defined concept, a cross-section of extant literature seems to converge on the perspective that entrepreneurship is a multi-dimensional concept (Wennekers & Thurik, 1999).

In keeping with Wennekers and Thurik (1999), entrepreneurship is defined as follows:

> Entrepreneurship is the manifest ability and willingness of individuals, on their own, in teams, within and outside existing organisations to:
>
> - Perceive and create new economic opportunities (new products, new production methods, new organisational schemes and new product-market combinations); and to
> - Introduce their ideas in the market, in the face of uncertainty and other obstacles, by making decisions on location, form and the use of resources and institutions (p. 46).

This definition concludes that entrepreneurship is in fact a behavioural phenomenon at both individual and firm levels of analysis. At an individual level, entrepreneurial behaviour is a personal predisposition of someone incorporating the personal characteristics and capabilities of an entrepreneur. At a firm level, organisations create opportunities for employee entrepreneurial behaviour to flourish, and subsequently organisations become entrepreneurial (Wennekers & Thurik, 1999).

2.1.1 Taxonomy of Entrepreneurial Theories

Critically evaluating the array of economic perspectives posited in Table 2.1, it is concluded that even though equilibrium theory has unanswered observations in relation to entrepreneurship, equilibrium theory does offer consistent economic theory and a methodological approach to understand market dynamics.

Table 2.1: Taxonomy of Entrepreneurial Theory

Entrepreneurial Viewpoints	Philosopher	Summary Perspectives
Founding theory	Richard Cantillon, (1680s – 1734)	Cantillon was the founding theorist to provide economic substantiation to the notion of entrepreneurship. He considered entrepreneurs as part of a group of economic agents, playing a central coordinating role of connecting producers with consumers in the market. Equally, he posited that entrepreneurs play a decision-making role in navigating markets to achieve profitable outcomes while dealing with market uncertainty and concluded that entrepreneurs play an equilibrating role in relation to the economic system (Grebel et al., 2001; Praag, 1999).
Classical theory	Jacques Turgot, (1727 – 1781)	Turgot viewed an entrepreneur as an owner of capital and entrepreneurship as an outcome of an investment decision to set-up a business (Grebel et al., 2001).
	Jean Baptistic Say, (1767 – 1832)	Say expanded Turgot's idea framework and elevated the role of an entrepreneur to becoming a key figure in economies. He viewed an entrepreneur as an orchestrator of both the market and firm levels, and a modern era leader within his company. Say made a critical distinction between a capitalist and an entrepreneur and suggested that an entrepreneur does not necessarily have to be the provider of capital to the firm. He acknowledged that successful entrepreneurs have a distinctive set of capabilities and experiences that enable them to comprehend technology and to convert this knowledge into new product or services that meet a customer's need, thus entrepreneurial competition is limited and the entrepreneurial income at market equilibrium is high (Grebel et al., 2001; Praag, 1999).
	Quesnay, (1888)	French theorist, Quesnay, "the precursor of the Physiocrats" (Grebel et al., 2001, p. 4), shifted the perspective of an entrepreneur's role from an active economic agent to simply a benefactor of capital within the economic cycle; a business owner rather than industry leader as posited by Cantillon.
	Baudeau, (1919)	Baudeau positioned an entrepreneur as an innovator and shed light on the symbiotic relationship of entrepreneurship and innovation. He emphasised that entrepreneurs have a superior ability to process information and convert knowledge into new products and services thus making an entrepreneur an active economic player (Grebel et al., 2001).
Neo-classical theory	Alfred Marshall, (1834 – 1924)	Marshall was an early neo-classical economist and in 'Marshallian society', entrepreneurship was seen as central to directing supply and demand in the market and leading distribution of both capital and labour within a company. They bear the risks that accompany production, are instrumental in innovation practices, and considered key contributors to progress. Entrepreneurs require sophisticated capabilities and thus the "supply price for entrepreneurship will generally be high" (Praag, 1999, p. 7).

Entrepreneurial Viewpoints	Philosopher	Summary Perspectives
Neo-classical theory (cont.)	Orthodox neo-classical economists	Formalised neo-classical models assume that all agents within an economic system have perfect information and perfect foresight. The characteristics of market dynamics include perfect market order and well-defined problems. General equilibrium theory assumes that all markets operate at optimal levels of supply, demand, and price, and that market equilibrium is consistently maintained until an exogenous stimuli is exerted within the economic environment, after which market dynamics are adjusted to achieve equilibrium again. Apart from perfection in rational choice, it assumes a domain without uncertainty and constant optimality. In this realm, entrepreneurship and an entrepreneur's role does not exist (Grebel et al., 2001; Praag, 1999).
	Post modernism, Frank Knight, (1885 – 1972)	A Knightian entrepreneur bears uncertainty and guarantees remuneration by ensuring sufficient capital is available. Profitability is linked to an entrepreneur's own capability set, good luck, and self-belief (Praag, 1999).
	Post modernism, Coase, (1937)	Coase developed an endogenous growth model referred to an institutionalism, which viewed the entrepreneur as an orchestrator of production within a company, which he saw as a vital role given that resources within the firm are not allocated utilising pricing; however, outside of the firm, price movements direct production (Wennekers & Thurik, 1999).
	Post modernism, Leibenstein, (1968 – 1979)	Leibenstein developed an endogenous growth model referred to as X-efficiency which described "the degree of inefficiency in the use of resources within the firm… [and in the inability of a firm to] realise its productive potential" (Wennekers & Thurik, 1999, p. 32). Leibenstein viewed entrepreneurship as a creative answer to X-efficiency with a firm.
Neo-German theory	Joseph Schumpeter, (1885 – 1972)	Schumpeter viewed innovation as an endogenous variable that brings about economic change and an entrepreneur as a leader and innovator. However, in a 'Schumpeterian society', entrepreneurs are not managers, nor capitalists nor the bearers of risk, but rather entrepreneurs constantly influence the economy to alter the equilibrium position, and thus are seen as creative destructors of market equilibrium. Entrepreneurship is synonymous with innovation and unless an entrepreneur continuously innovates, entrepreneurship is a temporary phenomenon (Grebel et al., 2001; Praag, 1999).
Neo-Austrian theory	Kirzner, (1973)	Neo-Austrians believe that the probability that the market will reach an equilibrium position is highly unlikely. Both Kirzner and Schumpeter criticised the merits of general equilibrium theory. Kirzner highlighted the importance of market process as part of the economic system and described this concept as a continuous revision of plans to match market situations. An entrepreneur in this context is an economic agent, which is alert to profitable opportunities that arise because of the situation of disequilibrium. A Kirznerian entrepreneur is an equilibrium creating economic agent that operates within a competitive environment and has the freedom to enter markers in order to compete for profitable opportunities (Grebel et al., 2001; Praag, 1999).

However, the merits of entrepreneurship have become hard to ignore and the premise that larger firms with economies of scale, capital and technology will prosper and survive became nullified in the 1980s with the subsequent increase in competitiveness of small firms (Wennekers & Thurik, 1999). Entrepreneurship still has definitional inconsistencies and its role in economic theory deviates depending on the perspective of the philosopher and unfortunately does not necessarily follow a natural order of progression, thus creating a gap in the ability for scholars to formulate a consistent theory of entrepreneurship (Grebel et al., 2001). As such, entrepreneurial theory needs to be developed utilising the integration of thinking from key scholarly work such that it is reflective of the complexity and multi-dimensional nature of entrepreneurship.

For the purpose of this study, like most modern theories of entrepreneurship post the Schumpeter era, this research used Schumpeter's theory as the foundational descriptor for entrepreneurship.

Even though the historical linear age of entrepreneurship lies in the economic remit, as economists were foundational in identifying and describing the phenomenon and its linkage to economic development, the understanding of "how" entrepreneurship occurs was further enhanced upon by behaviourists in the mid-twentieth century (Barreira et al., 2008).

David McClelland (1961) was the initiator of the 'behaviourist movement' and he focused his work on the underlying psychological traits of an entrepreneur. He developed two concepts, namely the need for power and the need for achievement, as motivational constructs that underpin a person's drive for behaving entrepreneurially (Barreira et al., 2008).

As a standalone approach to understanding entrepreneurial behaviour, research into entrepreneurial psychological traits have been inconclusive and have highlighted the limitations of only analysing a universal model effect in relation to singular taxonomy of influencing factors. Entrepreneurship is a phenomenon that is brought about by an ecosystem effect, influenced by the individual and environmental level antecedents from both an external environment perspective and an internal enabling environment context (Barreira et al., 2008).

As such, entrepreneurial advancements emanating from the behaviourist movement shaped the thinking of the structure of an entrepreneurial paradigm and subsequently how entrepreneurial activity and new value creation is generated. The entrepreneurial paradigm reflected a Lewinian conceptual framework where entrepreneurial activity is the outcome of the interaction between the individual and the external and organisational environment (Lewin, 1936). In 2021, what continues to plague the research domain, is that within the entrepreneurial paradigm, which antecedents “hold notable explanatory dominance” (Barreira et al., 2008, p. 17); an area of focus that this research aimed to progress.

2.1.2 Entrepreneurship: An Engine of Economic Growth

Entrepreneurship is widely considered the cornerstone of national competitive advantage, as it influences the functioning of markets and more importantly acts as a crucial enabler of higher economic growth (Wennekers & Thurik, 1999).

The deep research roots of the linkages between entrepreneurship and economic growth are based on the economy advancements made to address gaps identified in the neo-classical view of supply and demand, and drivers of equilibrium market dynamics. Neo-classical economic growth models acknowledge the role of entrepreneurship, as a contributing factor towards enabling market equilibrium, vis-a-vis a driving force of economic growth. Macro-economic growth theory assumes perfect information coupled with well-defined problems, which result in the ongoing establishment of perfect equilibrium. However, in reality this does not necessarily capture the complexity of real-world market dynamics nor does it warrant the need for innovation alertness or the pursuit of risk bearing opportunities. This theory assumes an operating environment that is void of uncertainty or ambiguity. In fact, supply and demand growth models do not account for technological change or the impact of knowledge creation (Wennekers & Thurik, 1999).

Unaccounted market dynamics are due to endogenous variables that have a circular effect on productivity; they influence growth in productivity but equally, productivity growth affects the performance of these variables. Thus, this

phenomenon cannot simply be explained by a narrow view of neo-classical growth models (Baumol & Strom, 2007).

Neo-Austrian views acknowledge the role of entrepreneurs through their specialised abilities to be able to identify and capitalise on profitable opportunities addressing either consumer needs or market inefficiencies after an external market influence. Whereas German economists conceptualise an entrepreneur as a creator of new combinations either in the form of new venture or business unit, new product or service, new process or business model, and finally new market or points of presence, which drive the continuous destruction of market equilibria (Wennekers & Thurik, 1999).

According to Schumpeter (1934), economic growth cannot be fully understood unless the role of entrepreneurship is accounted for. Thus, it is essential to synthesise the different perspectives of the role of entrepreneurship in economic development to account for the various gaps in economic models. Research has posited that an entrepreneur is a vital role player within the macro ecosystem with the proved ability to drive supreme echelons of growth, where the quantum is regulated by the quality of judgement and expertise of an entrepreneur. Entrepreneurs are integral to the natural workings of the market mechanism, as they can astutely forecast demand and make sound decisions regarding supply emanating from the exploitation of unnoticed opportunities that result in the reduction of waste and improvement of economic output (Baumol & Strom, 2007).

Porter (1990) posited the relational influence of entrepreneurship and economic growth in his national diamond model. Innovation is theorised as a direct indicator of entrepreneurship and not an intermediate variable linking entrepreneurship to economic growth. Intrinsically, innovation and entrepreneurship are considered the driving forces behind the “competitive strength of nations … [which in turn positively drives] … sustainable productivity growth of economies” (Wennekers & Thurik, 1999, p. 42). Porter’s (1990) research offers a distinctive theoretical foundation in illuminating the role that entrepreneurship plays in economic development and inevitably the growth of nations.

The relationship between entrepreneurship and economic growth including the functioning of markets can be dissected into three levels of analysis namely, individual, entrepreneur level, firm level, and macro level. There is a bi-directional relationship between the three levels of analysis where entrepreneurial behaviour drives positive firm performance that in turn drives the competitiveness of nations and subsequent economic growth. Similarly, economic growth creates more opportunities within the market that inevitably drives firm performance, which in turn motivates individual actors to behave more entrepreneurially (Wennekers & Thurik, 1999).

However, it is important to note that not all types of entrepreneurship lead to positive economic growth. Unproductive entrepreneurship or destructive entrepreneurship, characterised by rent-seeking behaviour and corruption, erodes economic progress and does not improve the lives and livelihoods of all citizens nor does it increase national productivity. Rather, it benefits the pockets of some, increases the inequality divide, and results in the mismanagement of national resources (Salgado-Banda, 2007). However, the path travelled by an entrepreneur is determined by the "rules of the game [within a nation, and the subsequent] payoffs in the economy" (Baumol, 1990, p. 899).

Two major positive roles that entrepreneurship plays in society segues productive entrepreneurship into economic growth. The first component relates to new entry and the second component relates to innovation (Wennekers & Thurik, 1999).

Government, from a socio-economic perspective, have championed the narrative around innovative entrepreneurship and the vital role that innovation plays in economic development (Wennekers & Thurik, 1999).

The heart of productive entrepreneurship centres around Joseph Schumpeter's (1934) 'Theory of Economic Development' and the primary role that innovating entrepreneurship plays in economic development. According to Schumpeter (1934), innovation "revolutionises the economic structure from within, incessantly destroying the old one [and] incessantly creating a new one" (Schumpeter, 1934, p. 83).

Schumpeter (1934) pioneered the philosophy of an innovating entrepreneur and described the person as an individual who is responsible for the set-up of an enterprise that is a direct result from the creation of products or services arising from new combinations. According to Lumpkin and Dess (1996, p. 142),

> Innovativeness reflects a firm's tendency to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new products, services or technological processes. Although innovations can vary in their degree of radicalness, innovativeness represents a basic willingness to depart from existing technologies or practices and venture beyond the current state of the art.

Innovation challenges the status quo and forces incumbent firms to re-invent themselves to remain relevant and safeguard the long-term sustainability of their business. Likewise, it creates hyper-competition within the operating environment, encouraging new global and local entrants into the market. The intensity of competition within a market in relation to both the number of competitors as well as the hostility and dynamism, contributes to higher levels of entrepreneurial activity, which affects downstream economic growth (Carree & Thurik, 2010).

According to Wennekers and Thurik (1999), the creation of new companies or the launch of a new venture within an existing organisation is a core attribute of entrepreneurship and start-ups play a pivotal role in re-achieving market equilibrium, diversification of national productivity, and enabling job creation.

2.1.3 Potential Drawback of Entrepreneurship in Africa

Entrepreneurship undoubtedly is regarded as a vehicle of capitalism, and Africa, according to Amaeshi and Idemudia (2015, p. 211), "is the last frontier of capitalism by the global market…, [which has provided context to the phrase] "Africa is on the rise". As part of the narrative of Africa rising, the number of successful entrepreneurs across the continent that are discovering innovative opportunities to exploit has been increasing. As real entrepreneurship grows, this

too becomes a proxy for economy development across the continent (Wennekers & Thurik, 1999).

Notwithstanding the benefits of globalisation and global capitalism, Africa has equally experienced significant drawbacks attributed to poor governance structures, unregulated capitalism, weak institutions, and widespread corruption, which “acts like sand in the wheels of economies and harms the performance of businesses” (Shepherd, Parida & Wincent, 2022, p. 185). Thus, contrary to neo-classical economic thinking, self-interest and individualism if not implemented responsibly, results in social instability in the interest of economic throughput (Amaeshi & Idemudia, 2015).

In order to mitigate the downside of driving capitalism in Africa, entrepreneurship and intrapreneurship must be driven not only from an economic mindset but rather from a socio-economic perspective. This entails that companies embrace shared-value as a philosophy that resides alongside corporate entrepreneurial behaviour, a term that Mr Tony O. Elumelu coined as ‘Africapitalism’, an economic philosophy that drives socio-economic transformation (Amaeshi & Idemudia, 2015). However, this research study did not explore the methodological framework supporting Africapitalism and further research is required into this epistemology that embraces African voices.

2.1.4 Opportunities for Entrepreneurship due to COVID-19

COVID-19 has affected lives and livelihoods, destroyed communities, and created a deep global economic recession, from which the world will take years to rebound. The impact of COVID-19 on global entrepreneurship can best be described as “the best of times and the worst of times” (Dickens, 1859/2012, p. 1), a tale of two paradoxical realties. The reality entails the devastating impact of the pandemic that has affected businesses across two dimensions. The first, a downstream value chain impact, where demand has been paused, resulting in diminished value or where customer needs and behaviours have fundamentally shifted. The second, an upstream value chain impact, where companies’ respective supply chains have been affected due to country protocols in managing

the spread of the virus, including closed borders and lockdown procedures (Li-Ying & Nell, 2020; Maritz, Perenyi, De Waal & Buck, 2020).

The alternative reality relates to the possibilities and opportunities that have arisen due to the pandemic. Unlocking these market opportunities and creating new possibilities requires the adoption of Schumpeter's philosophy to driving market disruption through continuous dynamic and disruptive innovation. Businesses can approach the market opportunity set through two corporate entrepreneurship lenses, first, creative destruction i.e., disrupting other markets through the introduction of new technologies and solutions, and second, creative accumulation i.e., cannibalising current market to attain long term sustainability and growth through the accumulation of market and technological knowledge (Li-Ying & Nell, 2020; Maritz et al., 2020).

The COVID-19 crisis is here to stay over the short- to medium-term and the ramifications of the crisis will inevitably redefine the world as everyone knew it. One's needs, behavioural patterns, methods of engagement, and collaboration will be fundamentally changed with the transition into the new and next normal. As such, "a firm's survival and success rests on the firm's ability to re-define strategies and develop capabilities to navigate new opportunities to innovate" (Li-Ying & Nell, 2020, p. 1). In addition, the firm must demonstrate an ability to create new value that addresses the shifts in the market by creatively solving new problems or by re-inventing current products and service offerings (Li-Ying & Nell, 2020; Maritz et al., 2020).

The kick-start of the global economy is dependent on the emergence of a new archetype of entrepreneurs, the necessity-opportunity entrepreneurs that are able to capitalise on the "exponential surge in opportunities" that have emerged during the pandemic and will continue to emerge, beyond the pandemic (Maritz, et al., 2020, p. 4612). This critical segment will allow entrepreneurship not to merely survive the crises but thrive, a key lever that will unlock new value and facilitate the rebound of the economy (Li-Ying & Nell, 2020; Maritz, et al., 2020).

Alone, individual-driven necessity-opportunity entrepreneurship is not enough. It must be complimented with the efforts of corporate entrepreneurship, where

traditional companies employ an entrepreneurial mindset, build the right strategic capabilities and deploy ‘go to market’ strategies that entail redefining their business models and employing “customer centric creativity” (Li-Ying & Nell, 2020, p. 5) to solve the intrinsic needs and expectations of customers (Li-Ying & Nell, 2020; Maritz et al., 2020).

2.2 Corporate Entrepreneurship

This section theoretically evaluates corporate entrepreneurship as a firm level behaviour.

2.2.1 Innovating Entrepreneurship

Chen et al. (2005) believed that an innovative mindset is the embodiment of entrepreneurship. Although innovation did not feature in orthodox neo-classical growth theory, the ‘new’ endogenous growth theories have provided novel possibilities for integrating innovation into growth models.

In fact, Joseph Schumpeter (1934) pioneered the notion that entrepreneurship arising from pure innovation has significant explanatory power with regard to economic growth and coined the phrase ‘innovating entrepreneurship’ to describe this phenomenon. Innovating entrepreneurship was underpinned by five noteworthy market behavioural characteristics namely:

(1) The introduction of a new goods or of a new quality of goods,

(2) The introduction of a new method of production which is unproven,

(3) The opening up of a new market,

(4) The conquest of a new source of supply of raw materials or part manufactured goods, and

(5) The carrying out of a new organisation of industry (Salgado-Banda, 2005, p. 5).

Schumpeter (1934) further conceptualised a distinctive category of entrepreneurs referred to as an ‘innovating entrepreneur’, which are entrepreneurs that engage in innovative behaviour to deliver new combinations to the market that rival current technologies and products either by addressing an unmet customer need or by better servicing a current market need (Salgado-Banda, 2006; Wennekers & Thurik, 1999).

According to the ‘Theory of Economic Development’, by Schumpeter (1934), innovating entrepreneurship manifests itself in two forms that are pigeonholed for a period in which sustained innovation occurs. The first manifestation is referred to the process of creative destruction and is commonly denoted as the ‘Mark 1 regime’. In this process, innovating entrepreneurs of start-up companies or small firms challenge the business relevance of incumbent firms through the introduction of new inventions in the market or the creation of new business models (Carree & Thurik, 2010).

The second manifestation references the process of creative accumulation and is commonly signified as the ‘Mark 2 regime’. In this regime, large organisations or incumbent firms significantly increase their innovation throughput and degree of innovation to outperform smaller competitors and traditional competitors. The type of regime that underpins an industry depends on first, the rate of continuous innovation and second, the concentration within the market structure to enable small companies to thrive (Carree & Thurik, 2010).

Wennekers and Thurik (1999) theorised that Schumpeter’s creative destruction and creative accumulation philosophies are a richer and more pragmatic narrative for the inter-relationship between entrepreneurship and economic dynamics.

2.2.1.1 Corporate Entrepreneurship: A Multi-Dimensional Construct

Entrepreneurship transcends the domains of start-ups and small enterprises and exists in larger incumbents as a corporate entrepreneurial competence, which according to Drucker (1985) is an essential capability for market competitiveness and survival (Wennekers & Thurik, 1999).

Corporate entrepreneurship provides a firm with a capability toolkit that is extremely valuable as it provides companies with the expertise to convert organisational resources into value creation and competitive defences. This is accomplished by creating proficiencies that are difficult to imitate and delivering superior customer solutions that supersede that of their competitors (Scheepers, Hough & Bloom, 2008).

Extant research provides two discrete perspectives on the definition of corporate entrepreneurship. A sub-set of scholars including Dess, Ireland, Zahra, Floyd, Janney and Lane (2003, p. 352) conceptualised corporate entrepreneurship, “as the process through which individual ideas are transformed into collective actions through the management of uncertainties” thus applying a process lens in understanding corporate entrepreneurship.

Covin and Slevin (1991), Miller (1983), and Zahra and Covin (1995) formed part of the other grouping of scholars that all concurred that corporate entrepreneurship is a behavioural characteristic of a firm. Organisational orientation is predisposed towards frequency and impact of product innovation, firm-wide business proactiveness and competitive aggressiveness, and calculated risk-taking on the part of the intrapreneur and firm. For the purpose of this research study, Miller’s (1983) definition was adopted and hence corporate entrepreneurship was conceptualised as a behavioural ecosystem.

Extrapolating Miller’s (1983) thinking, the level of corporate entrepreneurial activity within a firm is related to the frequency and magnitude of innovation that a company undertakes, a firm’s aggressive pursuit of leadership within the marketplace and an employee’s level of comfort with risk-taking activities and being a bearer of risk.

Covin and Slevin (1991) were instrumental in positioning corporate entrepreneurship as a multi-dimensional behavioural construct that integrates three levels of analysis, namely intrapreneurial behaviour on the part of the employee, organisational entrepreneurial behaviour as a firm aggregate, and macro-level influencers on the part of environmental catalysts that collectively drive the entrepreneurial posture of a firm, as captured in Figure 2.1. Covin and Slevin (1991, p. 8) regarded, “firm performance as a function of both

organisational, as well as individual level behaviour", moderated by the environmental context and operating paradigm of incumbents.

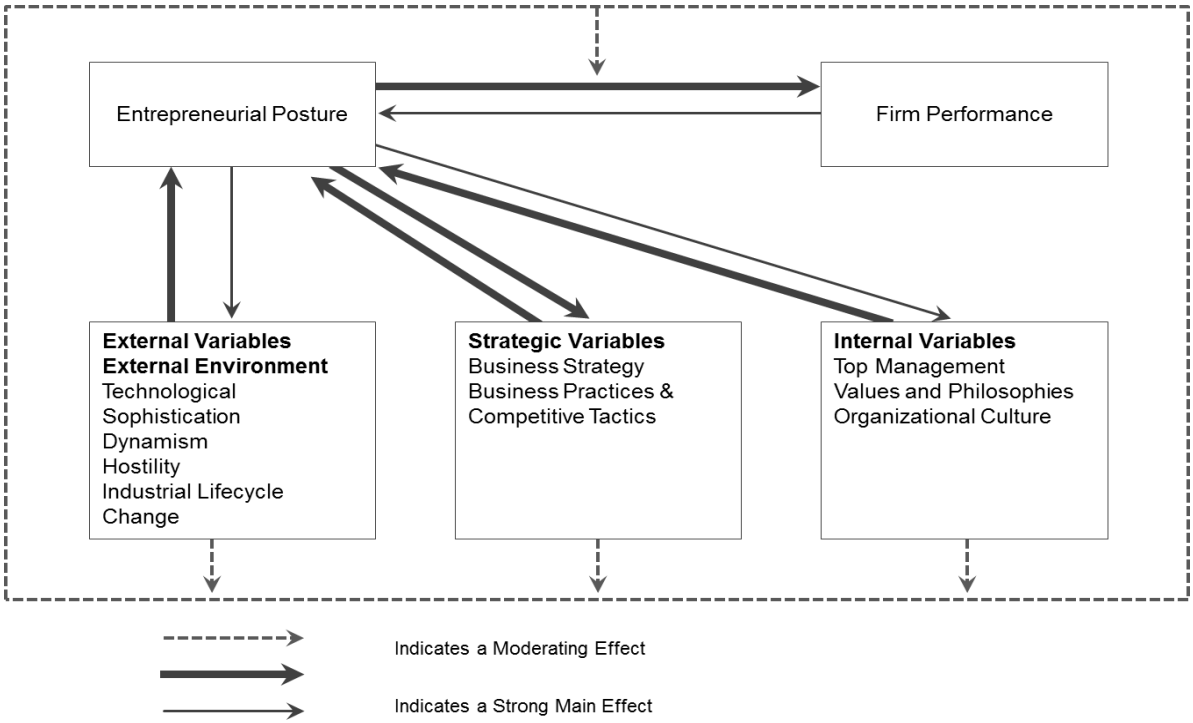


Figure 2.1: Conceptual model of entrepreneurship as a firm behaviour

(Source: Covin & Slevin, 1991, p. 10)

Other scholars like Guth and Ginsberg (1990), Kuratko, Hornsby et al. (2004), and Ireland et al. (2009) concurred with Covin and Slevin's (1991) corporate entrepreneurship deductions that firm level corporate entrepreneurship behaviour is a multi-dimensional construct. As such, antecedent behavioural influence on corporate entrepreneurial activity does not exist in isolation of the organisational system.

2.2.1.2 Corporate Entrepreneurship: Link to Economic Development

Wennekers and Thurik (1999), theorised that as economies advance, there is almost an equal quantum of both Schumpeterian start-ups and intrapreneurship, as intrapreneurship is seen as a business imperative to sustainable growth and market outperformance in the 21st century. Corporate entrepreneurship leads to the displacement of archaic firms, greater company productivity and efficiency,

expansion of sectors, and creation of new market niches, which together lead to the subsequent regeneration of the productive potential of economies (Wennekers & Thurik, 1999).

Extant research has supported the thinking around corporate entrepreneurial capability playing an essential role in large business survival and strategic transformation of incumbent and large companies. Corporate entrepreneurship influences the economic advancement of a country (Chen et al., 2005), through two lenses, first from a long-term perspective by stimulating market competitiveness, firm profitability, and growth. Second, from a short-term perspective, corporate entrepreneurship leads to company downsizing, which creates opportunities for the formation of new spin-off ventures resulting in growth (Wennekers & Thurik, 1999).

2.2.1.3 Corporate Entrepreneurship Domains

Corporate entrepreneurship is an ability of corporates to behave entrepreneurially and manifests within organisations in three distinguishing ways. First, corporate venturing that entails the creation of new businesses or the formation of new business units, symbolic of a Mark 1 regime (Caree & Thurik, 2010). Second, strategic renewal or transformation of existing organisations, symbolic of a Mark 2 regime (Caree & Thurik, 2010), and third, leading disruptive innovation that redefines industry rules, which drive both corporate venturing and strategic renewal (Wennekers & Thurik, 1999; Zahra & Covin, 1995).

Morris, Kuratko and Covin (2010) classified corporate entrepreneurship into two major domains based on the manifestation type, corporate venturing and strategic entrepreneurship. Corporate venturing is inclusive of activities that directly lead to the creation of new organisational business lines or results in the external generation of spin off businesses. Whereas strategic entrepreneurship is underpinned by transformational activities and driven by innovation that enables a market competitive advantage.

Strategic entrepreneurship entails business rejuvenation in an incumbent's strategy, their business model, their customer value proposition and products, their footprint, and the internal wiring of their business in relation to the

organisational structure, capabilities, and processes. This involves the concurrent running of the business, advantage seeking activities and transforming the business, and opportunity seeking activities, which are centred on a diverse array of innovation performance (Kuratko & Audretsch, 2013, Schroder, Tiberius, Bounchen & Kraus, 2021).

This research study hones into the domain of strategic entrepreneurship and the value drivers of corporate entrepreneurial performance. This needs to be augmented with system thinking to reflect the social reality of firm level entrepreneurial behaviour accurately. It suggests that the degree of influence that an antecedent has on corporate entrepreneurial behaviour is dependent on the antecedent. Furthermore, the integration and interrelationships between the capability and willingness of the employee workforce to engage in intrapreneurial behaviour, the favourability of the organisational climate to drive entrepreneurship, and external environmental triggers, work together to achieve a punctuated system equilibrium of organisational strategic renewal and transformation. Antecedent behaviour does not exist in isolation of the organisational system (Chen et al., 2005; Johnson, Kast & Rozenzweig, 1964; Kuratko, Hornsby et al., 2004; Schroder et al., 2021).

2.3 Corporate Entrepreneurial Performance Ecosystem Theoretical Framework

2.3.1 Dynamic System Conceptualisation of Corporate Entrepreneurship

A scholarly analysis of modern entrepreneurship literature surfaces a spectrum of pertinent antecedents of corporate entrepreneurship behaviour. Equally, what is clearly demonstrated are multiple perspectives in relation to the true nature of entrepreneurship and how the spectrum of entrepreneurial antecedents is interrelated in both understanding and illuminating the crux of corporate entrepreneurship (Anderson, Dodd & Jack, 2012).

Theories have been criticised for their fragmentation that has arisen due to the nature of theory development emanating from analysing entrepreneurial

antecedents either in sub-component parts or in isolation from one another. As such, scholars lose sight of the comprehensive view of corporate entrepreneurship (Anderson et al., 2012; Etemad, 2004).

Atomised constructs of corporate entrepreneurship play a meaningful role in explaining component parts of the corporate entrepreneurial process, both in relation to its distinct influencing power on corporate entrepreneurial activity, as well as an atomistic component of a greater corporate entrepreneurial ecosystem, which literature has not captured in its entirety. As such, the whole corporate entrepreneurial ecosystem is materially different from the sum of the atomised parts of which it is constituted (Anderson et al., 2012).

Consequently, corporate entrepreneurship, like other organisational occurrence is best understood as an open system, as it accounts for the "dynamic complexity of corporate entrepreneurship" as a construct (Bloodgood et al., 2015, p. 384). An organisation in its entirety is a man-made open system which is based on the dynamic interplay among a company's external environment including the competitor landscape, employee workforce, internal environment and the end customer. It is an adaptive system of interrelated cogs working together to achieve collaborative goals both of the organisation and that of the employee however the outputs generated over time is a result of non-linear effects (Johnson et al., 1984, Bloodgood et al., 2015).

The corporate entrepreneurial process is multi-faceted, involves all employee levels in the organisation, a number of catalysts, and simultaneous efforts that are constantly adapting and responding to the magnitude of internal and external change. This results in a highly complex system that is dynamically interconnected; the long-term outcomes of corporate entrepreneurial activity cannot be simply pinpointed to a precise set of actions (Bloodgood et al., 2015). Thus, "corporate entrepreneurship creates order from the disorder that is wrought from constant and unpredictable change, [and is reflective of the Schumpeterian ideology of] creative destruction" (Anderson et al., 2012, p. 965).

The notion of complexity within the corporate entrepreneurship ecosystem not only explains the interplay between layers within an entrepreneurial system but more significantly it provides context to the reason for atomised constructs in their

individual capacity not fully explaining the corporate entrepreneurial construct (Kuratko, Morris & Schindenutk, 2015).

This begins to broaden the descriptive for the corporate entrepreneurial meta framework from being classified as an open system to being a dynamic complex adaptive system. The configurations that are created are both dynamic and fluid and the corporate entrepreneurial ecosystem adapts to cycles of change to reach the optimum state through numerous paths along its evolutionary intrapreneurial journey, thus simulating a “punctuated equilibrium” (Kraus et al., 2011, p. 62).

According to Anderson, Dodd, and Jack (1997, p. 964), the dynamic complex adaptive system is a “system of individual agents who have the freedom to act in ways that are not always totally predictable and whose actions are interconnected such that one’s agents actions changes the context for the other agent”.

The dynamic complex adaptive corporate entrepreneurial ecosystem constitutes three layers, the intrapreneur layer, the organisational layer, and the environment layer. Change induced by the environment, organisational setting, or employee acting as a change agent might result in a wave of change in other parts of the ecosystem, where the ultimate propensity for an organisation to transform depends largely on the quantum of corporate entrepreneurial activity within the system (Anderson et al., 2012).

The intrapreneur layer typically consists of employees who act as intrapreneurs within an organisational setting, where their actions and behavioural interactions drive corporate entrepreneurial activity. This layer possesses a distinct set of individual level psychological and sociological attributes, and is distributed across the employees within an organisation (Anderson et al., 2012).

The organisational layer typically constitutes firms from a population of companies within an industry. This layer exhibits firm-level entrepreneurial behaviour, which drives corporate entrepreneurial activity, and is distributed across firms within the market (Anderson et al., 2012).

The environment layer typically encompasses a market underpinned by processes, regulations, and practices that define the customary workings of the

market. It includes the influence of environmental forces of hostility and dynamism on both firms and intrapreneurs (Anderson et al., 2012).

Constituents of each layer interact with each other, the immediate and next layers in the ecosystem shape their corporate entrepreneurial behaviour, and they are implicitly rooted in the environment (Anderson et al., 2012).

This meta framework is an ideal fit when analysing corporate entrepreneurship as an integrated, multi-dimensional construct, and corporate entrepreneurial activity because of an ecosystem effect. Incumbent organisations create entrepreneurial ecosystems by knitting together antecedent networks through which innovative business models, products, and services are offered, and are centred on delivering unmet customer needs (Guth & Ginsberg, 1990; Hornsby et al., 1993).

2.3.2 Configuration Approach to Theory Development

The configuration approach was the backbone of this study, and is premised on the notion that the conceptual model is considered a dynamic, complex, adaptive, corporate entrepreneurial ecosystem, in which there is a complex, dynamic interplay between environmental- antecedent variables, organisational-antecedent variables, and individual-level antecedent variables. The organisation interprets various signals from the environmental landscape and transforms these inputs into competitive, disruptive outputs. It utilises patterns of correlated configurations to enable modern organisations to facilitate improved outcomes and new value creation (Kast & Rozenzweig, 1972).

The principles of equi-finality apply to a corporate entrepreneurial ecosystem where the target end state can be achieved through multiple optimal configurational routes dependent on a multitude of other influencing factors acting upon the system. As such, optimal configurational patterns can change over time, which is indicative of the punctuated equilibrium properties of an open system (Kraus et al., 2011).

Upon analysis of advanced research models specifically the mono-causal approach, either the universal approach or the contingency approach, and the configuration development approach, the latter is deemed an effective tool to

model the dynamic and complex reality of organisational behaviour within an open system construct, and does not result in an artificial over-simplification of corporate entrepreneurship. This research evaluated the impact of both the internal and external environment on corporate entrepreneurial performance but was equally able to examine the interface layer, which is the point between the external environment and the internal environment (individual and organisational) and its influence on the entire entrepreneurial system. As such, the conceptual model simultaneously aimed to analyse the dependencies and interdependencies among a large set of antecedent variables to ascertain specific relationship patterns among variables to determine optimal configurations that drive corporate entrepreneurial behaviour (Harms et al., 2009; Kraus et al., 2011).

In the development of the conceptual model for this study, the configuration approach adopted required an extensive literature review of the field of corporate entrepreneurship to ascertain the pivotal domains that influence corporate entrepreneurial performance within an organisation. In addition, the review examines the key antecedent variables within these domains, interrelationships among the variables and integral theoretical models that have shaped the thought leadership within this domain (Harms et al., 2009; Kraus et al., 2011).

The conceptual firm-level behavioural model underpinning this research study created an implementation model of a corporate entrepreneurship ecosystem by integrating previous theoretical models of corporate entrepreneurship, illustrated in Table 2.2, and objectively synthesised the vital constructs and variables required to achieve a sustained corporate entrepreneurship outcome. It equally extended previous theoretical models that evaluate corporate entrepreneurial behaviour; conducting exploratory empirical investigations to examine configuration effects and contingency effects within an embedment model of a corporate entrepreneurship performance ecosystem.

Table 2.2: Conceptual Behavioural Models of Corporate Entrepreneurship in Established Organisations

Model	Principal entrepreneurial phenomenon	Fundamental Assumptions	Key Constructs	Antecedent variables	Level of analysis
Covin & Slevin, 1991	Entrepreneurial orientation	Broadly depicts organisational system elements that stimulate firm-level behaviour in large established companies	Entrepreneurial posture, external variables, strategic variables, internal variables, firm performance	Technological sophistication, dynamism, hostility, industry life cycle stage, mission, strategy, business practices, top management, organisational resources, organisational culture, organisational structure	Multi
Ireland et al., 2009	Competitive capability and strategic positioning	Portrays corporate entrepreneurship as a strategy and not a separate phenomenon Portrays a pro-entrepreneurship organisational architecture, and entrepreneurial processes and behaviour as elements of a corporate entrepreneurship strategy shaped by an entrepreneurial vision and dominant logic	External environment, individual entrepreneurial cognitions, entrepreneurial strategy, pro-entrepreneurship organisational architecture, entrepreneurial behaviour, competitive capability, and strategic positioning	Structure, culture, resources, reward, competitive intensity, technological change, product-market fragmentation and emergence, beliefs, attitudes, values	Multi

Model	Principal entrepreneurial phenomenon	Fundamental Assumptions	Key Constructs	Antecedent variables	Level of analysis
Kuratko, Hornsby et al., 2004	Individual and organisational entrepreneurial activity	Interprets determinants of forthcoming individual-level behaviour through evaluations of organisational and individual entrepreneurial outcomes tested against expectation Process is initiated by a transformational trigger	Organisational antecedents, external transformation trigger, corporate entrepreneurial strategy	Rewards, management support, resources, organisational boundaries, work discretion	Multi
Hornsby et al., 1993	Corporate entrepreneurial activity	Evaluates the interactive process of organisational architecture and individual characteristics in achieving corporate entrepreneurship as a result of an external stimulus	Organisational characteristics, precipitating event, individual characteristics, corporate entrepreneurial activity	Management support, work discretion, rewards, time availability, organisational boundaries, risk-taking propensity, desire for autonomy, need for achievement, goal orientation, internal locus of control	Multi

Model	Principal entrepreneurial phenomenon	Fundamental Assumptions	Key Constructs	Antecedent variables	Level of analysis
Guth & Ginsberg, 1990	Corporate venturing and strategic renewal	Justifies that strategic renewal and corporate venturing is as a result of both internal and external triggers of organisational change	Environment, strategic leaders, organisation form, organisation performance	Competitive, technological, social, political, personal characteristics, values and behaviour, strategy, structure, process, culture, effectiveness, efficiency, stakeholder satisfaction	Multi
Kuratko, Ireland, Covin & Hornsby, 2005	Middle-level managers entrepreneurial behaviour	Central focus is on the motivational and organisational constructs that cause middle-level managers to act intrapreneurially	Organisational antecedents, middle-level managers entrepreneurial behaviour	Management support, work discretion, rewards, time availability, organisational boundaries	Multi

Upon synthesises of conceptual behavioural models of corporate entrepreneurship in established organisations and evaluation of the critical organisational and individual level antecedent variables that drive corporate entrepreneurial behaviour, the core conceptual behavioural models that underpinned this study were Guth and Ginsberg (1990), Covin and Slevin (1991), Kuratko, Hornsby et al. (2004), and Ireland et al. (2009). This theoretical framework created a predictive, embedment model of corporate entrepreneurship performance.

As such, there are four key theory anchors that formed the foundational framework, first, domain theory (Guth & Ginsberg, 1990), second, firm level entrepreneurship theory (Covin & Slevin, 1991), third, sustaining theory (Kuratko, Hornsby et al., 2004) and fourth, strategic integration theory (Ireland et al., 2009).

Each of the variables in the core models were analysed in relation to their direct and indirect causal relationships in the context of other antecedent variables. A set of critical variables were selected based on three evaluation criteria namely the natural intersection of antecedent variables from the core models, the juxtaposition of antecedent variables, and the application of core entrepreneurial theory, all of which extend variable description of constructs, as several organisational system components affect intrapreneurial activity (Covin & Slevin, 1991). The aim was to generate a set of critical constructs and variables that can account for a noteworthy percentage of the variance in corporate entrepreneurial behaviour, a research gap identified through the studies conducted by Kuratko, Hornsby et al. (2004).

This analysis is illustrated in Figure 2.2.

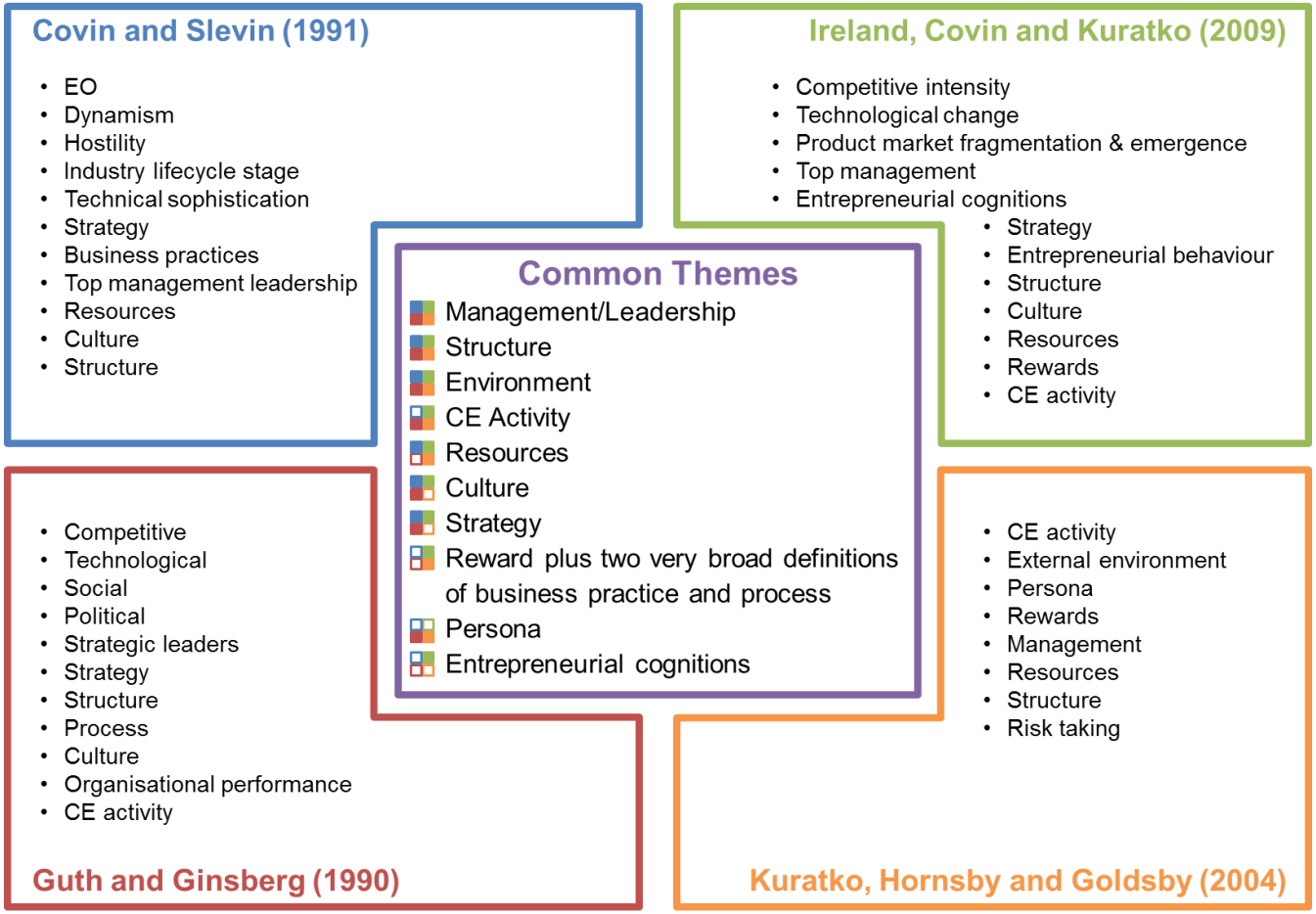


Figure 2.2: Theoretical framework

(Source: Own)

The core models converge on the necessity of having three constructs, environmental, pro-organisational architecture, and individual characteristics as stimuli of firm-level behaviour that intersect to achieve sustained corporate entrepreneurial activity. In relation to the specific intellectual domains, the proposed conceptual model selected eight domains which were analysed for applicability in creating a predictive, embedment corporate entrepreneurship performance model, as seen in Table 2.3.

Table 2.3: Theoretical domain analysis

Theoretical Domain	Core Conceptual Model Deductions	Theoretical reasoning
Corporate entrepreneurship	Corporate entrepreneurial behaviour was the construct that converged across the four models.	As the conceptual model was a corporate entrepreneurship firm-level behavioural model, corporate entrepreneurship activity was the endogenous construct selected. The definition of corporate entrepreneurship behaviour which is leveraged for the purpose of this research was a fusion of the definition proposed by Miller (1983), which reflects the competency profile of an organisation and Guth and Ginsberg's (1990) partial definition of corporate entrepreneurship, which emphasises transformation as a strategic renewal lever.
Leadership	Managerial impact and influence was deemed a critical element across all core models although the models differed in perspective in relation to the inclusion of the depth of managerial level that is vital within the corporate entrepreneurship process.	Given the different perspectives offered across the core models, managerial impact across all levels was included in the conceptual model as managers across all levels play a critical role within the corporate entrepreneurship process in large, established organisations (Phan, Wright, Ucbasaran & Tan, 2009), given the complexity of 'getting things done' and the proximity of influence. As inspiration and motivation play an intrinsic role within the corporate entrepreneurship process, the leadership construct was closely aligned with managerial support. It was further narrowed down to transformational leadership, which was included as an exogenous construct in the conceptual model given the specific competency profile of transformational leadership in relation to positively motivating entrepreneurship behaviours (Urban & Govender, 2018).

Theoretical Domain	Core Conceptual Model Deductions	Theoretical reasoning
Organisational culture	Organisational culture converged across the core models as a pivotal pro-organisational architecture construct.	Organisational culture was included as an exogenous construct in the conceptual model, which shapes the internal psychology of employees and influences the individual perceptions and entrepreneurial outcome relationship (Covin & Slevin, 1991).
Organisational strategy	Organisational strategy converged across the models as a primary driver of entrepreneurial behaviour and arguably the starting of deliberate action in entrepreneurial transformation (Ireland et al., 2009).	Organisational strategy was included as an exogenous construct in the conceptual model, as a driving force that initiates the entrepreneurial transformation process (Ireland et al., 2009).
Organisational structure	Organisational structure converged across all four models as a critical antecedent of corporate entrepreneurial behaviour.	Organisational structure and more specifically structural organicity was included as an exogenous construct in the conceptual model as it uniformly converged across all four models as a positive facilitator of entrepreneurial behaviour (Ireland et al., 2009).
Reward	The core models converged from a top-level perspective on the importance of business practices and processes, and in certain models highlighted a more narrowed focus of reward practices.	Since the conceptual model aimed to be a predictive implementation model, the constructs selected within the model could not be too broad such that the implementation effort loses impact. Given this context, reward practice was included as an exogenous construct in the conceptual model as reward is a pivotal motivational level for employee entrepreneurial behaviour, as illustrated by the expectancy model (Porter & Lawler, 1968).
Resources	Organisational resources and capabilities converged across the core models as a crucial pro-organisational architecture construct.	The definition of corporate entrepreneurial activity within the proposed conceptual model focused on organisational transformation utilising entrepreneurial practices, hence the requirement to allocate resources productively and build, collaborate, or buy new capabilities to achieve competiveness; this is a cornerstone of achieving firm performance through corporate entrepreneurship behaviour (Covin & Slevin, 1991).

Theoretical Domain	Core Conceptual Model Deductions	Theoretical reasoning
Entrepreneurial mindset	Only two models capture individual level constructs reflective of a broad range of constituent behaviour and both models concentrate on individual characteristics and entrepreneurial cognitions that act as a stimulus for entrepreneurial behaviour.	The conceptual model expanded the definition of entrepreneurial cognitions posited within the Ireland et al. (2009) study, to include entrepreneurial metacognitions as defined by the study conducted by Haynie and Shepherd (2009). The inclusion of the metacognition construct was justified leveraging the consolidation studies conducted by Barreira et al. (2013), who supported the fact that intentions and motivations to act entrepreneurially is driven by willingness and ability scripts. An entrepreneurial mindset is a highly developed ability cognition that enables employees to engage in entrepreneurial action. The study conducted by Urban and Wood (2017) validated the role that metacognitions play in explaining corporate entrepreneurial activity variance.
Entrepreneurial persona	Only two models have captured individual level constructs that transcend management level contribution, scholars Kuratko, Hornsby et al. (2004) focused on individual characteristics as part of their integrated study of previous corporate entrepreneurship models.	Even though numerous corporate entrepreneurship studies have highlighted an entrepreneur's individual characteristics as a foundational driver of entrepreneurial behaviour (Kuratko & Hornsby, 1998), studies have been inconclusive around the detail characteristics that form the exact premise for entrepreneurial behaviour (Kuratko, Hornsby et al., 2004). The study conducted by Kuratko, Hornsby et al. (2004) hypothesised the persona required; the conceptual model deepened this research by augmenting recent studies conducted in this domain to pinpoint an entrepreneur persona description that more accurately explains the variance in corporate entrepreneurial behaviour.

Theoretical Domain	Core Conceptual Model Deductions	Theoretical reasoning
Cultural values	Only two models capture individual level constructs that encapsulate contributions of organisational members within the corporate entrepreneurship process. Ireland et al. (2009) focused on entrepreneurial cognitions, specifically cultural values, which act as an antecedent for organisational members.	A pro-entrepreneurial disposition shaped by an individual's value and belief system influences organisational members' willingness to recognise and exploit entrepreneurial opportunities (Ireland et al., 2009), thus a cultural value system was included in the conceptual model.
Social networks	The social networks construct is not found in any of the core models.	The inclusion of the social network construct within the conceptual model was an extension of theory. The basis of inclusion was anchored on the argument that as organisations become more established over time, complexity in operations, management, communication, and the ability to 'get things done' becomes a common depiction of reality. As such, organisational constituents rely on well-established networks to accomplish day-to-day tasks effectively, and as a result narrow their pool of interaction and increase actors that play a centrality role and span of influence, creating an organic organisational inertia. Social networks thus become veins in an organisational system, in which organisational information flows, enabling a position of enterprise-wide influence. In the context of corporate entrepreneurship implementation, social networks significantly improve access to novel and privileged information, access to funds, sponsorship, and idea buy-in, ultimately increasing entrepreneurial effectiveness, and impact (Adler & Kwon, 2002; Floyd & Wooldridge, 1999).

Theoretical Domain	Core Conceptual Model Deductions	Theoretical reasoning
Dynamism and hostility	The external environment is a construct that converges across all four models, although the definitional attributes are significantly broader in some models.	Again, the argument is made that since the conceptual model aimed to be a predictive implementation model, understanding the relational influence of a large spectrum of environmental attributes could dilute the contribution this study delivered. The study conducted by Zahra (1991) was utilised to narrow the environmental variables to dynamism and hostility, as they provide both the yin and yang of environmental influence. Equally since the African banking industry is described as being both dynamic as well as hostile (Thulo, 2015; Arise, 2017; Marous, 2018), these two variables were a good descriptor of the environmental context within banking across the African continent.

The eight domains provided an integrated perspective on value drivers of the corporate entrepreneurship embedment process and delineated core relationships across the three levels of analysis that drive corporate entrepreneurial performance. The organisational value drivers of corporate entrepreneurship output were narrowed down to entrepreneurial strategy, entrepreneurial culture, transformational leadership, reward practices, organisational structure, and organisational resources. The employee value drivers of corporate entrepreneurship yield pointed to entrepreneurial persona, entrepreneurial mindset and network ties, whereas the external value drivers of corporate entrepreneurship harvest targeted dynamism and hostility.

As such, the embedment process model proposed in this model integrates the four underpinning theory frameworks, namely domain theory (Guth & Ginsberg, 1990), firm level entrepreneurship theory (Covin & Slevin, 1991), sustaining theory (Kuratko, Hornsby et al., 2004), and strategic integration theory (Ireland et al., 2009). These translate into an embedment theory and capability framework that encapsulates the dynamic complexity of corporate entrepreneurship, the multi-level analysis, and predictors of corporate entrepreneurship performance into an execution model.

2.4 Effectiveness of Corporate Entrepreneurship Performance in Africa

The value that is derived by incumbents because of corporate entrepreneurship has been solidified over decades of latent literature and empirical studies (Kuratko & Audretsch, 2013). However, most studies have been based on western markets, which are underpinned by a fundamentally different strategic context than that of Africa. Africa's history, cultural values, macro environment, education levels, and social and political landscape, influence the strategic context within which organisations operate. Hence, the entrepreneurial employee activity in Africa remains significantly lower than in developed countries (Bosma et al., 2021). The organisational effectiveness of African companies operating in a global business environment, remains their Achilles heel and a contributing factor to performance gaps in comparison to global multinationals (Zoogah et al., 2015).

The adoption of a corporate entrepreneurial strategy requires board approval and is dependent on the strategic risk appetite and tolerance set by the board, which informs the viewpoints of the board who are responsible for setting the strategic direction of the company. Board members' risk-taking perspective is influenced by the socio-economic dynamics within Africa, industry specific regulation (e.g., Basel III within the banking industry), access to resources, a supportive business environment and with that, the psychological and business safety nets that inform business confidence and influence market boldness and risk taking (Zahra, Filatotchev & Wright, 2009).

Given that corporate entrepreneurial performance is a factor of both the strategic and organisational context, according to Zahra (2015), the corporate entrepreneurial hubs, which are distinctive to an organisation and indicative of the knowledge creation process, varies in impact across organisations, counties and continents. Thus, since the strategic and operational contexts, between Africa and the West differ materially; this in turn influences the strategic appetite of companies in pursing CE outcomes. This is evident, reflecting on the data released by the S&P Global Market intelligence report, whereby regardless of the bespoke innovation that is manifested in a spectrum of Banks across the African

continent, no African bank resides within the world's 100 largest banks in 2023, although other developing counties do (Khan, Terris, Meggeson & Taqi, 2023).

Consequently, in Africa, the first obstacle in the pursuit of corporate entrepreneurship is adoption and the second is effectiveness of embedment. Thus, to achieve similar results as western countries in relation to corporate entrepreneurial relationship drivers and strength of relationships requires market maturity.

To overcome the drawbacks of the market maturity of Africa, and empower African companies to navigate organisational complexity and create order, where the levels of proficiency in corporate entrepreneurship across the African continent is lower than developed countries (De Villiers-Scheepers, 2012), it was important that a structured systematic embedment framework, applicable to the African context be developed. This framework informs the design and implementation of corporate entrepreneurial capability that delineates the key value driver, corporate entrepreneurship relationships, and informs the order of embedment and influence.

2.5 Organisational Level Theoretical Value Drivers of Corporate Entrepreneurial Performance

This section theoretically evaluates the relationship between organisational level entrepreneurial antecedents and corporate entrepreneurship performance.

2.5.1 Entrepreneurial Strategy

The exponential acceleration of change, globalisation, and the advancement of technology has resulted in the blurring of industry boundaries, product proliferation, and hyper-competition. Exogenous shocks to the external environment, like the coronavirus pandemic that is sweeping the globe, have equally fundamentally shifted needs and behavioural patterns of consumers (McKinsey, 2021b). This multi-layered business impact has created significant complexity, uncertainty and ambiguity in the global business landscape, which

necessitates established businesses to develop a competitive corporate entrepreneurship capability that will equip businesses to successfully navigate turbulent market conditions and transform business challenges into opportunities to outperform the market (Ireland et al., 2009).

To build and embed a corporate entrepreneurial capability effectively requires incumbents to adopt an entrepreneurial strategy as their distinct organisational strategy (Ireland et al., 2009). Having said that, the mechanics of a corporate entrepreneurial strategy and its underlying variable construct is not fully understood as it is an area of research that over the years has demonstrated a limited build-up of progressive knowledge. This has resulted in fragmented theories and concepts that inevitably make understanding the full workings of corporate entrepreneurial strategy more challenging (Ireland et al., 2009; Kreiser et al., 2021).

Ireland et al. (2009), debated whether corporate entrepreneurship strategy is a type of organisational strategy or whether it is a distinctive part of an overarching business strategy. Based on a critical review of latent research on the topic, this study supports the viewpoint that corporate entrepreneurial strategy is an integrated organisational strategy as it embodies a mindset and decision making framework. This framework permeates how a business views opportunity and risk, and the strategic choices and battlegrounds it chooses to pursue, and informs both the organisation’s strategic appetite and risk appetite including its subsequent resource allocation, which ultimately affects its market competitiveness (Crawford & Kreiser, 2015).

For the purpose of this research, the literary advances in corporate entrepreneurship strategy by Ireland et al. (2009) were vital to the cornerstone conceptual framework, including other studies that have utilised this framework as their research foundation. Ireland et al. (2009) leveraged an integrated system view of corporate entrepreneurial strategy, which was aligned with the thinking underpinning this research: corporate entrepreneurship is viewed as an open system.

The paper posited by Ireland et al. (2009) theorises corporate entrepreneurship strategy leveraging two components of Mintzberg's (1987a, 1987b) definition of strategy. As such, corporate entrepreneurial strategy is defined as both a perspective, which denotes intentionality, and as a pattern, which denotes a sustained behaviour that is transformed into a capability. Corporate entrepreneurial activity generates novel knowledge, which advances a company's ability to respond effectively to dynamic changes in the market and enables a firm to remain competitive through the various lifecycles of its business.

Thus, Ireland et al.'s (2009) integrated framework of corporate entrepreneurial strategy encapsulates both the strategy design and the outcome of effectively executing the corporate entrepreneurial strategy design, which is corporate entrepreneurial activity. For the purpose of this study, the two components of Ireland et al.'s (2009) integrated framework of corporate entrepreneurial strategy were dissected to isolate the influencing power of an effective design on corporate entrepreneurial activity.

Corporate entrepreneurial strategy design includes the vision of the organisation, the framework of strategic choices or battlegrounds, and the philosophy or strategic appetite of the business. This design is underpinned by a set of actions led by the top management team and role modelled by the wider leadership team (Jahanshahi, Nawaser, & Brem, 2018). It is a "vision directed, organisation wide reliance on entrepreneurial behaviour that purposefully and continuously rejuvenates the organisation and shapes the scope of its operations through the recognition and exploitation of entrepreneurial opportunity" (Ireland et al., 2009, p. 21).

At its core, corporate entrepreneurial strategy design infuses entrepreneurial thinking into the formulation of an organisation's strategy enabling a company to pursue both the maximisation of returns from traditional business lines, as well as proactively formulating market responses that innovatively address unfulfilled white spaces within the market. This enables a business to creatively address customer needs and unmet needs, as well as lead the customer, by creating new needs. Collectively, it enables the organisation to differentiate itself sustainably over the medium- to long-term (Ireland et al., 2009).

Optimal configuration of a well-articulated entrepreneurial strategy is underpinned by six attributes. The effective coverage of these attributes results in a cluster pattern of the corporate entrepreneurial strategy variable (Harms et al., 2009; Kreiser et al., 2021) that drives an entrepreneurial posture as the dominant logic of an organisation (Kuratko et al., 2011), namely:

(1) Establishing and communicating a vision of organisation-wide intrapreneurship and role modelling, by top management teams, a commitment to this vision through their actions (Jahanshahi et al., 2018; Kuratko et al., 2011).

(2) Increasing the organisational-wide perception of opportunity seeking and opportunity exploiting behaviour, which, according to Barreira et al. (2008, p. 143), creates a “pro-active posture of entrepreneurship” and inevitably drives entrepreneurial behaviour (Kuratko et al., 2011; Shane, 2000).

(3) Institutionalising change across the organisation and making change visible to colleagues as an inflection point that generates more opportunities and is an enabler of progression for the business (Kuratko et al., 2011).

(4) Distilling the desire and passion to be innovative, such that innovation is considered an everyday occurrence and a shared responsibility by all constituents of the organisation (Kuratko et al., 2011; Morris & Kuratko, 2002).

(5) Sharing both risks and rewards, which is a critical precept of intrapreneurial behaviour as it encourages companies and employees to take calculated risks through conducting experimentations and boldly pursing opportunities (Barreira et al., 2008; Kuratko et al., 2011).

(6) Instilling the important role failure plays as an opportunity to learn, grow through experience, and progress (Kuratko et al., 2011).

Corporate entrepreneurial strategy configuration clustering is dynamic in nature and therefore the clustering pattern informs the effective coverage within the opportunistic market, which is dependent on the constant evaluations of market

dynamics to ensure that business responses are still effective given shifts, accelerations, and hyper-competition evolutions in the market (Kreiser et al., 2021). The coverage and/or the alignment among the underlying attributes, its internal fit pattern, determines the likelihood of delivery against the proposed strategic design, resulting in an increase in corporate entrepreneurial activity (Crawford & Kreiser, 2015; Kraus et al., 2011).

Corporate entrepreneurial activities generate a new knowledge capital and capability within a business that becomes the basis of its market competitiveness. An entrepreneurial posture will not only enable an organisation to redefine itself, but also provide the catalyst to chart new directional paths to maintain its survival (Barreira et al., 2008).

Theorists, Guth and Ginsberg (1990), and Ireland et al. (2009) put forward in their respective models that strategy is an organisational-level driver of corporate entrepreneurship as corporate entrepreneurial activity is delivered through the cohesion of the vision and strategic intent of a company. The strategic choices and risk appetite of the incumbent is brought to life through the decisions and actions of the leadership of the business and the enduring behaviours of the employees of the organisation (Crawford & Kreiser, 2015; Kreiser et al., 2021). Covin and Slevin (1991) concurred in their model that strategy is a pivotal influencer of an entrepreneurial posture and firm performance.

Thus, the following hypothesis was formulated:

- *H1a:* A distinctive strategy archetype of corporate entrepreneurial strategy in African companies positively influences the degree of corporate entrepreneurial performance within the South African banking industry.

2.5.2 Entrepreneurial Culture

Organisational culture is the soft wiring of the organisational inertia and the modus operandi within a business. Strong, consistent organisational cultures exhibit a corporate DNA crafted through a common set of behavioural practices and a set of shared values and norms. These permeate all levels of the organisation and are

encouraged by a sub-set of motivational drivers comparable to the environmental context (Venter et al., 2010). An incumbent's culture ethos is inevitably aligned to the overall vision and strategy of the company, driven by its top-leadership, a pivotal driver of strategic outcomes, as well as a critical dependency for organisation wide decision-making. It equally facilitates the manner in which an organisation arranges itself and co-ordinates strategic outcomes, as employees are working off the same assumptions, and are therefore able to understand each other and the unsaid dynamics among colleagues and across business lines. A strong culture is a cultural pattern that displays a homogeneous profile as it is created through a dominant purpose and shared culture attributes that are reinforced by all constituents of the company, and in which all colleagues are aligned to a common ethos and vision of the company (Kuratko et al., 2011; Paunovic & Dima, 2014).

Homogeneous organisational cultures have a duality effect, with the ability to revitalise a business by stimulating change and/or transformation, and infusing a deep-seated comfort in continuous change. The other side is its ability to reduce conflict, as the motivational drivers, values, and purpose among employees are harmonious and therefore drive a common understanding and as such, common ground can be reached efficiently. More importantly, a company's culture shapes colleagues' perspectives, and influences their behaviour at work, creating a sense of emotional alignment with the organisation, and instilling an emotional commitment to the company. A positive culture leverages and enhances employees' strengths; it is perceived as rewarding and prioritises both the growth and learning of its employees as well as the effectiveness of the organisation (Paunovic & Dima, 2014).

Organisational culture is a critical factor in the business performance of a company as it influences employee behaviour in a myriad of ways as well as acts as a control framework for "desirable and acceptable behaviour" (Singer, Alpeza & Balkic, 2009, p. 220). Similarly, an archetype of an entrepreneurial culture enables companies to create new growth value by designing new and novel paths and capabilities for sustainable competitive advantage. An entrepreneurial culture enables an organisation to adapt quickly to constant market shifts, exude market

prowess, and display business response flexibility and market leadership through creativity and innovation (Singer et al., 2009).

Extant research has proved that an entrepreneurial culture is a pivotal driving force of an organisation's success, as it acts as a stimulus for idea incubation, time to market accelerator, and business performance multiplier. Thus, entrepreneurial culture is a fundamental prerequisite catalyst for the existence of an intrapreneurial organisation (Barreira et al., 2008).

However, the underlying organisational ingredients of an entrepreneurial culture have been the focus of many theoretical frameworks and empirical research studies. Synthesising different theories proposed by Ireland et al. (2009) and Kuratko et al. (2011), an entrepreneurial culture is underpinned by numerous instrumental attributes: focus on people and empowerment, value creation through innovation and an emphasis on proactive future forward practices, accountability and ownership, and share of risk and reward. In addition, growing and learning through failure, leadership support and endorsement for intrapreneurial behaviour, autonomous structures and practices, and overriding purpose and emotional commitment are further attributes (Bau & Wagner, 2015; Kruszelnicki & Breuer, 2020).

Ireland et al. (2009) argued that these cultural attributes encourage the formation of cultural norms that favour entrepreneurship, and reinforce and perpetuate the degree and frequency of entrepreneurial behaviour in companies. This is because employees knit together a perception of the organisation's strategic appetite towards corporate entrepreneurial actions based on their experience of the 'smell of the place'. This experience is created through sufficient data points that suggest that these underlying corporate entrepreneurship culture ingredients exist, which becomes re-enforced through organisation wide experiences of fellow colleagues, including stories and successes that are celebrated within the company (Kruszelnicki & Breuer, 2020; Kuratko, Hornsby et al., 2004).

The presence of the underlying cultural ingredients and effective coverage and clustering across all the attributes informs a corporate entrepreneurial pattern, which shapes the corporate DNA of the organisation. It also alters the inertia of the

company and increases the propensity of the business to engage in sustained entrepreneurial behaviour both at an individual level as well as collectively as an organisation (Harms et al., 2009; Jones, 2014; Kuratko, Hornsby et al., 2004).

According to Timmons' (1999) chain of greatness model, pro-entrepreneurial culture fosters an entrepreneurial mindset, and values that drives both individual level performance and organisational level performance to enable long-term sustainability. Guth and Ginsberg (1990) in their corporate entrepreneurship model concurred with this viewpoint that a pro-entrepreneurial culture drives corporate entrepreneurial performance.

According to Covin and Slevin (1991), positive organisational cultures are risk-taking, propensity for innovation, and the continuous search and exploitation of new opportunities based on emerging trends, market dynamics and consumer behavioural patterns (Ireland, Hitt & Sirmon, 2003). These shape the entrepreneurial posture of a business and drive organisational level entrepreneurship.

Thus, the following hypothesis was formulated:

- *H1b*: A distinctive culture archetype of entrepreneurial culture in African companies positively influences the degree of corporate entrepreneurial performance within the South African banking industry.

2.5.3 Entrepreneurial Structure

Organisational structure is a fundamental organisational design element that is required in the execution of a firm's strategy, enablement of the business growth agenda of an organisation, and the transformation of a company (Kraus et al., 2011).

The organisational structure of a company denotes the hard wiring of an organisation's ways of working characterised through its facilitation of communication flows throughout the organisation, the arrangement of authority and workflow relationships within an incumbent, and the allocation of jobs and

accountabilities within a company (Covin & Slevin, 1999; Ireland et al., 2009; Srivastava & Agrawal, 2010).

Organisational structures of firms consist of two major archetypes, namely organic or mechanistic designs. The organisational designs that underline the structural archetypes are the centralisation or decentralisation of the organisation and the number of organisational layers within a company hierarchy structure (Covin & Slevin, 1991; Nayager & Van Vuuren, 2005).

Extant literature and empirical studies validated the significance of organisational structure that enables and inhibits corporate entrepreneurship activity, by empowering or restraining opportunity exploration and exploitation actions within a company (Covin & Slevin, 1991; Kraus et al., 2011). “Organisational structure is designed to help the entrepreneur in allocating work, resources and administrative mechanisms (which give rise to capabilities) necessary for the implementation and control of the strategies of the firm” (Kraus et al., 2011, p. 66).

According to Covin and Slevin (1991), an entrepreneurial posture positively influences higher performance outcomes of an organisation when managed through a suitable organisational structure. Research scholars, Srivastava and Agrawal (2010), posited that designing and implementing an organic structure, should be the primary priority for companies that want to flourish in driving corporate entrepreneurship activity. Kuratko et al. (2011) and Ireland et al. (2009) both converged on the viewpoint that corporate entrepreneurial behaviour is best administered through organic structures as opposed to mechanistic structures.

Organic structures are inclined to be decentralised organisational designs, which mirror flatter organisational layers, distributed divisions of labour, broader spans of control, and favours expertise-based power positions. The effectiveness of the underlying design elements of an organic organisational structure creates a dynamic organicity-clustering pattern that results in flexibility in design, and allows the efficient response to environmental changes, decisive and risk-based decision-making, and fluid information flows between individuals and business units. Equally, distributed leadership enables creative problem solving and innovation

(Covin & Slevin, 1991; Harms et al., 2009; Nayager & Van Vuuren, 2005; Srivastava & Agrawal, 2010).

Organic organisational structures are an essential catalyst for entrepreneurship as it provides employees with a sense of empowerment and the room to innovate, fail, grow, and collaborate easily across the organisation (Kuratko et al., 2011). Barreira et al. (2008) theorised that an intrapreneurial organisation characterised by having a structural organicity, has a proclivity towards idea sharing and innovation, and promotes proactiveness towards anticipating and responding to market changes. Furthermore, organic structures enable the sustenance of an organisation as it creates flexible structures that allow organisations a vehicle to maximise value creation of scarce resources, which is achieved using innovative thinking (Barreira et al., 2008).

The sustaining corporate entrepreneurship model, created by Kuratko, Hornsby et al. (2004), and the corporate entrepreneurship model created by Guth and Ginsburg (1990) concurred that organisational structure is an organisational-level antecedent for driving an entrepreneurial outcome and positively influencing levels of corporate entrepreneurship performance in an organisation.

Thus, the following hypothesis was formulated:

- *H1c:* An organic operating structure of an African incumbent organisation positively influences the degree of corporate entrepreneurial performance within the South African banking industry.

2.5.4 Entrepreneurial Reward Practices

Entrepreneurship is considered a critical pathway for organisations to step up their velocity of change in the global arena. Entrepreneurship requires employees to take personal risk, become comfortable with ambiguity, endure higher stress levels, allocate time for untested approaches, and continuously challenge the status quo (Kuratko, Hornsby & Covin, 2014).

Reward practices incentivise people to behave intrapreneurially, and take accountability and ownership for the long-term success of the company (Hornsby,

Kuratko & Zahra, 2002; Kuratko et al., 2011). Ireland et al. (2009) along with Kuratko et al. (2014) posited that reward is a vital organisational architecture that enables and drives intrapreneurial behaviour. Kuratko et al. (2014) further hypothesised that reward frameworks are in fact a primary determinant of intrapreneurial behaviour of top-level and middle level manager within organisations.

The design of reward systems is established given individual performance parameters, as well as business achievements. To precipitate intrapreneurial behaviour, the reward system must factor into its design, company goals, 360-degree feedback, employee performance, and outcome-based incentives. However, the financial incentives must not be the only outcome of the reward system, it must include recognition dimensions that incorporate promotion, learning opportunities, as well as intrinsic rewards, driving a personal feeling of accomplishment and augmented decision-making autarchy (Srivastava & Agrawal, 2010; Urban & Nikolov, 2013).

Porter and Lawler (1968) formulated the expectancy model, “a model of motivation for entrepreneurial behaviour” (Kankisingi & Dhliwayo, 2022, p. 4). The model theorised that individuals within organisations are motivated to behaviour entrepreneurially and shoulder the personal risks accompanying corporate entrepreneurial activity. These include the ability to innovate, to pursue calculated risks, and to have a positive disposition towards proactive market behaviour, when the outcomes from both a recognition and a reward perspective meet or exceed an individual’s expectation (Kuratko et al., 2011).

To exceed an employee’s expectations, the reward system must demonstrate effective coverage across pivotal extrinsic and intrinsic aftereffects, thereby significantly reducing the perception of personal risk in terms of compensation risk, employment risk, risk of failure, reduced social standing, or loss in opportunity costs, holistically creating a view among employees of beneficiation (Urban & Nikolov, 2013).

Kuratko, Hornsby et al.’s (2004) sustaining corporate entrepreneurship model, equally posits that employees are strategic change agents and must be able to

reconcile positive upliftment of both extrinsic and intrinsic reward outcomes with engagement in entrepreneurial practices. According to Ireland et al. (2009), a strong relationship between a reward philosophy and framework effectively encourages an entrepreneurial posture and employee's disposition to behave entrepreneurially.

Thus, the following hypothesis was formulated:

- *H1d:* Entrepreneurial reward practices in African companies positively influence the degree of corporate entrepreneurial performance within the South African banking industry.

2.5.5 Transformational Leadership

The movement away from the ethos of management towards the philosophy of leadership has obtained noteworthy recognition in management research. Leaders are seen to play a critical role in navigating businesses through turbulent and aggressive economic environments to achieve sustainable long-term profitable growth. However, leadership is a complex framework that encapsulates the beliefs, mind-sets, behaviours, and actions of managers that enable them to influence and motivate their employees and followers to achieve desired organisational objectives and outcomes willingly and without the practice of coercion (Boukamcha, 2019; Verma & Mehta, 2020).

Extensive research in the field of leadership have converged on the perspective that business leadership plays a meaningful role in firm performance and displays influencing power over team and employee performance (Bass, 1985; De Jong & Hartog, 2007).

The construct of leadership is often described as the ability to influence "subjects' symbolic realm in order to move them towards certain actions and determine the time and scope of these actions" (Eyal & Kark, 2010, p. 125). Thus, leadership is the ability to impart a compelling vision and mobilise people to achieve a common goal.

Leadership style is a leader's personal strategy to achieve the daily and long-term demands of their job by galvanising and bringing employees along on the journey. Bass (1985), a pioneering leadership scholar, challenged conventional theories regarding leadership, and postulated that transactional leadership is not a full body concept with the explanatory power to describe the richness of the leadership construct in totality and is confined to the more rudimentary behavioural characteristics of a leader. Thus, Bass (1985), in addressing the gap in leadership literature, created a new leadership construct, referred to as transformational leadership.

Transformational leadership is the ability of an individual to create followers of employees and inspire them to engage in extra role behaviours, which collectively achieve a higher order purpose (Bass, 1985). Avolio et al. (1999), expanded on the transformational leadership research and intellectualised a full range leadership theory, which consisted of nine latent descriptors. Transformational leadership is a sub-set of the full range leadership theoretical framework, frequently referred to as the four Is, and constitute the underlying attributes of transformational leadership. They include idealised influence, inspirational motivation, intellectual stimulation, and individualised consideration.

Transformational leaders are charismatic people who inspire loyalty among their followers and exert influencing power over their subjects, which encourage idealised followers driven not by self-fulfilling goals but the collective betterment of the firm (Avolio et al., 1999; Boukamcha, 2019).

Transformational leaders paint a captivating vision for the future direction of the company and motivate employees to transcend their own egocentricities and collectively work together to achieve the common purpose and interests of the company over the long term. Followers become catalysts for change within an organisation and drive the business agenda of the leader and the sustainable business performance of the company (Avolio et al., 1999; Boukamcha, 2019).

Transformational leaders intellectually stimulate problem solving, creativity, and innovation, while encouraging disruptive thinking within companies. They encourage employees to become more aware of the workings and challenges of

the organisation to improve the understanding of their role in moving the business forward (Avolio et al., 1999; Boukamcha, 2019).

Transformational leaders reward follower behaviour by investing in coaching and mentoring of their followers and providing individualised consideration for the needs of their followers, deliberately working in partnership with their followers, to accelerate their career paths (Avolio et al., 1999; Boukamcha, 2019).

Eyal and Kark (2004) posited that due to the underlying attributes of transformational leaders, they are naturally predisposed to being entrepreneurial and becoming role models to their followers, hence driving entrepreneurial behaviour among employees, creating a nexus between transformational leadership and corporate entrepreneurship (Shafique & Kalyar, 2018). The four Is of the transformational leadership construct are in fact the underlying attributes that creates a transformational leadership cluster pattern based on the coverage and effectiveness of each underlying attribute. As such, transformational leaders can vary in their cluster patterns and cluster patterns can change over time, as transformational leaders become more experienced, leading to deeper effectiveness of the leader to drive entrepreneurial change (Boukamcha, 2019; Harms et al., 2009).

Transformational leaders through their capability profile drive an incumbent organisation's "entrepreneurial proclivity" (Ling, Simsek, Lubatkin & Veiga, 2008, p. 557). They inherit change readiness and trickle market savviness into the organisation such that employees are infused with market adaptiveness, intrinsic motivation, and self-efficacy that enables employees to respond creatively to the "vision of opportunity" presented with changing and turbulent market conditions (Ling et al., 2008, p. 557). This leads to internal transformation and strategic renewal through corporate entrepreneurial actions and the creation of new businesses, which inevitably grows a company's capability for corporate entrepreneurship (Ling et al., 2008; Shafique & Kalyar, 2018).

Several researchers from Chang, Chang and Chen (2017), and Shafique and Kalyar (2018) concurred with the hypothesis postulated by Ling et al. (2008), and empirically concluded that transformational leadership positively influences

corporate entrepreneurial behaviour, cementing transformational leadership's significance in fostering corporate entrepreneurship. This conclusion is equally valid in varying developing African market contexts, from South Africa (Urban & Govender, 2018) to Tunisia (Boukamcha, 2019).

This study's hypothesis was equally substantiated, when examining the impact of transformational leadership on innovation levels within a company, and risk-taking and proactive behavioural practices within a firm. De Jong and Hartog (2007) empirically proved that transformational leadership behaviour is positively related to innovative employee behaviour due to the influence exercised and encouragement employed by transformational leaders over the innovation lifecycle process. In fact, both Jung, Chow and Wu. (2003) and Gumusluoglu and Ilsev (2009) agreed that the transformational leadership construct has the most persuading power over organisational level innovation (Boukamcha, 2019; Chang et al., 2017).

According to Eyal and Kark (2004), transformational leaders inculcate a proactive mindset throughout the organisation, through their need and drive to bring about transformational change within a business and their direct influence of business agility and firm market responsiveness (Boukamcha, 2019; Chang et al., 2017).

Transformational leaders lead by example and display a propensity towards calculated risk-taking, taking the lead in creating ground-breaking innovation and navigating uncharted terrains in order to transform business performance (Gilley, Walters & Olson, 2002). Transformational leaders influence risk-bearing practices within their followers and instil team and firm efficacy that ensures employees and the company have the collective talent to deal with adversity and market ambiguity, and the proficiency to safely experiment and take planned risks to challenge the status quo (Chang et al., 2017; Ling et al., 2008).

Transformational leaders, through their actions and motive language align employees' values and purpose to that of the organisation's purpose and culture, influencing them to engage in extra-role behaviours entailing innovation, market proactiveness and risk-taking to generate new value for the organisation. In addition, empowering them with the resources to execute their entrepreneurial

initiatives and rewarding them for their behaviours (Boukamcha, 2019; Chang et al., 2017).

Thus, the following hypothesis was formulated:

- *H1e:* A distinctive leadership archetype of transformational leadership in African companies positively influences the degree of corporate entrepreneurial performance within the South African Banking industry.

2.5.6 Organisational Resources and Entrepreneurial Competencies

Entrepreneurship scholars have leveraged the tenets of a resource-based view of a company to contextualise the sustained performance differential among companies. A resource-based view advocates that the competitive advantage of firms are underpinned by its resource portfolio, and more specifically an organisation's ongoing acquisition, transformation, and divesture of its resource portfolio and the strategic bundling of its resources to create novel capabilities in order to implement and deliver the firms strategy (Ireland, Hitt et al., 2003).

According to Ireland, Hitt et al. (2003, p. 964), long-term competitive advantage and positive market position is driven by a company's "possession of valuable, rare, imperfectly imitable, and non-substitutable resources idiosyncratic to the firm and more than that is held by competitors". The type, quantum, and configuration of a firm's resource portfolio are highly dependent on the size, maturity, managerial decisions, and business environment in which a company operates, and as such, is dynamic and changes over time. Resource allocation and resource decision-making is driven by the dominant logic of a company, which is shaped by the key assumptions of a firm (Ireland, Hitt et al., 2003; Kraus et al., 2011).

To remain competitive over the long-term, companies must incrementally evolve their capabilities, and depending on potential exogenous shocks in the environment, may warrant a transformation of their capability set to collectively enable firms to capitalise on opportunities arising from market uncertainty and shifts in market dynamics. This distinctive capability profile is referred to as an entrepreneurial capability and enables incumbents to simultaneously have the

ability to identify and exploit new market opportunities and engage in advantage seeking behaviours. It is critically important that incumbents do not become market complacent such that a company's capabilities become core rigidities, inflexible to changes in the market, and thus disallow the generation of new value-creating capabilities. Periodic evaluation of the key assumptions underpinning the dominant logic is vital to prevent "decaying competitive advantage" (Ireland, Hitt et al., 2003, p. 978).

The bundling of resources to create an entrepreneurial capability consists of both tangible resources, in other words financial capital, and non-tangible resources. The latter has two important components, first human capital, in the form of both explicit and tacit knowledge and second, social capital. Financial resources enable an incumbent to set aside slack funding to recognise and execute intrapreneurial and innovative opportunities, as well as acquire other resources required to enable the organisation to engage in entrepreneurial behaviour. However, financial capital is more easily duplicated by market competitors than a company's intangible set of resources. Tacit knowledge is knowledge that is obtained over an employee's tenure in a company through their experiences, and represents uncodified know how of the company operations, competition, innovations, and new market opportunity scanning and execution. Building entrepreneurial capabilities is reliant on the organisation being a learning company, utilising the knowledge, skills, and experiences of its employees and coupling this with external knowledge to innovate, thus transforming its human capital into a source of competitive advantage. Through a shared sense of trust, value reciprocity, and collective purpose, both internal and external relationships formulate a basis of fresh knowledge that enables corporate entrepreneurial behaviour. Intangible resources create a stronger entrepreneurial capability as they make imitation very difficult (Ireland, Hitt et al., 2003).

The three essential resources and the bundling of these resources creates a clustering pattern of organisational capabilities that are dynamic over time due to the path dependant variation within the resource portfolio. As claimed by Ireland et al. (2009, p. 32), "an entrepreneurial capability exists when an organisation exhibits a systematic capacity to recognise and exploit opportunities". The ability

of the underlying resource portfolio to continually empower the company to engage in both opportunity seeking and advantage seeking behaviours, ascertains an incumbent's effectiveness to continually generate entrepreneurial-creating capabilities. Extant research has acknowledged that the resource set required for recognising opportunities versus exploiting opportunities differs, as the distinctive knowledge and capabilities required vary (Harms et al., 2009; Kraus et al., 2011).

Research scholars, Covin and Slevin (1991, p. 15), theorised that resources and organisational capabilities form the foundation for company action and sway the type of entrepreneurship a company engages in, either empowering or deterring corporate entrepreneurial behaviour within an incumbent as "entrepreneurial postures are resource consuming postures". An organisation's entrepreneurial capability is most intense when it is coupled with "idiosyncratic, heterogeneous opportunity recognition and exploitation resources that are valuable, rare, imperfectly imitable, and non-substitutable (Ireland et al., 2009, p. 32).

The sustaining corporate entrepreneurship model created by Kuratko, Hornsby et al. (2004) equally stated that resources serve as an organisational level antecedent that persuades employees to act entrepreneurially, which subsequently drives corporate entrepreneurial activity.

Thus, the following hypothesis was formulated:

- *H1f:* Organisational resources in African companies positively influence the degree of corporate entrepreneurial performance within the South African banking industry.

2.5.7 Hypothesis 1

The existence of a pro-organisational corporate ecosystem characterised by an incumbent's organisational level antecedent variables of leadership traits, corporate strategy, organisational culture, design structure, reward practices, and organisational resources positively influences the degree of corporate entrepreneurial performance within South African banking incumbents due to an ecosystem effect.

- *H1a*: A distinctive strategy archetype of corporate entrepreneurial strategy in African companies positively influences the degree of corporate entrepreneurial performance within the South African banking industry.

- *H1b*: A distinctive culture archetype of entrepreneurial culture in African companies positively influences the degree of corporate entrepreneurial performance within the South African banking industry.

- *H1c*: An organic operating structure of an African incumbent organisation positively influences the degree of corporate entrepreneurial performance within the South African banking industry.

- *H1d*: Entrepreneurial reward practices in African companies positively influence the degree of corporate entrepreneurial performance within the South African banking industry.

- *H1e*: A distinctive leadership archetype of transformational leadership in African companies positively influences the degree of corporate entrepreneurial performance within the South African banking industry.

- *H1f*: Organisational resources in African companies positively influence the degree of corporate entrepreneurial performance within the South African banking industry.

2.6 Individual Level Theoretical Value Drivers of Corporate Entrepreneurial Performance

This section theoretically evaluates the relationship between individual level entrepreneurial antecedents and corporate entrepreneurship performance.

In the entrepreneurial process model formulated by Shane et al. (2003), entrepreneurial action at a micro level, is a result of human agency and the nexus of an individual and their intrinsic willingness and capability to successfully engage with each step of the entrepreneurial process. This process is from opportunity recognition that entails scanning the environmental landscape, to sourcing new

market ideas that relate to either white spaces or under-addressed consumer needs to opportunity development and execution thereof. This is illustrated in Figure 2.3.

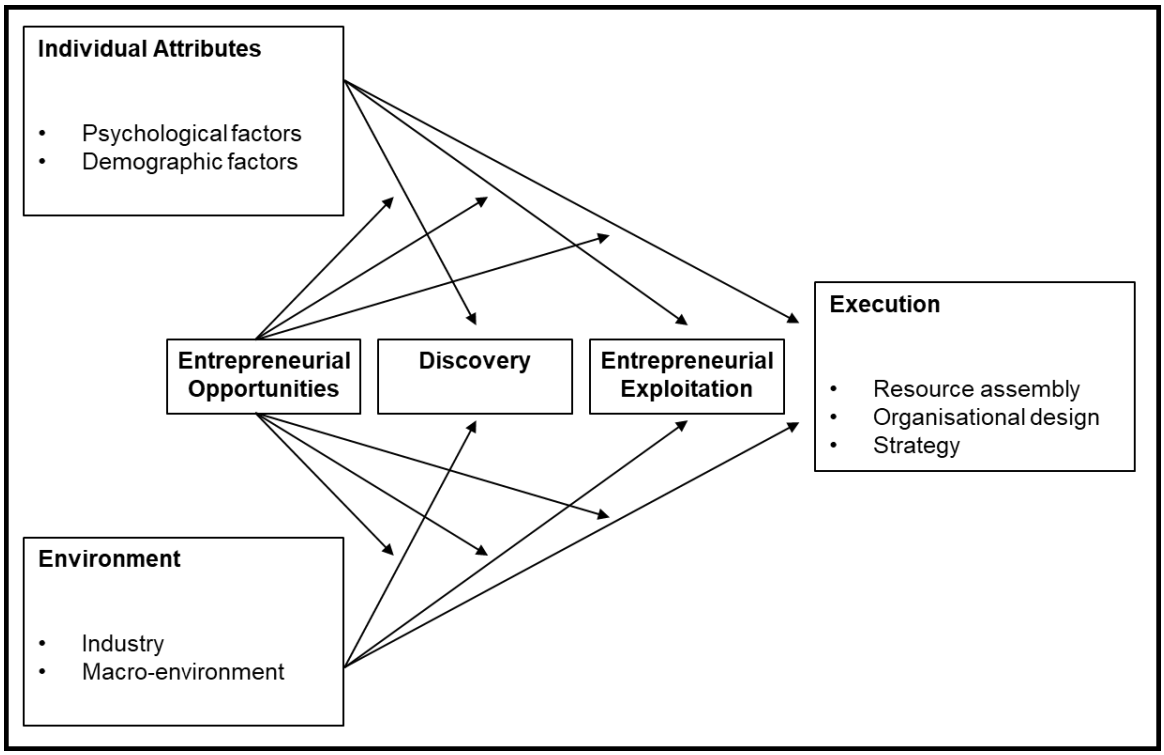


Figure 2.3: Model of the entrepreneurial process

(Source: Shane et al., 2003, p. 274)

The individual level entrepreneurial process happens due to a person's choice to pursue a market prospect and decision to engage further and endure the opportunity fulfilment process. Individuals, due to variations in their underlying willingness and ability makeup, differ in their engagement levels and outcomes generated in each step of the entrepreneurial process (Shane at al., 2003).

Arguably, some theorists like Shane at al. (2003), and Shepherd and Krueger (2002, p. 105), view the ability to demonstrate entrepreneurial opportunity identification as the most critical skill as it kicks off the entrepreneurial process and sets the other entrepreneurial steps in motion, cementing the concept that strategic "orientation towards seeing opportunities as being the heart of entrepreneurship".

This research study examined an entrepreneurial persona, an entrepreneurial mindset, and social networks as key frameworks that predispose an individual to entrepreneurial opportunity recognition and subsequent engagement, across the entrepreneurial behavioural process, influenced by an amalgamation of their personal willingness and their knowledge, skills, and capabilities.

2.6.1 Entrepreneurial Persona

According to Ardichvili et al. (2003), the ability to recognise an entrepreneurial opportunity and transition towards venture formation is preceded by a heightened awareness of knowledge, market patterns, consumer behaviour, and unmet customer needs. This is referred to as entrepreneurial awareness. They further posited that entrepreneurial awareness is bolstered by the personality traits of an individual and personality characteristics are antecedents to entrepreneurial behaviour.

Extant research, together with Ardichvili et al.'s (2003, p. 118) "model and units for the opportunity identification and development theory", has narrowed down on two particular traits that have consistently been linked to entrepreneurship performance, namely optimism and creativity.

Entrepreneurial optimism refers to the inherent belief in one's capability to achieve a desired ambitious goal and is directly linked to an individual's self-efficacy conviction. Self-efficacy leads to higher levels of optimism resulting in entrepreneurial opportunities being framed more positively as the perception of an individual's ability increases thus leading to higher engagement in entrepreneurial activities and a heightened sense-making of market opportunities, leading to increased levels of entrepreneurial opportunity identification (Ardichvili et al., 2003; Barreira et al., 2008).

Entrepreneurial creativity is the aptitude of a person to employ imagination to design novel products or solutions and achieve the art of the possible. The Kirznerian view postulates that creativity is in fact the mental capability of an individual "to recognise valuable opportunities under uncertainty and implement them as innovations in the market which prospectively create entrepreneurial

profits” (Palmer, Cesinger, Gelleri, Putsch, & Winzen, 2015, p. 196). As such, creativity is the precursor to innovation, which according to Schumpeter is synonymous with entrepreneurship. Thus, one could argue that creativity sits at the heart of entrepreneurship and plays an instrumental part in entrepreneurial management. The skill of creativity is deployed throughout the entrepreneurial process and is not localised to idea development but rather spans the process of opportunity development and execution, in other words, launching innovation into the market and identifying levels of entrepreneurial opportunity (Ardichvili et al., 2003; Barreira et al., 2008).

Shane et al. (2003) theorised a conceptual model denoting the framework of an entrepreneurial process and deduced that entrepreneurial outcomes are driven by a nexus between a person and entrepreneurship, which is principally accredited to the psychological or motivational attributes of a person resulting in the individual level behavioural process of opportunity discovery, exploitation, and execution.

The research study conducted by Shane et al. (2003) analysed extant research related to personality traits and deduced that mixed empirical findings are due to fundamental flaws in research assumptions related to equal motivational levels required in each entrepreneurial process. They concluded that the motivational drivers needed, and subsequent intensity of these drivers differs across the steps within an entrepreneurial process. Two motivational traits are ring-fenced, and have been reliable in influencing entrepreneurial behaviour across the various stages of the entrepreneurial process, namely need for achievement and locus of control.

McClelland (1961) argued that individuals that have a high need for achievement, lead roles, or tasks that demand higher individual accountability and control for the final outcome, subsequently leveraging their own skill to achieve the desired outcome within a moderate risk appetite. Individuals with a high need for achievement, have a greater degree of fit with entrepreneurial roles as they present stimulating challenges and future opportunities that match their personality style. Need for achievement is considered a differentiating motivational characteristic for entrepreneurs and for entrepreneurial performance (Collins, Hanges & Locke, 2004; Shane et al., 2003; Barreira et al., 2008).

A high internal locus of control is an intrinsic belief in one's own ability to control the outcome of a situation and to accept that fundamentally one is the architect of one's own destiny. Given the uncertainty that accompanies entrepreneurial action, resilience and belief that one can control the outcome regardless of the setbacks is crucial to first engaging in the various stages of the entrepreneurial process, and second to transition from one entrepreneurial process step to another (Shane et al., 2003; Barreira et al., 2008). A high internal locus of control works in unison with a high need for achievement as both motivational attributes converge in influencing entrepreneurial opportunity discovery, formulation, evaluation, and execution (Shane et al., 2003).

Synthesising studies conducted by both Shane et al. (2003), and Ardichvili et al. (2003), an entrepreneurial persona positively influences entrepreneurial action and performance.

Thus, the following hypothesis was formulated:

- *H2a*: An employee's persona is moulded by their locus of control, need for achievement, creativity, and optimism and positively influences the degree of corporate entrepreneurial performance within the South African banking industry.

    - *H2a.i*: An employee's motivational persona characteristic in terms of need for achievement positively influences the degree of corporate entrepreneurial performance within the South African banking industry.

    - *H2a.ii*: An employee's motivational persona characteristic in terms of locus of control positively influences the degree of corporate entrepreneurial performance within the South African banking industry.

    - *H2a.iii*: An employee's personality characteristic in terms of creativity positively influences the degree of corporate entrepreneurial performance within the South African banking industry.

- *H2a.iv*: An employee's personality characteristic in terms of optimism positively influences the degree of corporate entrepreneurial performance within the South African banking industry

2.6.2 Entrepreneurial Mind-Set (EM)

The cognitive horsepower of a person has gained progressively more scholarly interest as a robust precursor of individual level entrepreneurial behaviour. According to Mitchell, Busenitz, Lant, McDougall, Morse, and Smith (2002), this construct addresses the gaps in entrepreneurial knowledge to explain the complexity in entrepreneurial behaviour holistically. Gagilo and Katz (2001) concurred with this viewpoint and theorised that there is a nexus between the cognitive wiring of an individual and the entrepreneurial outcomes achieved by that person.

McGrath and MacMillian (2000) conceptualised an individual's cognitive horsepower as an entrepreneurial mindset, a thinking paradigm that is underpinned by metacognitive patterns. Haynie et al. (2010, p. 217) described it as, "deep-seated in higher-order mental processing or metacognitive processes that enable the entrepreneur to think beyond or reorganise existing knowledge structures and heuristics, promoting adaptable cognitions in the face of novel and uncertain decision contexts", thus enabling an intrapreneur to identify novel markets during conditions of environmental ambiguity.

Through the research conducted by Haynie and Shepherd (2009) and Urban (2012), the construct of an entrepreneurial mindset was honed to be the model of cognitive adaptability. Haynie and Shepherd (2009, p. 695) described it as "the ability to be dynamic, flexible and self-regulating in one's cognition, given dynamic and uncertain task environments," thus enabling self-regulation of cognitions and operating with agility when faced with uncertain and fluid business environments.

Metacognition can be defined as the ability to select and de-select cognitive strategies by engaging in reflective thinking and honing of one's self-awareness related to dynamic movements in the environment and the underlying root causes of these shifts. This enables new-fangled sense-making heuristics to develop on

the part of an employee that allows an individual to determine the most optimal course of action given an ever-changing macro and industry landscape, resulting in visionary strategic planning (Staw & Boettger, 1990; Urban, 2012).

Haynie et al. (2010) theorised that the supremacy of a person's cognitive adaptability is directly related to an individual's quantum of entrepreneurial performance. Urban (2012) concurred with the viewpoint put forward by Haynie and Shepherd (2009), in which the underlying latent cognitive adaptability variables that encompass the model of an entrepreneurial mindset are:

(1) *Goal orientation*: The range of personal, social and organisational goals a person pursues, which ultimately frames one's perspective of environmental changes (Urban, 2012).

(2) *Metacognitive knowledge:* The degree of a person's ability to craft numerous decision arrangements through self-awareness and emotional awareness of others (Haynie & Shepherd, 2009).

(3) *Metacognitive experience:* The extent to which an individual "relies on idiosyncratic experiences, emotions, and intuitions when engaging in the process of generating multiple decision frameworks focused on interpreting, planning, and implementing goals to manage a changing environment" (Urban, 2012, p. 21).

(4) *Metacognitive choice:* The process an individual follows to select a response strategy from an array of judgement configurations deemed fit for purpose given the continuously evolving external landscape (Urban, 2012).

(5) *Monitoring:* The extent to which an individual leverages feedback loops to reassess cognitive processing in relation to the four latent variables of cognitive adaptability (Urban, 2012).

The effective coverage and depth of skill in each of the underlying latent cognitive adaptability variables gives rise to the supremacy of a person's cognitive adaptability (Kraus et al., 2011). All five variables are intellectualised as an inter-connected thinking framework that influences the behavioural patterns and

performance of an entrepreneur (Haynie & Shepherd, 2009), thus an entrepreneurial mindset is the cornerstone construct of individual level entrepreneurial behaviour.

Cognitive psychology influences the process of employee level, entrepreneurial behavioural through three mediums namely entrepreneurial alertness, heuristics or prior knowledge corridors, and cognitive aptitude (Ardichvili et al., 2003; Gaglio & Katz, 2001; Kirzner, 1979; Mitchell, Smith, Seawright & Morse, 2000; Shane, 2000).

In 1973, Israel Kirzner conceptualised entrepreneurial alertness, which is a high order state of attentiveness and preparedness for absorbing new knowledge and learning that primes one to have an appreciation of the environmental forces at work within an industry setting. In addition, it encourages the discovery of new opportunities that are congruent with market dynamics without actively searching for them; rather these are based on a person's complex and adaptive mental schema to probe acute factors of the environment (Kirzner, 1979).

Entrepreneurial alertness underpinned by cognitive aptitude enables decisive decision making and lateral thinking on the part of the employee, which equips an individual to drive sustainable value creation through the manufacture and supply of product and service offerings under circumstances rife with market uncertainty and a heightened sense of anxiety (Baron & Ward, 2004; Gaglio & Katz, 2001).

Ardichvili et al. (2003) posited that a vital ingredient to unlocking behaviour that results in individual level entrepreneurial outcomes is an employee's knowledge spectrum or 'knowledge corridors' gathered through a multitude of experiences. These experiences are both formal and informal, obtained across various settings, and coupled with leveraging heuristics, which create the platform on which employees can transform market sentiment into market opportunity (Shane, 2000).

The superior cognitive workings of the mental scripts of an individual, unpacks in part, the differential employee entrepreneurial performance observed across members of an organisation. Mental maps infuse motivational drive or willingness cognitions with mental ability leveraging arrangement schema such as financial and/or social capital (Mitchell et al., 2000).

Shepherd, Patzelt, and Haynie (2010, p. 60) developed a conceptual framework coined the “entrepreneurial spiral”, which posits the interconnectedness between an entrepreneurial mindset and firm level corporate entrepreneurial thinking and activity.

According to Urban and Govender (2018), “an entrepreneurial mindset, due to its complex cognitive horsepower, enables employees to adapt and respond to varying environmental conditions, recognise opportunities under ambiguous circumstances, and creatively exploit opportunities to enable innovation and performance within the corporate domain” (p. 124).

Corporate entrepreneurial research studies conducted within the banking industry in Africa, confirmed that the latent variables of cognitive adaptability and subsequently the formative construct of an entrepreneurial mindset positively influences greater levels of corporate entrepreneurial performance within a company (Urban & Govender, 2018; Urban & Wood, 2017).

Thus, the following hypothesis was formulated:

- *H2b:* An employee’s cognitive ability and subsequent entrepreneurial mind-set in relation to goal orientation, metacognitive knowledge, metacognitive experience, metacognitive choice, and monitoring positively influences the degree of corporate entrepreneurial performance within the South African banking industry.

2.6.3 Cultural Values

Cultural values help navigate an individual’s attention towards stimuli in the organisational environment and serve as the filter for screening and interpreting motivational propensities (Barreira et al., 2008).

Although Hofstede’s (1983, p. 88) study did not conclude on the relationship between cultural values and entrepreneurship, it did conclude that companies and leadership “are culturally dependent” hence effective organisations are more culturally sensitivity. Building from this segue, the research study conducted by McGrath, MacMillan and Scheinberg (1992), which leveraged Hofstede’s (1980)

cultural dimensions as a diagnostic tool, deduced that there is in fact a common cultural pattern for entrepreneurs. Entrepreneurship is commonly associated with high power distance, high individualism, high masculinity, and low uncertainty avoidance. According to Barreira et al. (2008), entrepreneurial motivation is theorised as not only a direct correlation of culture and personality, but also the interaction between cultural values and personality, thus some scholars see cultural values as vital levers of entrepreneurial motivation.

Given the differing viewpoints and the non-convergence of theory regarding the impact that personal cultural values play within the entrepreneurial process, cultural values were not considered an individual level antecedent variable. However, given some early green-shoots evidence that cultural values as a variable should not be ignored in its entirety as it does play a variable role in understanding entrepreneurial behaviour, nationality, and its influence on cultural motivation; it was utilised as the first control variable within the theoretical model construct.

According to Woldu (2001, p.1), cultural values differ meaningfully “among African countries as well as between African countries” and Western economies. This converges with entrepreneurial activity differences across the African continent and between African and Western markets noted by the Global Entrepreneurship Monitor (GEM) global report (Bosma et al., 2021), given that social constructs directly influence an individual’s motivational disposition and subsequent entrepreneurial activity (Daspit, Fox & Findley, 2023).

2.6.4 Social Networks

In analysing the underlying factors that explain the differential entrepreneurial performance achieved by an individual, full justice cannot be done to the knowledge domain without unpacking the element of social capital, as entrepreneurial behaviour and social relationships are inextricably linked. Companies are made up of job roles within a job family that is linked to other roles and families through social networks that diffuse knowledge, capabilities, power, and affect. The linking of self-governing roles that are joined to a job family and

other families builds a series of inter-connections, which are part of an organisation's social network that enables the efficient execution of an employee's daily workflow activities (Floyd & Wooldridge, 1999).

Social capital was defined by Adler and Kwon (2002, p. 23) as "goodwill available to individuals or groups" that is leveraged in the form of access to various capitals. This is available to individual members and/or the group as a whole and "captures the knowledge embedded within, available through, and utilised by interactions among individuals and their networks of interrelationships" (Adler & Kwon, 2002, p. 23).

Social networks are deemed critical to company growth and corporate entrepreneurial attainment. Social capital provides access to social networks that become the gateway to enable the discovery of opportunities and access to a broader set of skills and resources to take advantage of the opportunities at hand, but equally act as a vehicle that accelerates the rate of entrepreneurial success. Social capital has the potential to generate sustainable value for a company, which is difficult to replicate (Barreira et al., 2013; Chang et al., 2019).

The relationship between social capital and entrepreneurial performance can be best understood as leveraging social network theory as a basis to localise underlying attributes that enable effective conversion of goodwill into entrepreneurial results. Two factors were examined to understand the behavioural dynamics; social influence embedded in social networks, and structural equivalence that accounts for an employee's ability to leverage goodwill to attain fresh intelligence and secure an influencing position and successfully convert knowledge into ideas, then into intrapreneurial action, and finally into, entrepreneurial performance. This is achieved by an employee overcoming their own personal fears related to altering the balance in their own working environment with the desire of pursuing innovation (Floyd & Wooldridge, 1999; Glaser, Fourne, Brennecke & Elfring, 2021).

Structural positions that exhibit network centrality possess organisational influence, which are privy to asymmetric information inflows and resources. Actors holding network centrality positions are primed to play the role of a broker within

the firm, as they are efficiently able to bridge structural holes within the network, linking unconnected colleagues, and thus forming new network flows. These flows facilitate knowledge, resources, and innovation exchange to enable new unique knowledge and capability permutations and the development and implementation of market opportunities. Thus, they can be viewed as change catalysts within the organisation (Floyd & Wooldridge, 1999; Glaser et al., 2021).

Structural equivalence denotes ties among circles of social relationships that give rise to diversity in social networks, described as a combination of strong ties and weak ties. Strong ties lead to cohesion in social ties due to similar value systems, beliefs and sentiments and drives trust among colleagues and an inherent faith of colleagues within the social network and their ability to deliver quality outputs, timeously. Strong social ties also create a highly collaborative network, where members' goals are aligned with company ambitions resulting in heightened levels of quality transmission of knowledge, learning and ideas. This enables problem solving, and solution development across business units and the application of new intelligence and learning to capitalise on emerging market opportunities, thus delivering enhanced entrepreneurial results (Chang et al., 2019).

According to Chang et al. (2019), collaboration and team cohesion is a critical team skill that leads to increased levels of innovation, corporate venturing, and strategic renewal activity. Strong social ties bring about loyal political network ties with key influential organisational leaders that provide employees with access to valuable political resources. This is vital in gaining favour with key powerful leaders and influencers within the organisation, thus quickly legitimising ideas and swaying key decision makers to buy into and invest in new initiatives that may even go against the grain of the dominant logic of the company (Floyd & Wooldridge, 1999; Glaser et al., 2021).

Weak social ties reflect a broader network of social relationships, emanating from both inside and outside of the organisation and according to social network theory. These are a rich source of asymmetrical intelligence that increase an employee's knowledge spectrum (Floyd & Wooldridge, 1999). Diversity in social networks is vital for entrepreneurship as it broadens and deepens an individual's or network cohort's access to global markets, innovation, sources of capital, capabilities, and

entrepreneurial opportunities, while increasing the adaptation to environmental change and uncertainty (Adler & Kwon, 2002; Venter et al., 2010).

Entrepreneurial behaviours depend on the fit of the underlying social capital resources available at different levels in the organisation, which combine into complex social capital configurations (Glaser et al., 2021). Optimal social capital configurations facilitate the identification of entrepreneurial opportunities, become the motivation driver for employees to act entrepreneurially, and enable their ability to exploit opportunities effectively. Thus, an individual's proclivity to behave entrepreneurially and to achieve entrepreneurial success is influenced strongly by an entrepreneur's social network and social capital (Adler & Kwon, 2002).

Thus, the following hypothesis was formulated:

- *H2c:* The depth and diversity of an employee's social network positively influences the degree of corporate entrepreneurial performance within the South African banking industry.

2.6.5 Moderation Influence

Extant entrepreneurial research contains an array of theoretical frameworks and models, which have strongly argued that entrepreneurial behaviour is as result of an individual actively engaging with the entrepreneurial process. More specifically, based on the principals of human agency theory, Bandura (2001) established that one of the key contributing levers in enabling the achievement of an entrepreneurial outcome is the motivational profile and cognitive capabilities of an entrepreneur. Mitchell et al. (2000) concurred with this viewpoint and attributed willingness and cognitive horsepower, which is mental ability coupled with arrangement schema, in other words social capital, as the underpinning driving force for individual level entrepreneurial behaviour.

Reuber and Fischer (1999), leveraging the Lewinian framework (Lewin, 1936), posited that the motivation to act entrepreneurially is the result of the interplay between an individual's personal characteristics and their personal environment. It can be argued that for an entrepreneur and founder of their own business,

environment is exclusively their industry environment; however, for a corporate employee that is not entirely the case. A corporate employee's environmental context is shaped just as much by the internal architecture of a company as by the market environment.

Augmenting the two theoretical frameworks of human agency theory and the Lewinian framework (Lewin, 1936), and extending these theoretical frameworks in light of the context of an intrapreneur, it can be argued that to deliver entrepreneurial activities within an incumbent setting requires engagement with the various stages of the entrepreneurial process. This is the result of two component parts of willingness: intrinsic motivation, which is the personal willingness of an employee, driven by an individual's persona and extrinsic motivation, which is driven by an enabling internal corporate climate and the predisposed entrepreneurial cognitive horsepower of an employee. As such, entrepreneurial activity on the part of corporate entrepreneurs is subject to a three-dimensional influencing plane; an additional consideration that influences intrapreneurs is because of the personal risks incurred by an employee. Thus, personal risk needs to be offset by an enabling environment that provides environmental tell-tale signs to employees that the internal climate shaped by the company strategy, leadership, culture, reward framework, and organisational structure and resources are all congruent with the narrative that entrepreneurial behaviour is encouraged and rewarded. Thus, extrinsic motivation driven by an enabling incumbent internal climate is an essential ingredient in the intrapreneurial response action equation: intrapreneurial activity is a function of intrinsic motivation (m_i) multiplied by extrinsic motivation (m_e) multiplied by cognitive horsepower (hp_c), as seen in Figure 2.4.

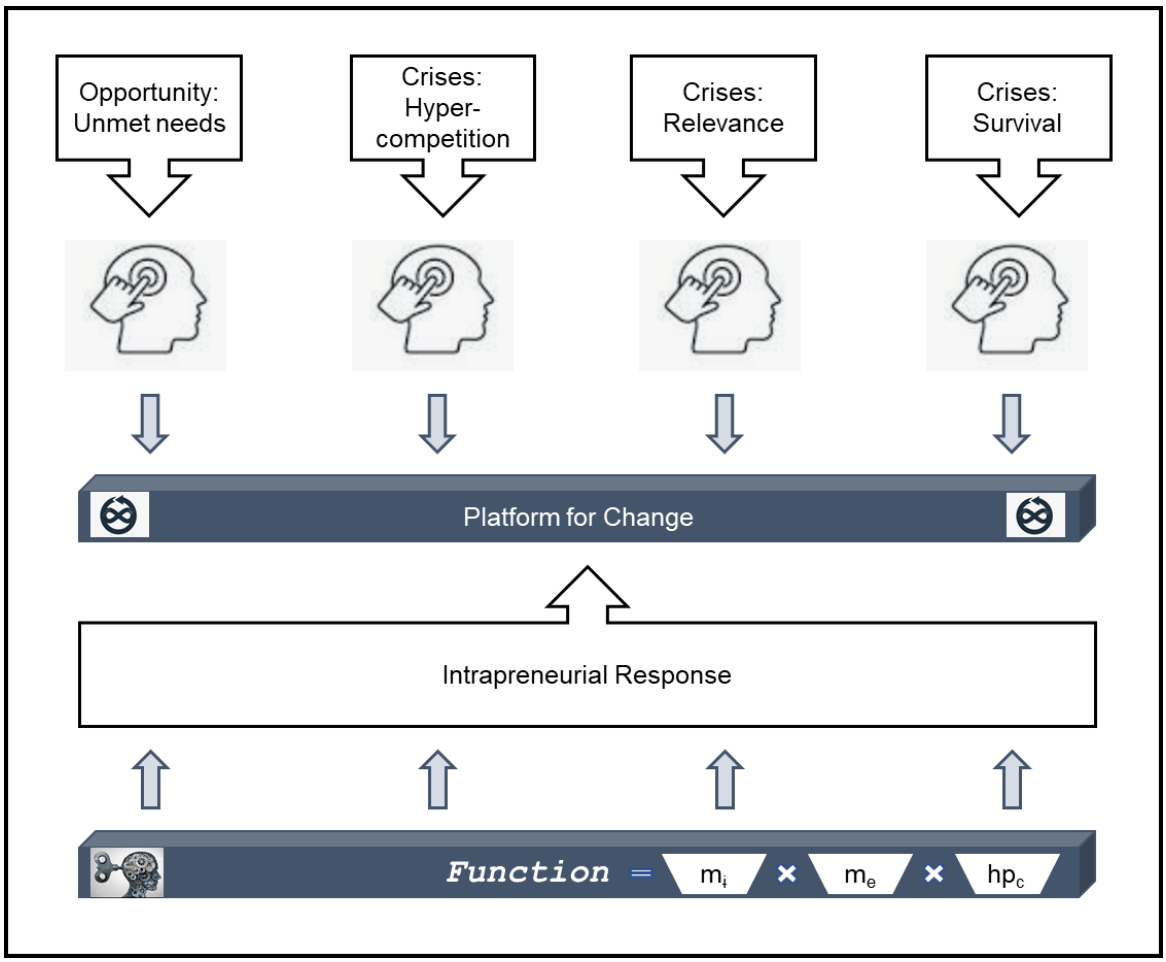


Figure 2.4: Intrapreneurial Response Action Framework

(Source: Own)

Similarly, Ireland, Kuratko and Covin (2003) theorised those entrepreneurial organisational antecedents, independently and collectively, as a positive stimulus for entrepreneurial behaviour. In addition, a pro-entrepreneurial internal environment is essential to embedding pervasive firm level entrepreneurial behaviour, as it encourages and motivates employees to explore and exploit entrepreneurial opportunities.

Similarly, the model of strategic integration of entrepreneurship throughout the organisation, created by Ireland et al. (2009), described pro-entrepreneurship organisational architecture as an internal system comprising of the following antecedent variables: structure, culture, resources, and reward, which motivates positive individual level behaviour and influences intrapreneurial action.

This research's thinking was reinforced by the model of sustained corporate entrepreneurship, developed by Kuratko, Hornsby et al. (2004), which theorised that individual entrepreneurial behaviour is positively driven by the existence of organisational antecedents. In addition, Hornsby et al.'s (2002) article on middle managers' perceptions discussed the fact that middle managers' entrepreneurial behaviour is a result of the perception and existence of pro-entrepreneurial organisational factors, which equally supported this study.

Therefore, an entrepreneurship-friendly environment is a function of interactions between structural elements and other organisational antecedents that together motivate employees who have a pro-entrepreneurial disposition to behave entrepreneurially.

Thus, the following hypothesis was formulated:

- *H2d:* A conducive entrepreneurial internal environment encourages employees who have a pro-entrepreneurial disposition to behave entrepreneurially, thereby driving positive firm-level corporate entrepreneurial performance (Moderator 2).

2.6.6 Hypothesis 2

An employee's antecedent qualities of a pro-entrepreneurial cognitive, personality and motivational disposition, and network ties within a corporate ecosystem are positively related to corporate entrepreneurial performance within the South African banking industry.

- *H2a*: An employee's persona is moulded by their need for achievement, locus of control, creativity, and optimism and positively influences the degree of corporate entrepreneurial performance within the South African banking industry.
  - *H2a.i*: An employee's motivational persona characteristic in terms of need for achievement positively influences the degree of corporate entrepreneurial performance within the South African banking industry.

- *H2a.ii*: An employee's motivational persona characteristic in terms of locus of control positively influences the degree of corporate entrepreneurial performance within the South African banking industry.

- *H2a.iii*: An employee's personality characteristic in terms of creativity positively influences the degree of corporate entrepreneurial performance within the South African banking industry.

- *H2a.iv*: An employee's personality characteristic in terms of optimism positively influences the degree of corporate entrepreneurial performance within the South African banking industry.

- *H2b:* An employee's cognitive ability and subsequent entrepreneurial mind-set in relation to goal orientation, metacognitive knowledge, metacognitive experience, metacognitive choice, and monitoring positively influences the degree of corporate entrepreneurial performance within the South African banking industry.
- *H2c:* The depth and diversity of an employee's social network positively influences the degree of corporate entrepreneurial performance within the South African banking industry.
- *H2d:* A conducive entrepreneurial internal environment encourages employees who have a pro-entrepreneurial disposition to behave entrepreneurially, thereby driving positive firm-level corporate entrepreneurial performance (Moderator 2).

2.7 Environmental Level Theoretical Value Drivers of Corporate Entrepreneurial Performance

This section theoretically evaluates the relationship between environmental antecedents and corporate entrepreneurship performance.

According to Zahra (1991), the environmental context in which businesses operate provide companies with both a yin and yang operating domain, on the one side a basket of fruitful opportunities and on the other hand, a steep challenge curve,

which organisations need to navigate creatively, using corporate entrepreneurship firm-level behavioural practices to sustain growth.

Diverse extant research has triangulated and deduced that the external landscape has a strong causal effect on both entrepreneurial actuality and the efficacy thereof. Environment settings act as both a stimulus for entrepreneurial behaviour as well as a strong hindrance (Covin & Slevin, 1991; Zahra, 1991).

Studies conducted by Zahra (1993), Zahra and Covin (1995), and Guth and Ginsberg (1990) all concurred that the external environment is a vital antecedent of corporate entrepreneurial behaviour. However, the research study conducted by Zahra (1993), equally posited that the even though the environmental context plays a crucial role in corporate entrepreneurship behaviour, the relationship between environmental antecedent variables (such as hostility and dynamism) and corporate entrepreneurship activity is not necessarily a linear relationship.

Dynamism results from evolving and radical change to a firm's operating paradigm causing a perception of market instability where changes to the economic, political, technological, regulatory, and social landscape gives rise to new developments and opportunities that could positively enrich a businesses' value proposition to the market (Lumpkin & Dess, 2001).

Dynamic environmental landscapes are characterised by the increasing rate of change in technological advancements, coupled with the shrinking of product life cycles within the industry, necessitating the need for the introduction of varying degrees of product innovation into the market, due to the evolution in consumers' needs, wants, behaviours, and expectations (Rodriguez-Pena, 2021).

Covin and Slevin (1991) posited that environmental attributes like dynamism stimulate intrapreneurial firm-level behaviour since companies respond to ambiguous opportunity rich markets by displaying an entrepreneurial posture of being innovative, taking calculated risks, and showing a proactive disposition.

Ireland et al., (2009) shared the perspective that the greater the intensity and richness of dynamism in an environmental setting, the higher the probability that organisational members will recognise and exploit corporate entrepreneurial

opportunities through the unceasing scanning of the macro-environmental and market trends (Kraus et al., 2011).

Tajeddini and Mueller (2019) concluded that the stronger the dynamic growth forces within the external environment acting upon an organisation are, the higher the intensity and frequency of corporate entrepreneurial behaviour and the success of corporate entrepreneurship activity.

The non-favourability of environmental forces acting upon a business is a result of the hostility within the marketplace. This occurrence is described by fundamental changes to the sector, conditions of intense competition or the opening up of the sector, and technological and innovation disruption (Ireland et al., 2009).

Increasing hostility within an industry, creates a stimulus for business to reinvent their business models, increase environmental scanning, engage in product and process innovation, and establish novel ways to differentiate themselves and effectively compete, stimulating corporate entrepreneurship within an organisation (Kreiser et al., 2020; Lumpkin & Dess, 2001).

These environmental conditions positively influence employee's entrepreneurial behaviour equally, in relation to both opportunity recognition and exploitation, which leads to increased levels of corporate entrepreneurial behaviour and corporate venturing (Ireland et al., 2009; Mustafa, & Hughes, 2018).

Adaptability to environmental shifts and shocks requires an organisation to balance making trade-offs to unlock the innovative potential within the company tightly with simultaneous removal of firm constraints. This compels the organisation and its members to manage the incongruous tensions of effectively running its core business and delivering value, while being malleable to augment its core business with capabilities and solutions based on an evolving opportunity set shaped by the rapidly changing environmental context (Pan, Verbeke & Yuan, 2021).

However, the large quantum of research conducted regarding the positive influence of environmental factors on corporate entrepreneurship has largely been premised on western research and has not taken into account the environmental

nuances in Africa, given Africa is plagued with deeper levels of continued market uncertainty, depressed economic conditions, societal and political instabilities, and weakened institutional structures. In addition, empirical evidence has validated that African cultural values, colonisation, and educational levels negatively impact firm level corporate entrepreneurial activity due to managerial interpretations of environmental hostility and dynamism and their personal risk appetites (Mustafa & Hughes, 2018).

It is therefore not surprising that when an African incumbent faces competitive rivalry that the majority of African companies shift their priorities towards business survival as a single-minded goal for their company. This competitive rivalry is symbolic of the competitive dynamic forces at work within a hostile industry where market players compete for customers, resources, and opportunities, resulting in a decline in marketplace opportunities that can be capitalised and creating undue pressure on the longevity of a business (De Villiers-Scheepers, 2012, Omisakin, Arasanmi & Kularatne, 2022).

This thinking is aligned with extant research conducted by Zahra (1991; 1993) in which it was hypothesised that rising dynamism and hostility in the external landscape could equally result in companies choosing to conserve resources rather than competitively respond by innovating. Equally, if the intensity of non-favourable environmental conditions increases, businesses could choose to exit the market (Morena & Casillas, 2008).

This early 1990s thinking remains congruent with research conducted more recently. Tajeddini and Mueller (2019) posited that contingency theory sheds light on the duality phenomena of environmental forces, as institutions will behave differently and diverge in their market behaviour in ambiguous environmental contexts as there is no optimal response because companies are constantly balancing internal trade-offs between risk, cost, and market gain.

Kreiser et al. (2020) concurred that the relationship between environmental forces and entrepreneurship is an inverse curve where environmental forces positively influence entrepreneurship, but only when financial benefits outweigh cost.

Consequently, in the wake of environment triggers, businesses are left with two options, activate bold premeditated moves to outclass the market by diversifying their business lines and creating new adjacency businesses and market segments, or, in line with institutional theory, actively manage market risk uncertainty by maintaining stable business models and acting more cautiously. By deduction, incumbent's business response to environmental shifts, materially differ globally and by industry (De Villiers-Scheepers, 2012).

Prior to 2020, the African banking industry was already dealing with the ramifications of globalisation and emerging banking trends informed by the fourth industrial revolution that was threatening the survival of incumbent's business models and impacting their banking revenues, return on equity values, and shareholder returns (McKinsey, 2020).

COVID-19 has been a watershed moment for the African banking sector, which "has seen the acceleration of seismic trends ranging from deglobalisation and a radical shift in the macro environment to transformed customer expectations" (McKinsey, 2021a, p. 8). The external environment has depressed the financial performance of African banks lower than that of their global peers as new opportunities emerging from the crisis was not seized fully and banks defaulted to relying on accelerating the implementation of their current strategies. South African banking strategies included the immediate address of digital behaviour shifts, while progressive global banks chose to rewire their traditional business models to deliver integrated banking and non-banking digital platforms. This fulfilled a broad spectrum of evolving customer needs and increased the banks' share of customer wallet by embedding themselves in key customer moments, thus applying an entrepreneurial mindset to the crises (PWC, 2021).

Thus, regardless of the hostility in the market, encouraging the need for a business model transformation and dynamism in the African banking market, resulted in new growth opportunities. These opportunities emerged from increasing customer relevance beyond financial services to new streams for revenue diversification. The main focus of South African incumbent banks shifted to safeguarding the financial and operational resilience of the business, and

building corporate trust by assisting their customers, communities, and employees through the pandemic (McKinsey, 2020).

Unfortunately, instead of African incumbent banks employing an entrepreneurial mindset, and capitalising on the market opportunity presented to transform from being a traditional bank, thereby not ‘wasting a crisis’, they actively chose to subdue their growth ambitions in lieu of a pragmatic financial prudence. This had an impact on the performance recovery of the bank and created a risk to the relevance of the business over the long term (PWC, 2021).

Thus, the following hypotheses were formulated:

- *H3a:* Dynamic business environments negatively influence corporate entrepreneurial performance within South African banking firms.
- *H3b:* Hostile business environments negatively influence corporate entrepreneurial performance within South African banking firms.

2.7.1 Moderating Influence

The environmental conditions of dynamism and hostility exhibit a paradoxical relationship with corporate entrepreneurial behaviour, and research has deduced mixed findings. Synthesising both research perspectives on the causal relationship between the external environment and corporate entrepreneurial behaviour (Ireland et al., 2009; Zahra, 1991; 1993,); it is inferred that external environmental triggers act as catalysts on both sides of the pendulum. On one end, a firm reacts positively to the external impetus and behaves entrepreneurially. On the other end, a firm reacts negatively to the external stimulus and market disruption and sways toward reduction in a firm’s risk appetite, company stagnation, or closure (Kuratko, Hornsby et al., 2004).

Corporate entrepreneurial behaviour relates to the continual scanning of new market opportunities or white spaces, and the exploration of these opportunities coupled with the follow through of assigning resources for building capabilities to exploit the industry opportunity and generate novel niches. This requires the application of constant and adaptive knowledge gain, which is more evident with

companies that already have an entrepreneurial orientation, as they are already in tune with displaying alertness to the wants and demands of their prevailing consumers (Tajeddini & Mueller, 2018).

An organisation with a prevailing entrepreneurial momentum has clear high standards for performance and ambitious growth objectives for the business. This cascades into stretch and go-getting goals for all employees, which are supported by enabling processes and organisational systems, and reinforced through organisational trust that facilitate both, the discovery of new ideas and the creation of new value adding capabilities. Hence, the entrepreneurial momentum of a firm enables company exponential growth, which is fuelled by innovation, market prowess, and a greater risk appetite for change (Pan et al., 2021).

Entrepreneurial momentum refers to organisational systems, processes, and beliefs that shape employee behaviours and the decisions and actions within an organisation. These could drive sustainable market growth and outperformance of the market regardless of the market fluctuations and the rapid evolution of market trends; however, these remain constant triggers to evolve, innovate, and move the business forward in the wake of stiff competition and diminishing returns on traditional business lines (Pan et al., 2021).

The stimulus-reaction phenomenon between environmental triggers and entrepreneurial company momentum can be explained leveraging retention mechanisms; incumbents choose and decode stimuli according to theories of action encrypted by previous strategies, the dominant logic of the company and its corporate DNA. As such, member behaviour is constrained by their perception of the rules of the game (Kuratko, Hornsby et al., 2004).

According to Kuratko, Hornsby et al. (2004, p. 79), the current organisational “momentum is a pervasive force [within a company and firms evolve and react to external stimulus by continuing to] evolve in the same direction”, dictated by the current organisational inertia. As such “the transformational trigger provides the impetus to behave entrepreneurially when other conditions are conducive to such behaviour” (Kuratko, Hornsby et al., 2004, p. 80). Incumbents with an entrepreneurial momentum have the ability to shift away from prior strategies,

routines, and business models thus not succumbing to constraints of the institutional theory (Pan et al., 2021). Thus, unless companies have already started to engage in corporate renewal activities and have redesigned their internal architecture to facilitate and motivate intrapreneurial behaviour, opportunities that exist and are prevalent due to the evolving business environment, will not be capitalised upon.

Arguably, the organisational or entrepreneurial momentum of a firm accounts for the heterogeneity in the different research findings and thus hostility and dynamism do not negatively influence corporate entrepreneurial behaviour in all companies, but rather the direction of that relationship differs depending on the existing entrepreneurial momentum within an organisation.

There are abnormalities in certain company behaviour where incumbent action during turbulent market conditions is not determined by the exploration of past practices nor informed by the entrepreneurial momentum of an organisation. Rather, action becomes an opportunity for firms to adapt themselves, engaging in organisational re-orientation is in fact a result of a performance crises or top-management led radical change evoked by an overhaul in the top management structure of a company (Kuratko, Hornsby et al., 2004). According to Kuratko, Hornsby et al. (2004, p. 79), “reorientations involve metamorphic changes in internal and external relations as structures, systems, processes and commitments are transformed and rebuilt.”

Thus, the following hypothesis was formulated:

- *H3c:* The macro environment shaped by the intensity of dynamism and hostility will have a more positive influence on corporate entrepreneurial performance within South African banking firms when organisations have an underlying entrepreneurial momentum (Moderator 3).

2.7.2 Hypothesis 3

The macro environment, shaped by the intensity of dynamism and hostility within banking environments, influences corporate entrepreneurial performance in South Africa.

- *H3a:* Dynamic business environments negatively influence corporate entrepreneurial performance within South African banking firms.
- *H3b:* Hostile business environments negatively influence corporate entrepreneurial performance within South African banking firms.
- *H3c:* The macro environment shaped by the intensity of dynamism and hostility will have a more positive influence on corporate entrepreneurial performance within South African banking firms when organisations have an underlying entrepreneurial momentum (Moderator 3).

2.8 Environmental Dynamics and Hostility effects on Corporate Entrepreneurship

This section discusses the precipitating or moderating effect of environmental dynamics and hostility on the degree of influence that individual-level antecedents and organisational-level antecedents have on corporate entrepreneurship.

A wide array of scholars have developed theoretical frameworks and conducted empirical research that have established the inseparability of the external environmental conditions from the entrepreneurial development process (Covin & Slevin, 1991; Kuratko & Hornsby, 1998). According to the research conducted by Covin and Slevin (1991, p. 11), the external environmental forces of dynamism and hostility, has a “deterministic influence on the existence and effectiveness of entrepreneurial activity”, thus concluding that the external environment and the entrepreneurial process are intertwined (Covin & Slevin, 1991).

Shane et al. (2003) deduced that the external context influences the richness of entrepreneurial opportunities and the discovery and exploitation of opportunities by an individual. This argument has equally been made when entrepreneurship is

viewed as an organisational-wide behavioural trait (Covin & Slevin, 1991; Miller, 1983). Covin and Slevin (1991) extrapolated this augment and posited that the environmental characteristics of dynamism and hostility strongly stimulate organisational level entrepreneurial behaviour.

It is argued that this is the case in the external environment; the dynamic changes to economic, socio-political, technological and legal facets of a country and the market and regulatory dimensions of an industry create opportunities that shape customer's and business's needs, behaviours and expectations, which drives product and services development and market innovation. Companies respond to these environmental triggers either through opportunity driven beneficiation, which results in pro-active self-renewal of an incumbent, or through crises driven beneficiation, where company performance resulting from hyper-competition, market relevance, and survival propels the necessity-driven transformation of the business and scouts for new opportunities.

Zahra (1993) reinforced this theory by suggesting that perceptions of the basket of opportunities that seemingly exists within the external environment, frames the actions taken by corporate executives regardless of whether the internal environment encourages and is conducive to intrapreneurial activity. This concurs with the Lewinian framework, wherein entrepreneurial behaviour is seen as a result of the interaction between a person and the environment (Barreira et al., 2008; Lewin, 1936).

Ireland et al., (2009) shared the perspective that the intensity and richness of dynamism and hostility in an entrepreneurial setting, the higher the probability that organisational members will recognise and exploit corporate entrepreneurial opportunities.

Zahra (1991) concluded that the stronger the dynamic and hostility growth forces within the external environment acting upon an organisation are, the higher the intensity and frequency of corporate entrepreneurial behaviour will be, along with the success of corporate entrepreneurship activity.

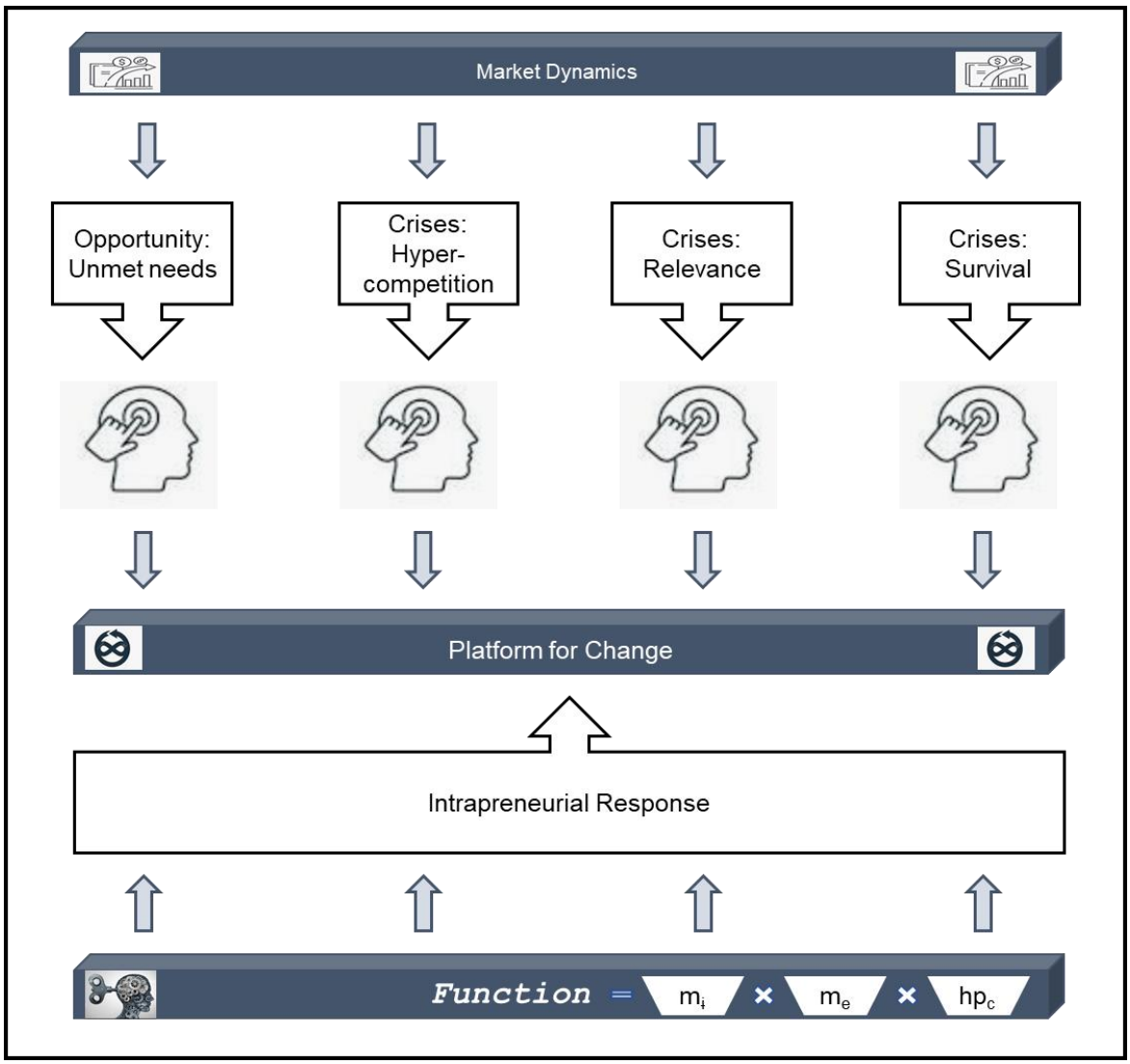


Figure 2.5: Trigger and intrapreneurial response action framework

(Source: Own)

Likewise, Kuratko and Hornsby (1998) agreed that the choice to behave intrapreneurially is the result of causal relationships among employee individualities, the organisational climate or architecture of a company, and a precipitating trigger, namely the environmental force of dynamism and hostility. As such, environmental triggers moderate the strength of the relational influence that individual and organisational antecedents have on corporate entrepreneurial activity.

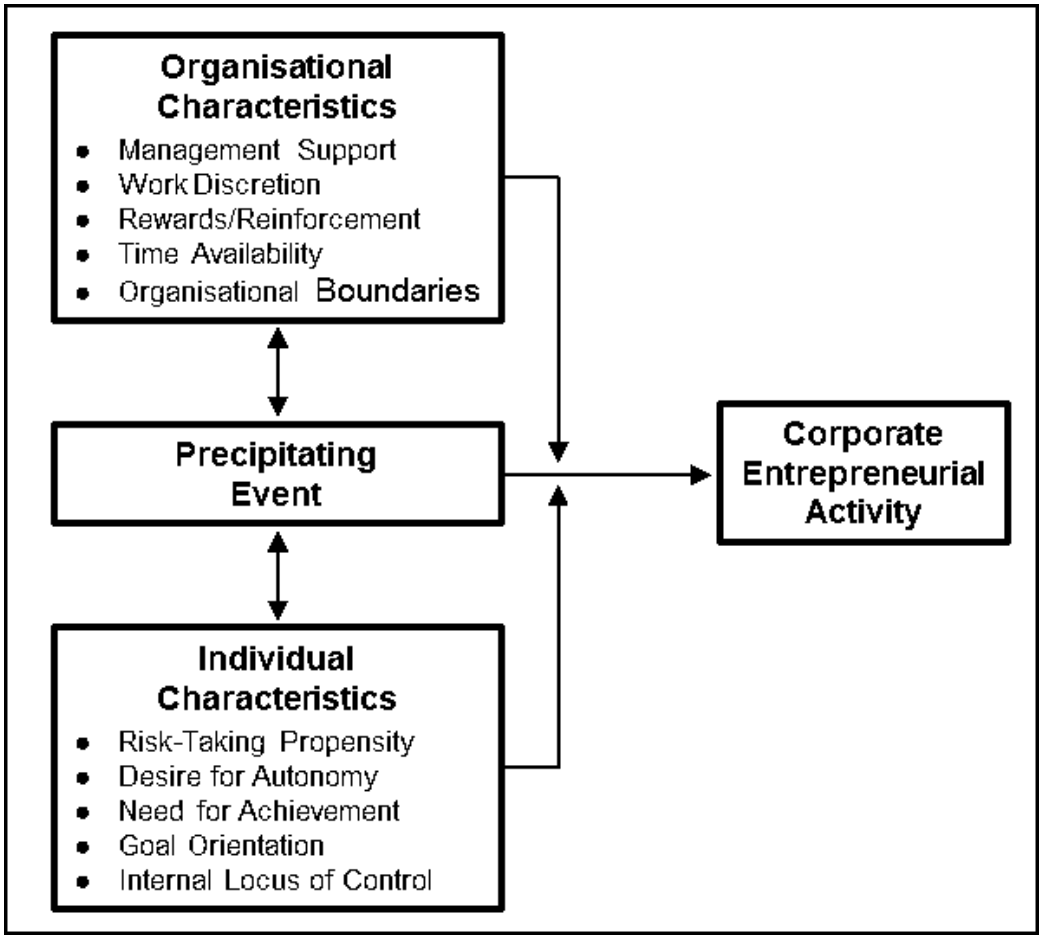


Figure 2.6: Interactive model of corporate entrepreneurship process

(Source: Kuratko & Hornsby, 1998, p. 36)

2.8.1 Hypothesis 4

- *H4a*: Environmental dynamics and hostility moderate the degree of influence that employee-level antecedents have on levels of corporate entrepreneurial performance within the South African banking industry due to the precipitating effect of environmental forces acting upon an intrapreneurial ecosystem (Moderator 1a).

- *H4b*: Environmental dynamics and hostility moderate the degree of influence that organisational-level antecedents have on levels of corporate entrepreneurial performance within the South African banking industry due

to the precipitating effect of environmental forces acting upon an intrapreneurial ecosystem (Moderator 2b).

2.9 System Effect on Incumbents' Corporate Entrepreneurship Behaviour

According to Lumpkin and Dess (1996), entrepreneurship activity varies in firms due to the mix of organisational, individual, and environmental antecedents, which act together to influence why and how entrepreneurship occurs.

Leveraging the thinking of Ireland, Kuratko et al. (2003), that the operationalisation, embedment and nurturing of entrepreneurial antecedents individually, in isolation of creating an effective ecosystem, are vacuous in driving sustainable firm level entrepreneurial behaviour.

Consequently, the theoretical framework of input-transformation-output open system thinking is applied to the corporate entrepreneurial process in order to drive sustainable corporate entrepreneurial firm level behaviour. Corporate entrepreneurship is therefore theorised as a multi-dimensional behavioural construct, in which the external environmental, in the form of dynamism and hostility environmental conditions, triggers intrapreneurial organisational action in incumbents that have a growth orientation. This is the result of employees, who have a pro-entrepreneurial disposition, exhibiting entrepreneurial behaviour due to the existence of a conducive internal intrapreneurial environment, which ultimately drives corporate entrepreneurial firm level activity.

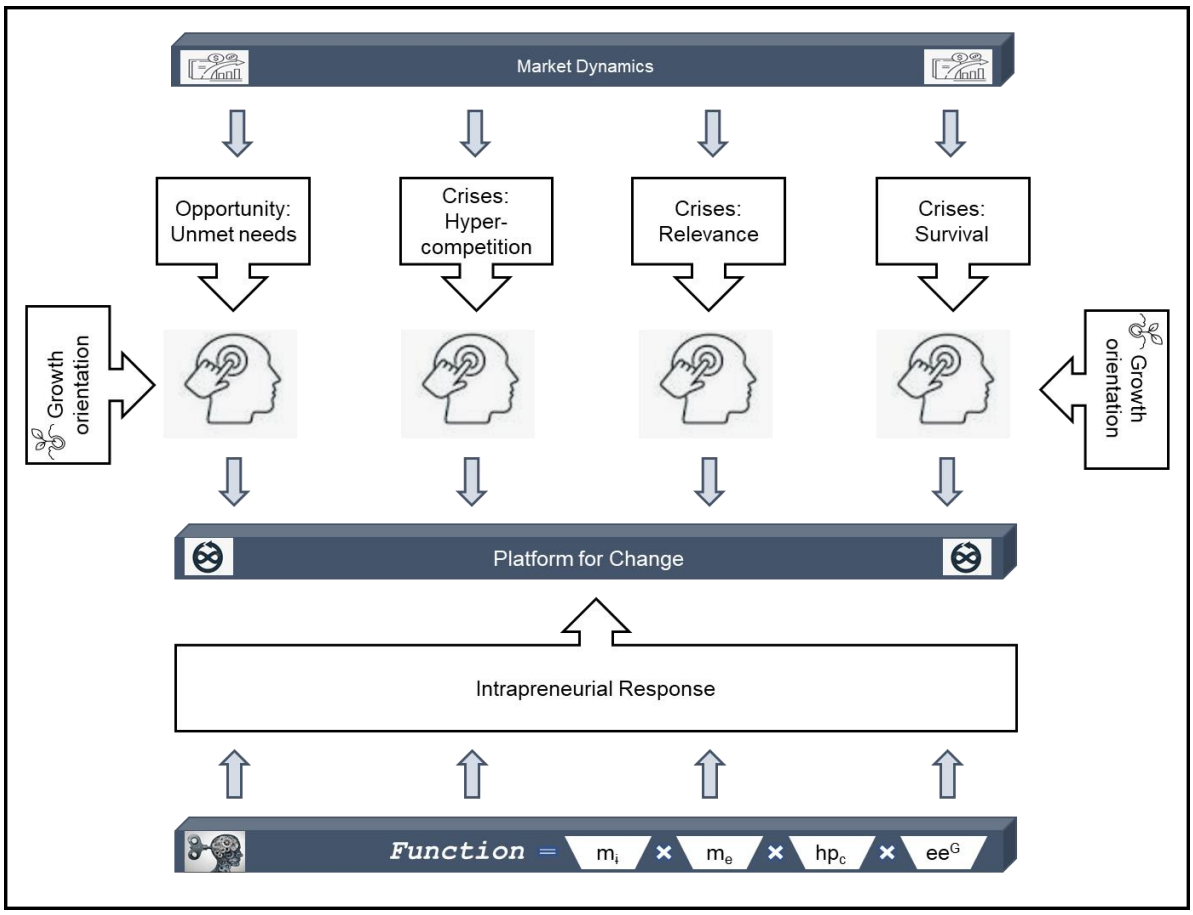


Figure 2.7: Trigger response ecosystem for intrapreneurial action

(Source: Own)

Corporate entrepreneurship is a multi-dimensional behavioural construct, which is a firm level occurrence and the magnitude of corporate entrepreneurial activity generated by an incumbent is achieved through an ecosystem approach and effect. Consequently, the intrapreneurial response action equation evolves to take into consideration the dynamics of the holistic entrepreneurial open system and as such intrapreneurial activity is a function of intrinsic motivation (m_i) multiplied by extrinsic motivation (m_e) multiplied by cognitive horsepower (hp_c) multiplied by external environment $(ee)^G$ [G = growth orientation of an incumbent]. Thus:

- *H1*: The existence of a pro-organisational corporate ecosystem characterised by an incumbent's organisational level antecedent variables of leadership traits, corporate strategy, organisational culture, design structure, reward practices, and organisational resources positively

influences the degree of corporate entrepreneurial performance within South African banking incumbents due to an ecosystem effect.

- *H2*: An employee's antecedent qualities of a pro-entrepreneurial cognitive, personality and motivational disposition and network ties within a corporate ecosystem are positively related to corporate entrepreneurial performance within the South African banking industry.

- *H3*: The macro environment shaped by the intensity of dynamism and hostility within banking environments influences corporate entrepreneurial performance in South Africa.

2.10 Control Variable

Academics have acknowledged the role that management at multiple levels play in the achievement of a corporate entrepreneurial outcome and that intrapreneurship is a shared effort (Ireland, Kuratko et al., 2003). The theoretical framework created by Kuratko et al. (2011) shared the perspective that although the various levels of management influence employee entrepreneurial behaviour, the level of influence and impact varies across the different levels of management.

According to Phan et al. (2009), the strength of the relationship between perceived organisational antecedents and corporate entrepreneurial outcomes, differ significantly across managerial levels. Higher managerial levels have the mandate and empowerment to drive corporate entrepreneurial outcome with more fortitude than lower levels of management.

Top management and to a lesser extent senior management help craft the vision and the strategy for the company and are cultivators of corporate entrepreneurial behaviour (Covin & Slevin, 1991; Phan et al., 2009). Middle managers are viewed as the critical conduit between business dominant logic and employees. Middle managers need to continuously ensure that their leadership and actions provide a role model for entrepreneurial behaviour and encourage employee entrepreneurial actions (Hornsby et al., 2002; Kuratko et al., 2005). Junior or first-line managers are seen as a pivotal employee grouping as they are responsible for the

continuous entrepreneurial exploration and exploitation of new opportunities (Kuratko et al., 2011).

The role of management differs across multiple levels, first attaining an entrepreneurial outcome, and second the quantum of the conversion between organisational level antecedents and corporate entrepreneurial behaviour. Therefore, a second control variable of managerial level or corporate grade was included in the theoretical model construct.

2.11 Conclusion of Literature Review

The financial crisis in 2008 demanded a regulatory transformation within the global banking industry but the fourth industrial revolution has strongly encouraged a strategic digital transformation, which the pandemic has accelerated into a watershed moment for banks. Change, innovate and remain relevant, or stagnate, become irrelevant, and remain in the COVID-19 performance rut (McKinsey, 2021a).

Corporate entrepreneurship as a concept, although in relative research terms is fairly novel has been examined for many decades, with scholars expressing a clear appreciation of the value that it unlocks for incumbents and the larger economy. The manifestation of corporate entrepreneurship is either through the organisational vehicle of corporate venturing or strategic entrepreneurship. Strategic entrepreneurship, in the form of strategic renewal, enables incumbents to transform sustainably (Kuratko & Audretsch, 2013).

For banks, this value unlock is critical to their COVID-19 performance recovery and equally important to their sustainability and sustained regeneration. Corporate entrepreneurship is a capability that will enable corporates to differentiate their performance and market positioning through a targeted approach.

The corporate entrepreneurship capability is embedded through a multi-faceted process, which involves all employee levels in the organisation, a number of organisational drivers and simultaneous efforts across the organisational drivers. These drivers need to adapt continuously and respond to the quantum of internal

and external stimuli resulting in a highly complex system that is dynamically interconnected, in which the long-term performance results of corporate entrepreneurial activity cannot be isolated to an exact set of actions (Bloodgood et al., 2015).

Adequate representation of the dynamic complexity of the corporate entrepreneurial system encapsulates a comprehensive set of drivers across three levels of analysis and requires an integrative approach to theory building. The configuration development approach was leveraged as an effective framework to model the dynamic and complex reality of organisational entrepreneurial behaviour within an open system construct.

This required a wide-ranging theoretical review of the field of corporate entrepreneurship to ascertain the fundamental domains that influence corporate entrepreneurial performance within an organisation. The main antecedent variables within these domains deduce interrelationships among these variables and identify core theoretical models that underpin key relationship deductions within this space (Harms et al., 2009; Kraus et al., 2011).

As such, the configuration approach concluded that the conceptual model has three levels of analysis:

1. *Individual level*: The corporate entrepreneur, which according to pioneering theorists Shane and Venkataraman (2000), is the catalyst in the entrepreneurial process.

2. *Firm level*: The organisational architecture is the platform in which motivations, abilities, and networks give rise to entrepreneurial outcomes and consistent entrepreneurial behaviours and ensure that there is congruence among the strategic direction of the company, company ethos, structure, business practices, and employee behaviour.

3. *Macro level*: The external business context, which apart from providing a pool of stimuli and an opportunity set to convert into entrepreneurial achievements, can cause a company to become more conservative thus reducing its risk appetite. It reflects the national entrepreneurial ecosystem,

which also enables researchers to explain the variance in corporate entrepreneurial activity across different industries and economic country types.

The integrated conceptual model included eight selected domains across three levels of analysis, which was based on three evaluation criteria; first, the natural intersection of antecedent variables from the core models; second, the juxtaposition of antecedent variables; and third, the application of core entrepreneurial theory. These criteria extend variable description of constructs, as several organisational system components affect intrapreneurial activity (Covin & Slevin, 1991). As such, the organisational value drivers of corporate entrepreneurship output were narrowed down to entrepreneurial strategy, entrepreneurial culture, transformational leadership, reward practices, organisational structure, and organisational resources. The employee value drivers of corporate entrepreneurship yield pointed to entrepreneurial persona, entrepreneurial mindset, and network ties, whereas the external value drivers of corporate entrepreneurship harvest targeted dynamism and hostility.

The direct relational causal patterns and contingency patterns across three levels of analysis, captured in the model denoted catalysts and impediments to corporate entrepreneurial processes and behaviours that together acted as a corporate entrepreneurial performance ecosystem.

The embedment process in this model integrated four theoretical anchors in corporate entrepreneurship, namely domain theory (Guth & Ginsberg, 1990), firm level entrepreneurship theory (Covin & Slevin, 1991), sustaining theory (Kuratko, Hornsby et al., 2004), and strategic integration theory (Ireland et al., 2009). These informed an embedment theory and capability framework, which encapsulated the dynamic complexity of corporate entrepreneurship, and the multi-level analysis and predictors of corporate entrepreneurship performance. These formed an execution model with the aim of generating a set of critical constructs and variables that could account for a noteworthy percentage of the variance in corporate entrepreneurial performance, a research gap identified through the studies conducted by Kuratko, Hornsby et al. (2004).

The theoretical model (Figure 2.8) would enable established companies to utilise this system philosophy to engineer corporate entrepreneurial activity as a premise to transforming traditional incumbents and generating predictive outcomes.

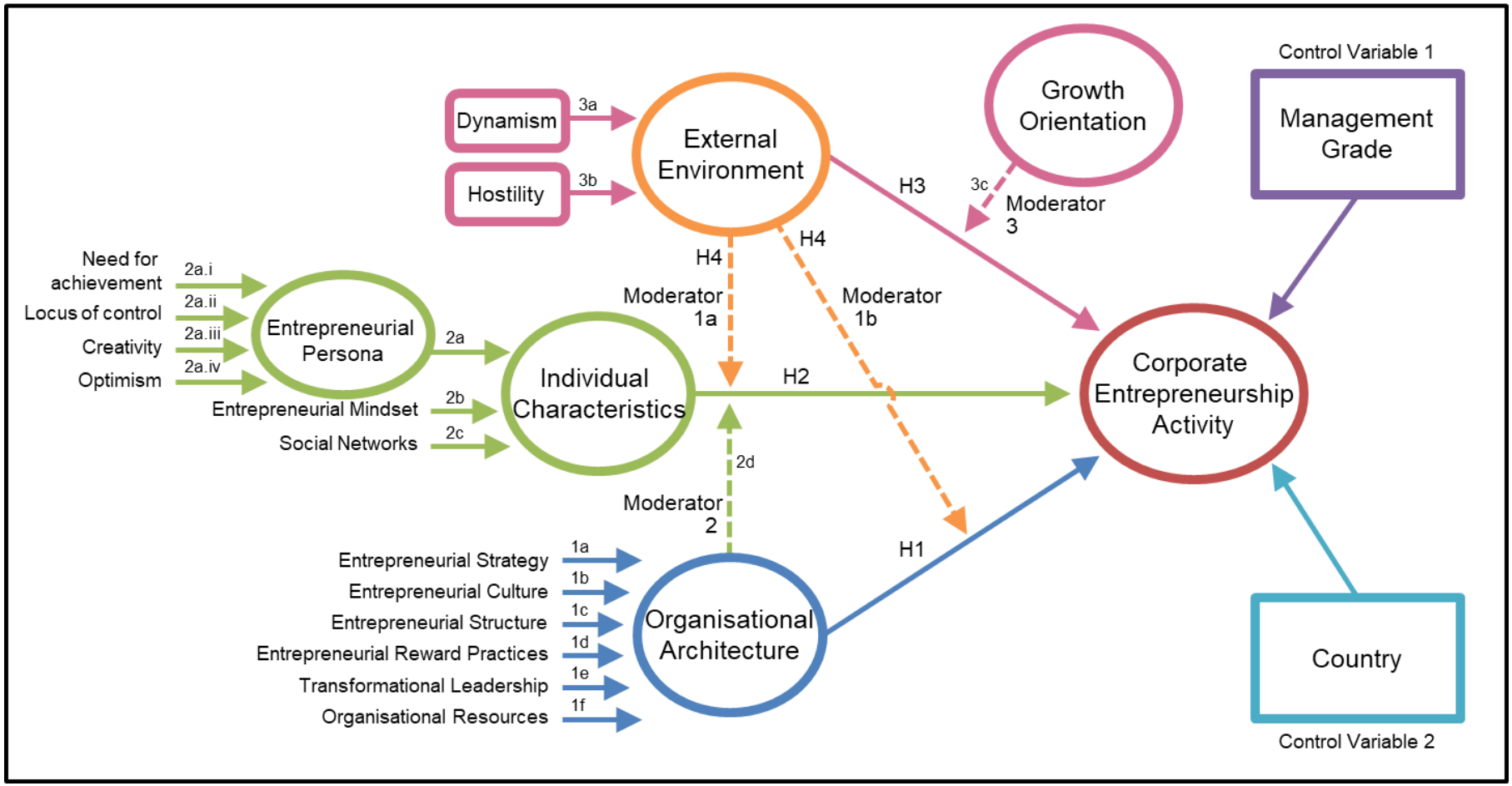


Figure 2.8: Corporate entrepreneurship as an ecosystem firm-level behavioural model

(Source: Own)

Even though the hypothesised model was theoretically substantiated and demonstrated strong positive and negative relationship patterns, the empirical model might have validated moderate to weak relationship patterns, as most extant research studies on corporate entrepreneurship behaviour and activity was based on developed economies (Urban & Wood, 2017). Given the societal and economic factors that contextualised this study, the strength of relational and contingency patterns may differ and the degree to which the selected set of antecedent variables were able to explain the variance in corporate entrepreneurial activity may vary.

This logical reasoning is substantiated by both the 'GEM 2017/2018 Global Report' and the 'Global Innovation Index 2018, Energising the World with Innovation' report, which indicated that the entrepreneurial employee activity and the innovation index in African countries significantly differs from developed countries. Equally, this is compounded by the fact that entrepreneurial employee activity in financial services companies is meaningfully lower than other sectors (Global Innovation Index, 2019; Singer, Herrington, & Menipaz, 2018). As this study was localised to the banking industry in Africa, the corporate entrepreneurship behavioural patterns observed in this empirical study may differ from theorised models of developed countries' entrepreneurial behavioural patterns.

3 RESEARCH METHODOLOGY

The purpose of this research was to theoretically interrogate the research question, develop the supporting hypotheses, empirically validate the hypotheses and answer the research question. This process was data led and conclusions were derived using robust data analysis of the data observations gathered through closed questionnaires. The data insights were utilised to make research inferences that assisted in furthering the corporate entrepreneurial knowledge base. Further to the scholarly benefit, this study had strategic benefits to businesses, as the data insights were leveraged to derive a corporate entrepreneurship implementation ecosystem model. Based on the impact or total effect of each variable on corporate entrepreneurial performance, the model deduced the order of priority in entrepreneurial transformation of corporates, thereby enabling a phased approach to corporate entrepreneurship transformation of incumbent organisations.

3.1 Research Approach / Paradigm

Krauss (2005, p. 758) described the ideology of epistemology, as “the philosophy of knowledge and how new knowledge is derived”. Epistemology is closely related to ontology, which according to Krauss (2005) is the researcher’s perspective of reality. Krauss (2005) described methodology as the approach and/or framework that was employed by the researcher to discover new knowledge.

In this research study, an extensive literature review, coupled with a critical analysis of extant research, was conducted to derive a foundational knowledge framework, develop theoretical domains, and deduce a theoretical model. This knowledge was ratified using rigorous empirical analysis of data observations. As such, the study reflected an objective reality, which derived knowledge through empirical substantiation. The methodology employed for this study was a quantitative framework; as such data observations were derived through structured questionnaires (Godwin et al., 2021).

To ensure the integrity and authenticity of the data observations and the research inferences deducted, it was critical that the research was objective and excluded any unconscious bias creep from the researcher, due to the scholar holding a senior position in the financial services sector in South Africa. As such, a post positivism paradigm was employed, thus the axiology of the research was divorced from undue influence from the scholar's personal value and belief system.

3.2 Research Design

The approach adopted in this quantitative study was a cross-sectional data analysis of corporate entrepreneurship and corporate entrepreneurship antecedents. Primary data was collected through closed structured surveys administered across selected South African banks, which have a meaningful footprint across the African continent.

A cross-sectional research study was selected as the preferred framework for the empirical analysis. This was considered the most pragmatic approach given the time sensitivity to conclude the research study. In addition, the ability to conduct a longitudinal study successfully would require sampling a set group of participants over a series of years, which is not feasible given both employee turnover and access to participants.

The disadvantage of the chosen approach is that a cross-sectional study did not factor the reality of a corporate entrepreneurship transformational journey and varying levels of corporate entrepreneurship performance through financial cycles, to determine whether the impact and priority of corporate entrepreneurial antecedents changed due to the maturity of the business. Equally, a longitudinal study would have mitigated employee biases.

3.3 Population and Sample

The South African banking industry was selected given that it is the “largest on the African continent. In 2021, the combined Tier 1 capital of the sector reached over US$ 34.4 billion” (Galal, 2023).

To ascertain the population dataset, the total number of banks in South Africa, including local branches of foreign banks, was established using data obtained from the South African Reserve Bank. This analysis concluded that there were 19 banks in South Africa. Nevertheless, according to the South African Reserve Bank’s prudential authority, “the banking sector is dominated by five large banks, which collectively hold 90.5 per cent of the total banking sector assets as of 31 March 2019” (SARB, 2019, p. 18).

In 2021, the top five banks in South Africa were among the 10 main banks across the continent in “terms of asset value” (Galal, 2023).

3.3.1 Population

Applying a set of criteria derived from the aim and contribution of the study, the selection of the top-five banks was made based on the requirements that the banking group should be a large, incumbent banking corporation of greater than 10 000 employees. Furthermore, it should be headquartered in South Africa, with a meaningful footprint across Africa, listed on the Johannesburg Stock Exchange (JSE), have significant market share, and provide access to universal banking services to their customers and clients. Thus, Standard Bank (2019), FirstRand (2019), ABSA (2019), Nedbank (2019), and Capitec (2019), the top-five banks, were selected as the total population dataset, which included a total permanent employee headcount of 183 485 employees as per the respective companies’ 2018 integrated reports, and illustrated in Figure 3.1.

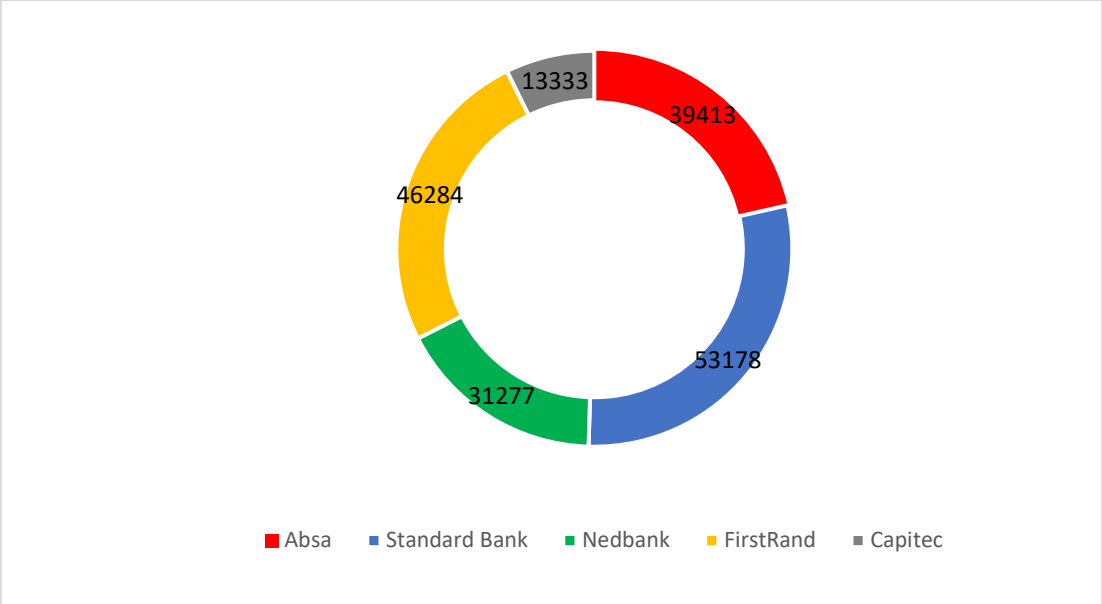


Figure 3.1: South African top-five banks' employee headcount

(Source: ABSA, 2019; Capitec, 2019; FirstRand, 2019; Nedbank, 2019; Standard Bank, 2019)

The targeted sampling frame included managerial corporate grades across the top-five banks in South Africa. Utilising the average span of control of 10 employees per manager (Weiss, 2018), the targeted sampling population was estimated to be circa 18 350 managerial employees.

The sampling size for the study was determined and verified using two partial least squares structured equation modelling (PLS-SEM) heuristic statistical tests to identify the minimum number of respondents required, the '10 times' PLS-SEM analytic heuristic and the power analyses. The total sampling frame was divided equally among the companies to determine the sampling frame per company.

3.3.2 Sample and Sampling Method

Employee referrals were obtained from senior leadership representatives within each selected organisation. A two-prong approach of both convenience sampling followed by the snowball method was leveraged to obtain a fair sampling representation within each firm. Even though this approach does not generate a true random sample, the sampling approach was adopted as a preferred

alternative. Obtaining a banking employee list, including email addresses, is not probable under the current protection of personal information (POPI) legislation, thus making access to employees of the targeted organisations extremely difficult to organically reach (Etikan, Alkassim & Abubakar, 2016, p. 55).

To determine the considerations for sampling size, the '10 times' PLS-SEM analytic heuristic (Barclay Higgens, & Thompson, 1995) was applied. The minimum sampling size was derived by assessing the larger number of either the maximum number of formative indicators that encapsulate a latent variable in the model, multiplied by a factor of 10, or the maximum number of structural paths for a structural model variable, multiplied by a factor of 10. Referencing the empirical model, Figure 3.2, the corporate entrepreneurship construct had the largest number of measurement paths, 10; therefore, a minimum sample of 100 was recommended.

Furthermore, this minimum sample size was cross referenced with the minimum sample size derived using statistical power analysis of 80 per cent, a maximum number of 10 independent variables underpinning a latent variable construct, a significance level of one per cent and a minimum R^2 of 0.10 (Hair, Hult, Ringle & Sarstedt, 2017). This analysis recommended a minimum sample size of 156 (Hair et al., 2017).

The greater of the sample size recommendations was chosen, hence the minimum sample size that was employed for this research study was 156, which was considered a fair representation (one per cent of the target population) to enable robust data modelling and analysis.

As the study was based on voluntary participation, an over sampling factor of 100 per cent was applied to the target sample size, thus increasing the sample size to 312, to account for non-responses. This sample size was divided equally among the top-five banks, thus equalling a sample size of circa 62 per bank.

Table 3.1: Profile of respondents

Description of Respondent Type Based on Seniority	Profile to be Sampled
Top management	25-50% of the total population
Senior management	20-25% of the total population
Middle management	15-20% of the total population
Junior management	10-15% of the total population
Team leader	5-10% of the total population

(Source: Own)

3.4 Research Instrument

Given that the research approach utilised for this study was quantitative, the research instrument leveraged in this study was a closed questionnaire. The research instrument was designed using the augmentation of established ordinal research scales with Cronbach alpha scores of circa 0.70 and greater, confirmed through research studies, as illustrated in Table 3.2.

Table 3.2: Research instrument

Variable Type	Primary Latent Measurement Construct	Referenced Research Scale	Secondary Latent Measurement Construct	Scale Type	Reliability & Validity
Independent	Entrepreneurial Strategy	Entrepreneurial strategy -making scale (Covin & Slevin, 1991; Miller, 1983)		Seven-point Likert scale [very untrue of me to very true of me]	Cronbach alpha of 0.75 (Li, Zhang & Chan, 2005)
Independent	Entrepreneurial Culture	Stevenson scale (Brown et al., 2001)		Bipolar rating scale along a 10-point continuum	Cronbach alpha of 0.68 (Naldi, Achtenhagen & Davidsson, 2015)
Independent	Entrepreneurial Structure	Stevenson scale (Brown et al., 2001)		Bipolar rating scale along a 10-point continuum	Cronbach alpha of 0.78 (Naldi et al., 2015)
Independent	Entrepreneurial Reward Practices	Stevenson scale (Brown et al., 2001)		Bipolar rating scale along a 10-point continuum	Cronbach alpha of 0.68 (Naldi et al., 2015)
Independent	Organisational resources	Stevenson scale (Brown et al., 2001)		Bipolar rating scale along a 10-point continuum	Cronbach alpha of 0.68 (Naldi et al., 2015)

Variable Type	Primary Latent Measurement Construct	Referenced Research Scale	Secondary Latent Measurement Construct	Scale Type	Reliability & Validity
Independent	Growth orientation	Stevenson scale (Brown et al., 2001)		Bipolar rating scale along a 10-point continuum	Cronbach alpha of 0.71 ((Naldi et al., 2015)
Independent	Transformational leadership	Multifactor leadership questionnaire (Avolio et al., 1999)	Inspirational Intellectual stimulation Individual consideration	Seven-point Likert scale [never to every time]	Cronbach alpha of 0.81 (Jung et al., 2003)
Independent	Entrepreneurial mindset	MAC (Haynie & Shepherd, 2009)	Goal orientation Metacognitive knowledge Metacognitive experience Metacognitive choice Monitoring	Seven-point Likert scale [very untrue of me to very true of me]	Cronbach alpha of 0.885 across all 5 dimensions (Haynie & Shepherd, 2009)
Independent	Entrepreneurial persona	Creativity scale (Tierney, Farmer & Graen, 1999)	Creativity	Seven-point Likert scale [very untrue of me to very true of me]	Cronbach alpha of 0.96 (Tierney et al., 1999)
Independent	Entrepreneurial persona	Generalised self-efficacy scale (Schwarzer, 1993)	Self-efficacy	Seven-point Likert scale [very untrue of me to very true of me]	Cronbach alpha of 0.82 (Hmieleski & Corbett, 2006)

Variable Type	Primary Latent Measurement Construct	Referenced Research Scale	Secondary Latent Measurement Construct	Scale Type	Reliability & Validity
Independent	Entrepreneurial persona	Chance scale (Levinson, 1980)	Locus of control	Seven-point Likert scale [strongly disagree to strongly agree]	Cronbach alpha of 0.72 (Hmieleski & Corbett, 2006)
Independent	Entrepreneurial persona	Motives scale (McClelland, 1961)	Achievement	Seven-point Likert scale [strongly disagree to strongly agree]	Cronbach alpha of 0.80 (Yamaguchi, 2003)
Independent	Entrepreneurial persona	Social model scale (Hmieleski & Corbett, 2006)	Social networks	Seven-point Likert scale [strongly disagree to strongly agree]	Cronbach alpha of 0.86 (Hmieleski & Corbett, 2006)
Independent	Dynamism	Environmental scale (Miller & Friesen, 1982)		Seven-point Likert scale [strongly disagree to strongly agree]	Cronbach alpha of 0.72 (Heavey, Simsek, Roche & Kelly, 2009)
Independent	Hostility	Environmental scale (Miller & Friesen, 1982)		Seven-point Likert scale [strongly disagree to strongly agree]	Cronbach alpha of 0.72 (Zahra, 1991)

Variable Type	Primary Latent Measurement Construct	Referenced Research Scale	Secondary Latent Measurement Construct	Scale Type	Reliability & Validity
Dependent	Corporate entrepreneurship performance	CE Index (Miller & Friesen, 1982)		Seven-point Likert scale [very untrue of me to very true of me]	Cronbach alpha of 0.75 (Zahra & Covin, 1995)

3.5 Procedure for Data Collection

The procedure selected to administer the questionnaires to the sample population, was to utilise an online survey, accessed via a Qualtrics webpage link, or a paper-based survey in circumstances dictated by organisational procedures of target participant banks. This approach enabled the effective administration of the survey across the country, the ease of tracking survey completion, and efficient data collation to enable robust data analytics.

Since the questionnaire was a self-administered survey, it was ensured that the survey was user friendly, simple to navigate and contained closed-ended questions. As such two types of research scales were selected, the Likert scale and the bipolar scale, as illustrated in Appendix B.

Post the design of the questionnaire; the survey was pre-tested among a small focus group to ascertain the approximate duration for the completion of the survey and the user friendliness of the research instrument. This pilot study found that the average time for completion was circa 30 minutes, the questions were simple to understand, and the instrument as a whole was easy to navigate.

3.6 Ethical Considerations

Upon embarking on the data collection stage of the research study, ethics clearance adhering to Wits Business School procedural requirements was obtained namely: a) panel approved research proposal, b) research instrument, c) participant information sheet, d) participant consent form, and d) stakeholder permission; and approved by the Research Ethics Committee of the School. This research study also adhered to the full ethical guidelines as recommended by researchers Stanley, Sieber and Melton (1987), and Diener and Chandall (1978), to ensure that new knowledge is developed and disseminated in an ethically sound manner. The rights and protection of all respondents was well preserved during the research process.

First, participation was purely voluntary, consent was obtained for all respondents, and participants were able to withdraw from the study, free of any obligations at any point during the study (Diener & Chandall, 1978; Stanley et al., 1987).

Second, the anonymity of the respondents was well-maintained at all stages of the research process and no biometric data or personal data was recorded, ensuring the integrity of the research process and preventing any risk of harm (Diener & Chandall, 1978; Stanley et al., 1987).

Third, the context behind the survey, the research life-cycle process, and the framework for deriving research insights, was fully explained in the covering note to respondents, to avoid any unintended deceptive practices. The outcome of the study was fully accessible and shared within the sampling population to facilitate that maximum benefit is derived from the study (Diener & Chandall, 1978).

To ensure that the research remained objective and free from scholar biases, the researcher fully disclosed her personal affiliation within the South African banking industry and presented the context and merits of the study to key bank representatives. This was achieved through direct contact with the bank and through the Banking Association of South Africa, thereby creating industry transparency, visibility of the research lifecycle, and industry buy-in. Post the study, the findings would be published and circulated to all participating Banking Association of South Africa members for the betterment of the industry.

3.7 Data Modelling Methodology

The research model proposed in Figure 3.2, was layered in complexity, both in the number of independent and latent variables included in the model and the number of simultaneous causal relationships being observed within this study. As such, this study did not employ first generation statistical techniques, as these statistical tools are deemed ineffective in modelling complex organisational behavioural models (Lowry & Gaskin, 2014).

In light of the limitation of first generation statistical techniques, second generation statistical techniques, in the form of SEM was utilised for this research study to

ensure that robust data modelling underpinned the validity and reliability of the study. SEM is considered by many scholars as a superior tool in analysing causal behavioural patterns (Bollen, 1989), as it is a second generation multivariate data analysis method that can concurrently examine multiple latent variables and manifest variables (Hair et al., 2017). This enables the simultaneous testing of both the soundness of measures and the credibility of a theory (Lowry & Gaskin, 2014).

Since this study included a combination of exploratory and confirmatory theory building, researchers recommended the use of PLS-SEM, as a specific category of SEM to be leveraged in this study to holistically evaluate the plausibility of the model theory, depicted in Figure 3.2 (Lowry & Gaskin, 2014).

PLS-SEM is considered an efficient and robust statistical tool (Afthanorhan, 2013), as it is not premised on any data distribution assumptions and is effective in data modelling using small sample sizes without creating any identification concerns (Hair et al., 2017).

PLS-SEM “maximises the explained variance of the endogenous latent constructs” (Afthanorhan, 2013, p. 198), thus displaying both a “high R-square value and significant t-values … [and] rejecting the null hypothesis of no-effect” (Gefen, Straub, & Boudreau, 2000, p. 24).

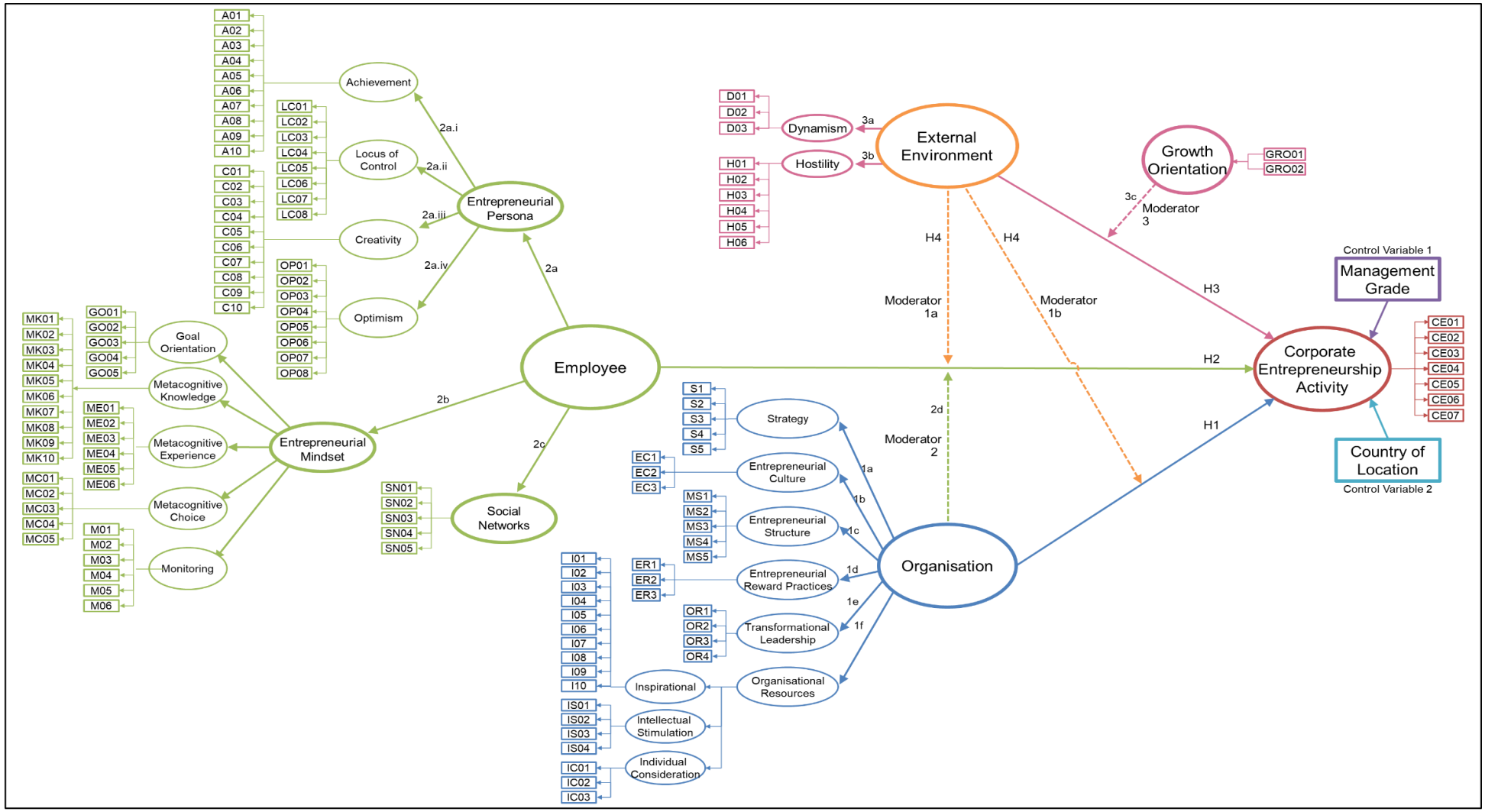


Figure 3.2: Empirical model

(Source: Own)

3.8 Data Analysis of the Empirical Model

Since the study utilised a PLS-SEM data framework, the empirical model, illustrated in Figure 3.2, was divided into two distinct models, namely the structural model or inner model and the measurement model or outer model (Wong, 2013).

The structural model defines the causal relationships between latent variables within the empirical model while the measurement model defines the causal relationships between latent variables and manifests variables or observed measures encapsulating the makeup of a latent variable (Hair et al., 2017).

3.8.1 Empirical Model Descriptive Statistics

The data was scrubbed and if the quantum of missing data was greater than 15 per cent for a particular observation, the respective observation was deleted from the data set. Alternatively, if the quantum of missing data was less than five per cent for a respective indicator, mean value replacement was used as the strategy to deal with this scenario (Hair et al., 2017). Additionally, the mean and median values and the standard deviation of latent variables was computed, as key descriptors of the data set (Hair, Ringle & Sarstedt, 2013).

Despite the fact that there was no criticality regarding normal data distribution for data modelling, this study nevertheless leveraged the Kolmogorov-Smirnov test and both the skewness and kurtosis measures to examine whether the data profile resembled a normal distribution and to what degree the data profile diverged from normality (Hair et al., 2017).

The robustness of PLS-SEM model estimations however, is significantly affected by collinearity, specifically in formative measurement models and influential outliers because PLS-SEM uses OLS regressions for path modelling. As such, the study employed box plots to establish whether any extraordinarily low or high outliers, which have no plausible explanation (Hair et al., 2017), as well as the Pearson correlation method to derive the correlation matrix for both the

measurement model and the structural model, to determine and eliminate highly correlated manifest and latent variables (Hair et al., 2013).

3.8.2 Common Method Bias Assessment

According to research, common method bias is a key concern in behavioural research and research findings. There are several likely causes of common method biases in research studies and these potential sources are a result of the research setting, namely the rater, the research instrument, and the context in which surveying occurs (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). Podsakoff et al. (2003, p. 879) posited that method bias is well thought of to be a significant source of “measurement error and is attributable to the measurement method rather than to the construct of interest”.

Evaluating the summary of likely sources of method biases derived by Podsakoff et al. (2003), several potential sources were narrowed down for consideration in this study. First, method bias might have arisen as the same research instrument was used to obtain primary data for both the predictor variables and the endogenous variable and the same respondent was used to obtain data for both variable types. Second, shorter scale lengths might have influenced rater responses as respondents use short-term memory to recall previous responses when responding to items. Third, consistency motif might have influenced rater responses to achieve consistency in their answering. Fourth, social acceptability might have influenced rater responses away from their true opinions. Fifth, common scale formats and anchors might have created respondent boredom. Sixth, question ambiguity might have resulted in random responses due to a lack of understanding (Podsakoff et al., 2003).

In order to mitigate for method biases, the research instrument was crafted to separate latent variable scales from one another, and had an above average research length. Moreover, each scale format and anchor varied by scale type and the questions were scrubbed to remove indicator complexity. Equally, social desirability and consistency motif method biases were controlled by ensuring the anonymity of respondents throughout the research cycle.

Statistically, common method bias was mitigated by evaluating the construct validity of the measurement model using the confirmatory factor analysis (CFA) statistical technique (Bagozzi, Yi & Phillips, 1991). Additionally, the Pearson correlation matrix was examined to determine whether any correlations were above 0.9, thus strongly signifying a method bias issue.

3.8.3 Measurement Model Assessment

Measurement theory underpinned the underlying workings of the measurement or outer model, which depicted associations between latent constructs and their manifest variables. There were two types of measurement perspectives in PLS-SEM, reflective and formative. A reflective measurement model represents traditional test theory, as such, the observed measures represent the manifestations of the underlying latent construct, and the indicator variables are highly correlated variables and in fact are the causal effects of the construct. The indicator variables are interchangeable, such that if the trait of the latent constructs changes, it results in a simultaneous change across all of the underlying indicator variables. Reflective latent constructs are measured using a scale. In a formative measurement model, the indicator variables in linear combination encapsulate the sense of the latent variable construct; therefore, an omission of any variable alters the meaning of the construct. Formative models are measured using a multi-item index (Hair et al., 2017).

The classification type of the measurement model applied in this research study was determined by analysing the research scale illustrated in Appendix B for each latent construct. The framework proposed by leading PLS-SEM researchers, Hair et al. (2017), examined latent variables based on whether they are indicative of a trait that explains the characteristics illustrated in each of the underlying indicator variables. It aimed to ascertain whether the indicator variables represent causal effects of the construct; whether dropping individual indicator variables affect the meaning of the construct and finally, and whether changes to the construct results in a downstream change to the characteristics, as depicted via the indicator variables.

First, all latent variables had a multi-item scale. First-order latent variables were as follows: corporate entrepreneurship activity, dynamism, hostility, strategy, entrepreneurial culture, entrepreneurial structure, entrepreneurial reward practices, organisational resources, social networks, growth orientation inspirational, intellectual stimulation, individual consideration, creativity, self-efficacy, locus of control, achievement, goal orientation, metacognitive knowledge, metacognitive experience, metacognitive choice, and monitoring. Second-order latent constructs were as follows: entrepreneurial mindset, transformational leadership, and entrepreneurial persona.

Second, the latent constructs, signified a trait that resulted in the causal effects of the underlying manifest variables and denoted all significant characteristics of the theoretical construct domain.

Third, a change to the latent trait resulted in simultaneous changes to the indicator variables and these were interchangeable (Hair et al., 2017). Thus, the measurement type for this study, taking into consideration the scale makeup of all latent variables illustrated in the empirical model, Figure 3.2, denoted a reflective measurement model application. The accuracy of the measurement model was improved through the utilisation of multi-item scales for each latent construct, which was employed to epitomise the varied aspects of the construct thereby significantly reducing the measurement errors of the latent constructs, due to the causal effects of the latent variable that were omitted from the model.

Given the deduction of the measurement type, it was critical that the reliability and validity of the measurement model was rigorously evaluated to determine the suitability for the inclusion of latent constructs into the path model and was deemed a vital precursor in assessing the significance and impact of the causal relationships within the structural model. The reliability of the measurement model determined whether the manifest variables captured the core characteristics of the latent constructs, whereas the validity established the accuracy of the multi-item scales employed in the study (Afthanorhan, 2012; Hair et al., 2013, 2017).

As such, two types of internal consistency reliability tests were applied to assess the reliability of the measurement model fully, while both convergent and

discriminant validity were examined to determine the validity of the indicators and latent constructs within the measurement model.

Table 3.3: Measurement model summary analysis

Convergent Validity			Internal Consistency Reliability		Discriminant Validity		
Loadings	Indicator Reliability	AVE	Composite Reliability	Cronbach's Alpha	Cross-loading Analysis	Fornell-Larcker Criterion	HTMT Ratio Analysis
>0.70	>0.50	>0.50	0.60-0.90	0.60-0.90	Outer-loading > cross-loading	√AVE > highest latent variable correlation	HTMT confidence interval does not include 1

(Source: Hair et al., 2017, p. 132)

3.8.3.1 Convergent Validity

Convergent validity is the degree to which an indicator variable relates positively to other manifest variables of the same latent construct, and the construct "includes more than 50 per cent of the indicator variance". Convergent validity for indicator variables is established when the outer loadings of the indicator variable is statistically significant and greater than 0.70, thus equalling an indicator reliability that is greater than 0.50. Convergent validity on the construct level is tested by examining the average variance extracted (AVE) and validity is established when the AVE values for each measured construct is greater than 0.50 (Hair et al., 2017 p. 132).

3.8.3.2 Internal Consistency Reliability

The composite reliability test measures the latent variable reliability for inclusion in the path model based on the varied outer loadings of the manifest variables. Indicator reliability is established when the composite reliability of the manifest variable are within the data range of 0.60 to 0.90 (Hair et al., 2017).

Cronbach's alpha postulates the reliability of the "measurement model in measuring latent constructs" (Afthanorhan, 2012, p. 199) based on the inter associations of the measured manifest variables. Indicator reliability is established when Cronbach's alpha values are within the data range of 0.60 to 0.90 (Hair et al., 2017).

3.8.3.3 Discriminant Validity

Discriminant validity, empirically establishes the magnitude to which a latent variable is discrete from the other latent constructs illustrated in the empirical model; denoting that a latent construct is in fact distinctive as it encapsulates characteristics that are not embodied by other latent constructs within the path model. A tri-modal discriminant validity approach was employed where the outer-loadings of the construct were evaluated to determine whether the measurements were larger than any of its cross-loadings. The Fornell-Larcker criterion was employed, where "the square root of each construct's AVE should be greater than its highest correlation with any other construct" (Hair et al., 2017, p. 116). The heterotrait-monotrait (HTMT) ratio of the associations was examined, and the true correlation between latent constructs was determined based on the notion that they are perfectly reliable. Validity is established if the HTMT confidence interval does not include one (Hair et al., 2013, 2017).

3.8.4 Structural Model Assessment

The structural model characterises the structural concepts of the path model and the robustness of the structural model was assessed to establish the model's ability to predict target constructs and the causal relationships between constructs. A methodical approach, illustrated in Figure 3.3, was employed to evaluate the effectiveness of the structural model (Hair et al., 2017).

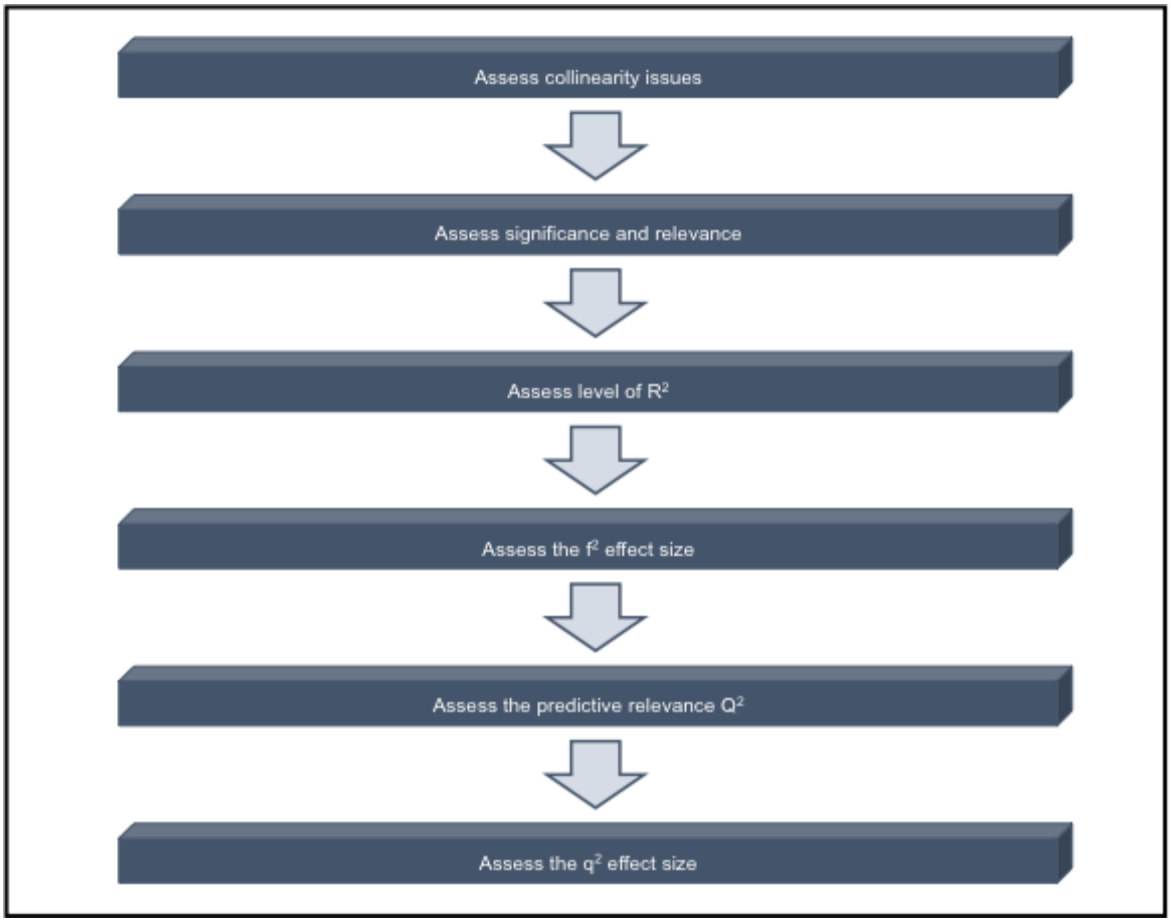


Figure 3.3: Structural Model Assessment Procedure

(Source: Hair et al., 2017, p. 191)

3.8.4.1 Collinearity Assessment

Similar to the measurement model, the structural model was assessed for collinearity. The collinearity of predictor variables was assessed by calculating the tolerance (TOL) values and the variance inflation factors (VIF) of the predictor variables. If the TOL values are greater than 0.20 and the VIF values are less than five, the predictor variables will not exhibit any high levels of collinearity, on the other hand if high levels of collinearity are presented, strategies of creating higher-order constructs, eliminating or merging indicators would be considered (Hair et al., 2013, 2017).

3.8.4.2 Significance and Relevance Assessment

The path coefficients embody the hypothesised or theorised relationships among the latent constructs and characterise the structural model relationships. The size

of the path coefficient ranges from +1 to -1 and path coefficients closer to zero, denote a weak relationship (Hair et al., 2017).

The two-tailed bootstrapping testing approach was applied to evaluate the significance of the path coefficients. The t-values and p-values were assessed to establish predictor significance. This research study employed a five per cent significance level threshold equivalent to a p-value of less than 0.05 and a critical t-value threshold of 1.96. Bootstrapping confidence intervals were examined to provide supplementary evidence “on the stability of the path coefficients” (Hair et al., 2017, p. 208).

3.8.4.3 R^2 Assessment

As part of the evaluation of the structural model, the coefficient of determination or the R^2 value was determined as a measure of the structural “model’s predictive power” (Hair et al., 2017, p. 198). The primary purpose of PLS-SEM is to maximise the R^2 value of the endogenous latent variable or corporate entrepreneurial activity variable within the path model, thus the higher the R^2 value is, the higher the predictive accuracy of the model will be. An R^2 value of greater than 0.5 will establish a moderate predictive capability, and a R^2 value greater than 0.75 will demonstrate a substantial predictive capability. Given the complexity of the empirical model being tested and an inherent bias of the R^2 value towards larger sets of exogenous constructs, this analysis equally includes a computation of the adjusted coefficient of determination or R^2_{adj} value to mitigate bias towards the empirical model (Hair et al., 2017).

3.8.4.4 Effect Size f^2 Assessment

In addition to assessing the R^2 value of the corporate entrepreneurial activity variable or endogenous latent variable, the contribution of each exogenous latent variable to the R^2 value of the corporate entrepreneurial activity variable was equally evaluated, this is referred to as the effect size or f^2 value. An f^2 value of greater than 0.15 denotes a medium effect while values of greater than 0.35 denotes a large effect (Hair et al., 2017).

3.8.4.5 Predictive Relevance Q^2 Assessment

As part of the battery of analysis required within a structural model assessment, the model's predictive relevance or Q^2 value is evaluated. The Q^2 value is determined by utilising the blindfolding statistical technique to attain a "cross-validated redundancy measure" for the corporate entrepreneurial activity variable. A Q^2 value of greater than nought, denotes that the exogenous latent variables within the path model have predictive relevance for the corporate entrepreneurial activity variable (Hair et al., 2017, p. 209).

3.8.5 Moderation Analysis

Given that the measurement model is formative, the PLS-SEM two-stage approach was adopted to evaluate the moderating effects of moderator 1a (external environment), moderator 1b (external environment), moderator 2 (organisational architecture) and moderator 3 (growth orientation) within the path model and its relative significance. The moderator variables were rigorously evaluated using the measurement model battery of tests described in Section 3.8.3. Moderator 1a, moderator 1b, moderator 2 and moderator 3 illustrated in Figure 3.2, were referred to as the interaction terms within a moderation model.

3.8.5.1 Moderator 1

The empirical model, illustrated in Figure 3.2, included causal relationships and systematic influence of environmental forces (dynamism and hostility) acting upon the organisational ecosystem theorised in Figure 2.9. The model predicted that the strength of the causal relationships between the organisational antecedent variable and corporate entrepreneurial activity was dependent on the precipitating effect of environmental forces (moderator 1b). Additionally, the model predicted that the strength and direction of the causal relationship between the employee antecedent variable and corporate entrepreneurial activity was equally dependent on the precipitating effect of environmental forces (moderator 1a).

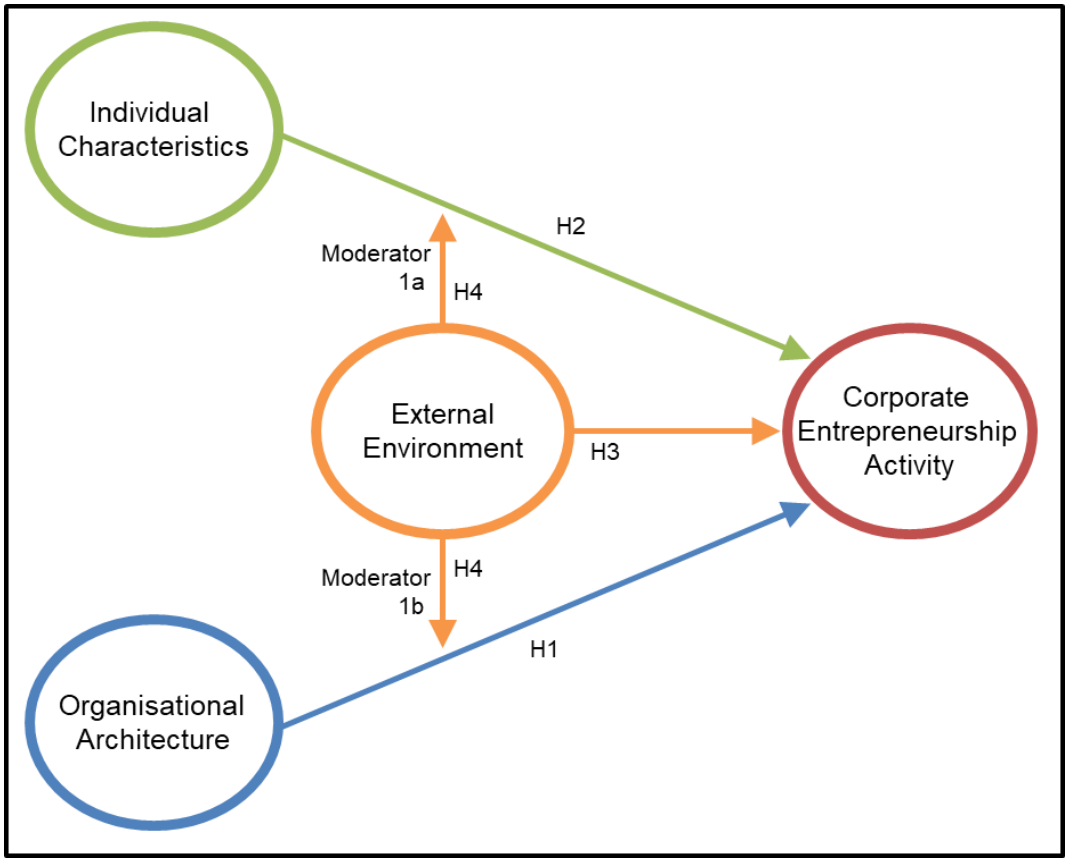


Figure 3.4: Moderation model 1

(Source: Own)

The stage 1 analysis included the evaluation of the latent variable values within the moderation model without the inclusion of the interaction terms. The stage 2 analysis included the interaction term, derived by multiplying the latent variable values of the exogenous latent variable (organisational antecedent variable or employee antecedent variable) and the moderator variable (environmental forces). Additionally, the f^2 effect size of the moderator 1a and 1b variables, denoted in Figure 3.4, was calculated, to determine the degree of influence that the moderator variable had on the explanation of the corporate entrepreneurial activity variable. An f^2 value of greater than 0.01 denotes a medium moderating effect while values of greater than 0.025 denote a large moderating effect (Hair et al., 2017).

3.8.5.2 Moderator 2

The empirical model denoted in Figure 3.2, predicted that the strength of the causal relationship between employee antecedent variables of entrepreneurial persona, entrepreneurial mindset, social networks, and corporate entrepreneurial activity was dependent on the entrepreneurially conducive organisational architecture of a firm (moderator 2) and acted as a motivational driver in employee entrepreneurial behaviour, as captured in the moderation relationship illustrated in Figure 3.5.

The stage 1 analysis included the evaluation of the latent variable value within the moderation model and excluded the interaction term. The stage 2 analysis included the interaction term, derived by multiplying the exogenous latent variable (employee antecedent variable) and the moderator variable (organisational architecture). Additionally, the f^2 effect size of the moderator 2 variable was evaluated to determine the degree of influence enabling organisational architecture had on the explanation of the corporate entrepreneurial activity variable. An f^2 value of greater than 0.01 denotes a medium moderating effect while values of greater than 0.025 denote a large moderating effect (Hair et al., 2017).

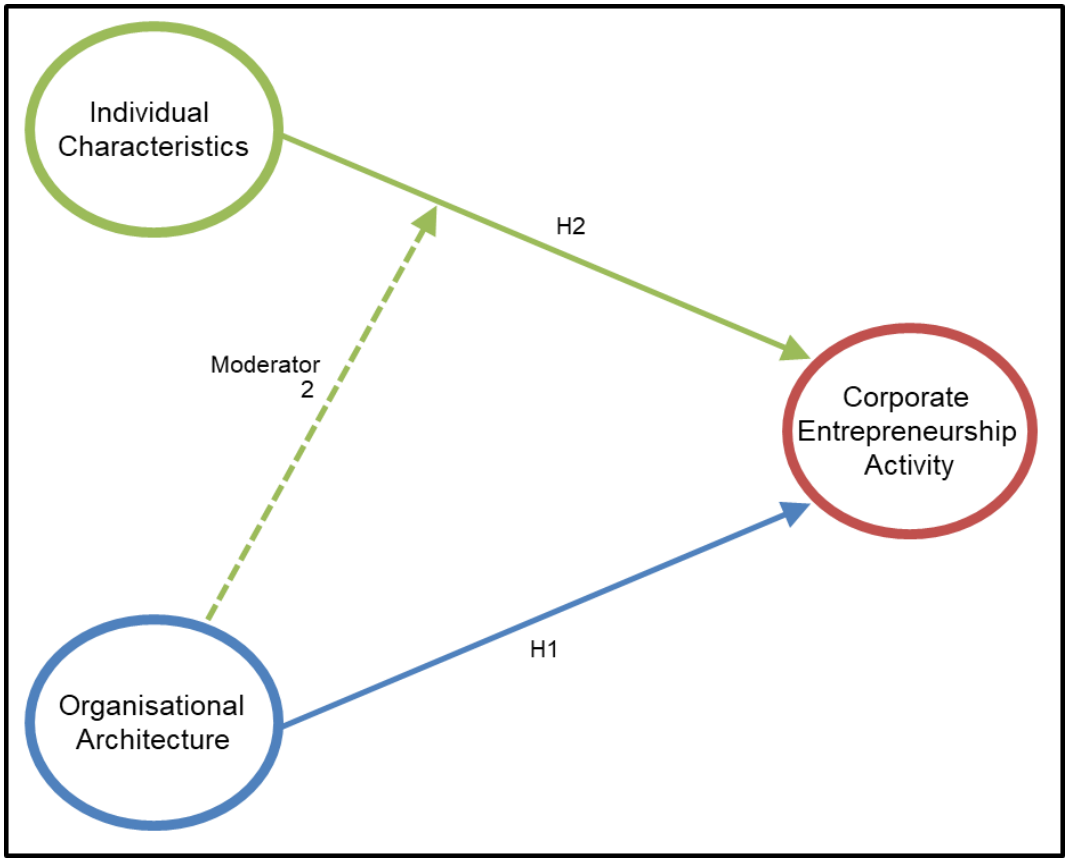


Figure 3.5: Moderation model 2

(Source: Own)

3.8.5.3 Moderator 3

The empirical model denoted in Figure 3.2, predicted that the strength and direction of the causal relationship between the environmental antecedent variables of dynamism and hostility and corporate entrepreneurial activity was dependent on the entrepreneurial momentum or growth orientation of an organisation (moderator 3) relationship as illustrated in Figure 3.6.

The stage 1 analysis included the evaluation of the latent variable value within the moderation model and excluded the interaction term. The stage 2 analysis included the interaction term, derived by multiplying the environmental antecedent variable and the moderator variable (growth orientation). Additionally, the f^2 effect size of the moderator 3 variable was gauged to determine the degree of influence growth orientation had on the explanation of the corporate entrepreneurial activity variable. An f^2 value of greater than 0.01 denotes a medium moderating effect

while values of greater than 0.025 denote a large moderating effect (Hair et al., 2017).

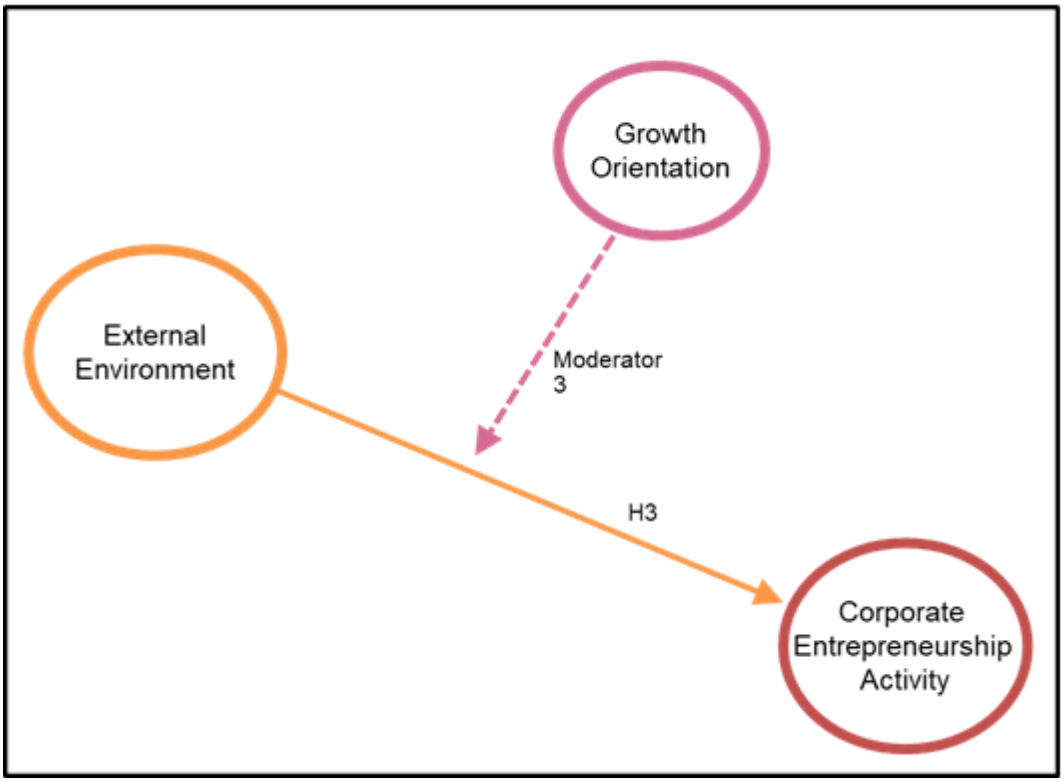


Figure 3.6: Moderation model 3

(Source: Own)

3.9 Limitations of the Study

As the empirical model created for this study was a derivative of conceptual frameworks modelled on large firms, as illustrated in Figure 2.1, the inferences deduced from this study should not be universally applied to smaller organisations.

Equally, because this study is conducted within the banking industry, which is both complex and highly regulated, generalised inferences cannot be directly applied across other industries without further empirical testing in different sectors.

Since the study is a localised study in Africa, a developing continent, generalised inferences cannot be directly applied to developed countries without further

empirical testing as corporate entrepreneurial activity in developed countries is significantly higher than developing countries (Singer et al., 2018).

As this study is a cross-sectional research study, the “recent mood-inducing events” psychology, which Podsakoff et al. (2003, p. 882) referred to as “transient mood state” might hinder the way respondents evaluate themselves, leadership and the external operating environment, thus potentially affecting the measurement error of the model.

Given that the sampling technique leveraged in this study was a combination of convenience sampling and snowball method, over sampling from one institution could influence the deductions based on a particular incumbent archetype. In addition, since snowball sampling cannot generate a true random sample, inevitably because of the reality of how the sample method is implemented, it results in the sample population being skewed based on a outlook or a set of characteristics similar to the initial respondent cohort (Etikan et al., 2016).

Although the design of the research study controlled for common method biases, context bias emanating from the meaning transferred from prior questions into how adjacent questions are answered could not be fully mitigated against. Equally, biases attributed to rapport, where the level of accuracy is elevated due to a respondent becoming increasingly more comfortable in their role, could contribute to some degree of measurement error in questions contained in the beginning of the survey (Jonsdottir, 2004).

In addition, given the full length of the survey, respondent fatigue contributed to the quantum of answered questions per survey, and equally affected the total number of respondents that participated in this research study (Jonsdottir, 2004). Although the impact was significantly mitigated by the research study employing a PLS-SEM statistical technique, there was a small probability that it could have contributed to measurement error (Hair et al., 2017).

The empirical model, which underpinned this study, was based on a reflective-reflective model, which was established based on a robust diagnostic analysis. However, if a component latent variable is in fact more of a formative variable, it would increase the measurement error in the model (Hair et al., 2017).

3.10 Conclusion

The research methodology applied in this study was quantitative and cross-sectional. Primary data was collected through closed, structured surveys administered across select banking group companies in South Africa.

The targeted sampling population included management employees, in order for the study to include a diversity of managerial perspectives. Convenience sampling augmented with the snowball method was employed to achieve a fair sampling representation. A digital self-administered survey was leveraged to enable easy reach, efficient tracking, and effective data collection.

The research instrument, which was an ordinal research scale was designed leveraging established research scales with Cronbach alpha scores of greater than 0.7. The survey was user-friendly and took approximately 30 minutes to complete. In administering the survey, the study adhered to all the recommended ethical guidelines.

Due to the quantum of simultaneous causal relationships being tested within the empirical model, second generational statistical tools were employed for this study. As the study combined both confirmatory and exploratory theory building, PLS-SEM was applied as the statistical framework for data modelling.

The battery of statistical tests included both a measurement model (outer empirical model) and a structural model (inner empirical model) assessment. This consisted of an examination of the validity, collinearity, significance and relevance, R^2 value, effect size, and predictive relevance of the model including the moderating effects.

This framework encompassed the empirical structure, by which the acceptance of the proposed hypotheses were ascertained and the empirical model's predictive power determined, to explain the variance in corporate entrepreneurial activity.

4 EMPIRICAL RESULTS

The research study entailed validating the theoretical model by empirically testing the hypotheses, and leveraging the partial least squares structural equation modelling (PLS-SEM) statistical analysis toolkit, through the SmartPLS 3 software. The raw data was obtained from completed quantitative survey instruments that were administered electronically to employees of the five major banks, headquartered in South Africa. The completed surveys were scrubbed for missing data, resulting in responses being excluded when the missing data per survey instrument was greater than the minimum threshold of 15 per cent or a large section of responses within a particular construct are absent. Initially, the total number of respondents across the five major banks resulted in 212 responses, however post data cleaning, this dropped to circa 176 responses. The total number of retained observations exceeded the minimum required sample size of 156 responses, informed by the evaluation parameters of a statistical power analysis of 80 per cent, a significance level of five per cent and a minimum R^2 value of 0.10 (Hair et al., 2017).

Four factors contributed to the overall number of responses, namely the COVID-19 pandemic, the Protection of Personal Information (POPI) Act, company survey fatigue, and the length of the research survey being 125 questions. The pandemic and working from home made access to people and following up with people that have made commitments, very difficult. People had also been generally dealing with sickness and loss, which added to the retracting of commitments. The POPI Act prevented access to mailing lists; as such, individual contact was required, which made access to many potential respondents challenging. Companies were also administering several of their own internal surveys concurrently and employees were survey fatigued during the COVID-19 period. The research survey took approximately 30 to 35 minutes to complete and thus requires a deep commitment from respondents to complete the survey. The upside to the lengthy survey was the richness in the data analysis and discussion; however, the downside was the tedious process of getting people to commit to fully completing the survey.

The statistical analysis of the raw data was in line with the methodology set out in Chapter 3 of this report and entailed the examination of the data across three paradigms, the descriptive statistics of the empirical model, and an assessment of the inner and outer empirical models. The hundred and twenty-five questions that made up the multi-item scale leveraged both the Likert and bipolar scales, and as such were all continuous variables.

4.1 Profile of Respondents

The data analysis necessitated an assessment of the profile of respondents in relation to their managerial level within the company, their gender, as well as their country of work. These parameters are all categorical variables.

Table 4.1: Employee level profile

Corporate Level	Frequency	Percent	Cumulative Percent
Team leader	27	16%	16%
Junior to middle management (management)	32	18%	34%
Senior management	98	56%	90%
Top management	17	10%	100%

(Source: Own)

The profile of managerial levels among the respondents reflected that the bulk of respondents were part of the senior management cohort, as seen in Table 4.1. Augmenting the senior management cohort with the top management cohort, denoted that 66 per cent of observations were from the bank's leadership teams. These teams played a role in co-creating the culture of the bank and role modelling the desired behaviours informed by the strategy and dominant logic of the company, thus they influence corporate entrepreneurial behaviour within their respective organisations. None of the sampling population included the top teams of the banks, thus the team that informs, designs, and signs off the future direction of the sampling organisation were not included.

A small percentage of junior and middle managers were also part of the final respondent pool, this cohort group is critical according to Kuratko et al. (2005) in

executing actions in line with the strategy and the behaviours and decisions taken by the leadership teams of their respective organisations. Augmenting the lower managerial cohorts, only 34 per cent of observations are reflective of the engine room for corporate entrepreneurial behaviour and idea generation, within the sampling organisations.

Table 4.2: Gender profile

Gender	Frequency	Percent	Cumulative Percent
Male	76	43%	43%
Female	100	57%	100%

(Source: Own)

According to the Global Entrepreneurship Monitor (GEM) report (Bosma et al., 2021), entrepreneurial behaviour across gender demographics varies, due to differing gender motivational drivers and inclusivity of society, as well as organisations. Although the data set did not reflect a skewness of observations per gender type nor a gender bias, it did however represent a 14 per cent additional representation of female respondents, as seen in Table 4.2.

Table 4.3: Country profile

Country	Frequency	Percent	Cumulative Percent
South Africa	171	99%	99%
Ex South Africa	2	1%	100%

(Source: Own)

Early evidence by Hofstede (1983) suggested that country cultural values influence motivational propensities of individuals to engage in entrepreneurial activity. As such, the intention of this study was to utilise country as a control variable. Due to the 99 per cent skewness of the data towards South Africa, as seen in Table 4.3, this parameter was dropped as a control variable.

4.2 Descriptive Statistics

The empirical model illustrated in Figure 3.2 consisted of 22 first order latent variables, four second order latent variables, and two third order latent variables.

Due to the disjoint two-step approach for hierarchical component model (HCM) models, composite scores were utilised as a proxy for higher order models indicator variables, as such descriptive statistics were only conducted for first order latent variables. The centrality and variable spread per first order latent construct was examined and the findings are depicted in Table 4.4.

Table 4.4: Descriptive statistics for first order latent variables

Latent Variable	Mean	Median	Std. Deviation
Corporate entrepreneurship	4.90	5.29	1.35
Achievement	5.65	5.8	0.67
Locus of control	2.73	2.5	1.09
Creativity	5.76	5.8	0.67
Optimism	6.11	6.13	0.56
Goal orientation	5.78	6	0.95
Metacognitive knowledge	5.87	6	0.59
Metacognitive experience	5.85	6	0.69
Metacognitive choice	5.64	5.8	0.87
Monitoring	5.64	5.83	0.76
Social networks	5.03	5.4	1.61
Strategy	4.58	4.4	0.94
Entrepreneurial culture	4.67	4.67	2.01
Entrepreneurial structure	4.15	4	1.97
Entrepreneurial reward practices	4.58	4.3	2.12
Organisational resources	6.13	6	1.55
Inspirational motivation	5.59	5.95	1.35
Intellectual stimulation	5.21	5.25	1.38
Individualised consideration	4.95	5	1.49
Growth orientation	5.03	5	2.30
Dynamism	4.7	4.83	1.29
Hostility	4.38	4.33	1.01

(Source: Own)

Evaluation of the data represented in Table 4.4, the mean and medians of each of the first order constructs are closely aligned, denoting a uniform spread around the construct's average score. In addition, the standard deviation parameters of the first order constructs were within the range of nought to two, as shown in Table 4.5, representative of the variation in responses away from the construct's average score (Lee, 2015).

Table 4.5: Data normality statistics for first order latent variables

Latent Variable	Mean	Skewness	Kurtosis
Corporate entrepreneurship	4.90	-0.59	-0.49
Achievement	5.65	-0.95	1.37
Locus of control	2.73	0.83	0.25
Creativity	5.76	-0.50	0.16
Optimism	6.11	-0.46	-0.02
Goal orientation	5.78	-1.63	3.78
Metacognitive knowledge	5.87	-0.71	0.57
Metacognitive experience	5.85	-1.07	1.74
Metacognitive choice	5.64	-0.66	-0.07
Monitoring	5.64	-0.69	0.56
Social networks	5.03	-0.76	-0.20
Strategy	4.58	-0.24	0.68
Entrepreneurial culture	4.67	0.44	-0.31
Entrepreneurial structure	4.15	0.06	-0.18
Entrepreneurial reward practices	4.58	0.53	-0.09
Organisational resources	6.13	0.10	0.22
Inspirational motivation	5.59	-0.98	0.20
Intellectual stimulation	5.21	-0.71	0.17
Individualised consideration	4.95	-0.41	-0.71
Growth orientation	5.03	0.07	-0.53
Dynamism	4.7	-0.50	0.05
Hostility	4.38	0.03	-0.49

(Source: Own)

Although PLS-SEM, "does not require the data set to be normally distributed", it still remains essential to verify that the data set is "not too far from normal as extremely non-normal data prove problematic in the assessment of the

parameters' significances as they inflate standard errors obtained from bootstrapping" (Hair et al., 2017, p. 61).

The skewness and kurtosis of the first order latent variables is depicted in Table 4.5. Skewness scores of between -0.99 and 0.99, indicate a symmetrical distribution whereas kurtosis scores of between -0.99 and 0.99 indicate a non-peak distribution. A normal distribution curve is both symmetrical and has a non-peak distribution curve.

An assessment of the data represented in Table 4.5, disclosed that the majority of first order constructs denoted a normal distribution profile except for achievement, goal orientation, and metacognitive experience, which were non-normal data sets.

The skewness and kurtosis parameters for achievement and metacognitive experience were not "extremely non-normal", thus its effect on the bootstrapping significance results is immaterial, whereas the kurtosis score for goal orientation was above three, signifying a potential impact on the bootstrapping significance results (Lee, 2015).

4.2.1 Correlation Analysis

The linear association between the first order latent constructs are depicted in Table 4.6 and signified the strength and directionality of the relationship and the significance of the relationship findings, denoting the confidence in statistical accuracy of the data set.

Table 4.6 Multivariate correlations for first order latent variables using pairwise method

Latent Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1. Corporate entrepreneurship	1																					
2. Achievement	0.12	1																				
3. Locus of control	-0.03	-0.04	1																			
4. Creativity	0.16**	0.45***	-0.24***	1																		
5. Optimism	0.19**	0.42***	-0.24***	0.59***	1																	
6. Goal orientation	0.16**	0.50***	-0.28***	0.46***	0.46***	1																
7. Metacognitive knowledge	0.20***	0.40***	-0.10	0.34***	0.45***	0.46***	1															
8. Metacognitive experience	0.06	0.47***	-0.20***	0.51***	0.54***	0.56***	0.51***	1														
9. Metacognitive choice	0.23***	0.45***	-0.03	0.36***	0.41***	0.55***	0.56***	0.47***	1													
10. Monitoring	0.19**	0.43***	-0.12	0.51***	0.49***	0.59***	0.66***	0.65***	0.64***	1												
11. Social networks	-0.02	0.11	-0.16**	0.16**	0.18**	0.08	0.15**	0.13*	0.00	0.14*	1											
12. Strategy	0.50***	0.19***	-0.09	0.20***	0.21***	0.14*	0.16**	0.09	0.15*	0.16**	0.15**	1										
13. Entrepreneurial culture	-0.14*	-0.03	0.10	-0.10	-0.13*	-0.12	-0.15**	-0.11	-0.00	-0.07	-0.07	-0.05	1									
14. Entrepreneurial structure	0.38***	-0.09	0.05	-0.02	-0.04	-0.08	-0.04	-0.09	0.01	-0.00	0.06	0.27***	0.28***	1								
15. Entrepreneurial reward practices	0.38***	-0.06	0.02	0.08	0.15*	0.01	-0.01	0.00	0.04	0.00	0.13*	0.39***	0.21***	0.52***	1							
16. Organisational resources	0.18**	0.09	-0.07	0.09	0.12	0.00	-0.03	0.11	0.04	0.05	0.04	0.26***	0.24***	0.13*	0.22**	1						

Latent Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
17. Inspirational motivation	0.38***	0.05	-0.16**	0.13*	0.08	-0.09	0.10	0.00	0.01	0.00	-0.09	0.39***	-0.10	0.15**	0.18**	0.11	1					
18. Intellectual stimulation	0.32***	-0.00	-0.19**	0.26***	0.14*	-0.02	0.11	0.01	0.05	0.10	-0.08	0.33***	-0.05	0.18**	0.18**	0.11	0.80***	1				
19. Individualised consideration	0.39***	0.03	-0.09	0.23**	0.13*	-0.03	0.14*	0.05	-0.01	0.09	-0.10	0.32*	-0.09	0.20***	0.20***	0.17**	0.77	0.75***	1			
20. Growth orientation	-0.09	-0.15**	0.05	-0.06	-0.05	-0.11	-0.10	-0.04	-0.06	-0.07	-0.05	0.06	0.47***	0.33***	0.25***	0.19***	0.04	0.06	0.10	1		
21. Dynamism	0.17**	0.18**	0.10	0.04	0.04	0.02	0.15**	0.01	0.12	0.12	0.07	0.19**	0.03	0.04	0.13*	0.17**	0.01	0.01	0.02	0.09	1	
22. Hostility	0.13*	0.29***	0.12	0.08	0.01	-0.01	0.08	-0.02	0.03	0.02	-0.07	0.11	0.07	0.01	0.06	0.16**	0.10	0.04	0.06	0.02	0.47***	1

Key: *p<0.10, **p<0.05, ***p<0.01

(Source: Own)

Grounded on the correlation analysis depicted in Table 4.6, the following deductions based on relationships hypothesised in Chapter 2, were drawn, and findings denoted either a 95 per cent or 99 per cent confidence in data accurateness:

- There was a positive large correlation (0.50), indicating a good association between strategy and corporate entrepreneurial activity.
- There was a positive moderate correlation (0.38), indicating an association between entrepreneurial reward and corporate entrepreneurial activity.
- There was a positive moderate correlation (0.38), indicating an association between entrepreneurial structure and corporate entrepreneurial activity.
- There was a positive small correlation, between organisational resources, creativity, optimism, goal orientation, dynamism, and corporate entrepreneurial activity.

The material findings all signified a positive linear relationship, hence when corporate entrepreneurial activity levels were high, so were the levels of entrepreneurial strategy, reward, structure, organisational resources, creativity, optimism, goal orientation, and dynamism.

4.3 Measurement Model Analysis

The empirical model embodied a reflective-reflective higher order latent variable PLS-SEM statistical model, which according to Crocetta, Antonucci, Cataldo, Galasso, Grassia, Lauro and Marino (2020) is a type 1, PLS-SEM model. The research empirical model consisted of 22 first order latent variables, four second order latent variables and two third order latent variables. To estimate the measurement and structural parameters of the higher order constructs within the model, the disjoint two-stage approach was adopted as the model's estimation methodology. Since the model had third order constructs, stage 1 included one layer: the first order model, and stage 2 included two layers: the second order and third order models.

The first stage of the disjoint two-stage approach included the estimation of the model by connecting the first-order exogenous and endogenous latent constructs leveraging the reflective measurement model, along with the reliability and validity analysis toolkits. Thus, the stage 1 model excluded any higher order constructs. The indicator variables were tested for inclusion in the second stage model based on the analysis deduced from the reliability and validity assessments (Sarstedt, Hair, Cheah, Becker & Ringle, 2019).

The second stage analysis entailed utilisation of the latent variable scores from the first stage, first order constructs, and as manifest variables of the second order latent constructs to create the second order model. The construct variables were tested for inclusion in the third stage model based on the analysis deduced from the reliability and validity assessments. Similarly, the latent variable scores from the second order constructs were used as manifest variables of the third order latent constructs, which was the basis for creating the third order model. The construct variables were tested for inclusion in the structural model based on the analysis deduced from the reliability and validity assessments (Crocetta et al., 2020; Sarstedt et al., 2019).

As the empirical model was an HCM type, the quality of the hierarchical constructs were based on an assessment of the measurement model, which was a multi-tiered approach and entailed the systematic evaluation of the reliability and validity of the instrument, at each order level of the latent variable model (Sarstedt et al., 2019).

4.3.1 Stage 1: First Order Latent Variable Model, Reliability and Validity Analysis

The first stage of the measurement model analysis entailed the reliability and validity analysis of the first order latent construct model.

The assessment of the reflective measurement model entailed the examination of composite and indicator reliability, whereas convergent validity was evaluated using the average variance extracted (AVE) analysis, and discriminant validity was

assessed leveraging the Fornell-Larcker criteria, the constructs cross-loadings and the heterotrait-monotrait (HTMT) ratio analysis (Hair et al., 2017).

4.3.1.1 Reliability

Factor loadings related to the degree to which indicator variables were associated with the latent construct. The factor loadings for the first order latent variables are illustrated in Tables 4.7 to 4.11.

Table 4.7: Independent variable: Employee latent variables, indicator variables

Achievement	Loadings	Locus of control	Loadings	Creativity	Loadings	Optimism	Loadings	Entrepreneurial mindset	Loadings	Social Networks	Loadings
A01		LC01	0.62	C01	0.83	OP01	0.57	GO01	0.82	SN01	
A02	0.72	LC02		C02	0.81	OP02		GO02	0.86	SN02	
A03		LC03	0.74	C03	0.79	OP03	0.84	GO03	0.79	SN03	0.98
A04		LC04	0.78	C04	0.73	OP04	0.83	GO04	0.87	SN04	0.91
A05	0.60	LC05	0.66	C05	0.71	OP05	0.69	GO05	0.80	SN05	0.71
A06		LC06		C06	0.57	OP06		MK01	0.76		
A07	0.71	LC07	0.77	C07		OP07	0.80	MK02	0.79		
A08		LC08	0.77	C08	0.65	OP08	0.83	MK03			
A09	0.82			C09	0.60			MK04			
A10				C10	0.76			MK05	0.67		
								MK06			
								MK07	0.70		
								MK08	0.66		
								MK09			
								MK10			
								ME01	0.63		
								ME02	0.78		
								ME03	0.80		
								ME04	0.72		
								ME05	0.68		
								ME06			

Achievement	Loadings	Locus of control	Loadings	Creativity	Loadings	Optimism	Loadings	Entrepreneurial mindset	Loadings	Social Networks	Loadings
								MC01	0.71		
								MC02	0.58		
								MC03	0.83		
								MC04	0.80		
								MC05	0.82		
								M01	0.70		
								M02	0.67		
								M03	0.72		
								M04			
								M05	0.81		
								M06	0.66		

Key: *p<0.10, **p<0.05, ***p<0.01, CEA: corporate entrepreneurial activity, GR: growth orientation, S: strategy, EC: entrepreneurial culture, ES: entrepreneurial structure, ER: entrepreneurial reward practices, OR: organisational resources, TL: transformational leadership, I: inspirational, IS: intellectual stimulation, IC: individual consideration, EM: entrepreneurial mindset, GO: goal orientation, MK: metacognitive knowledge, ME: metacognitive experience, MC: metacognitive choice, M: monitoring, EP: entrepreneurial persona, A: achievement, LC: locus of control, C: creativity, OP: optimism, SN: social networks, D: dynamism, H: hostility, EE: external environment, E: employee, Org: organisation.

Table 4.8: Independent variable: Organisational latent variables, indicator variables

Strategy	Loadings	Entrepreneurial culture	Loadings	Entrepreneurial structure	Loadings	Entrepreneurial reward practices	Loadings	Organisational resources	Loadings	Transformational leadership	Loadings
S01	0.84	EC01	0.67	ES01	0.84	ER01	0.90	OR01	0.98	I01	0.88
S02		EC02	0.81	ES02	0.85	ER02	0.80	OR02	0.48	I02	0.90
S03	0.70	EC03	0.97	ES03	0.89	ER03	0.93	OR03	0.46	I03	0.90
S04	0.88			ES04	0.77			OR04		I04	0.80
S05				ES05	0.77					I05	0.87
										I06	
										I07	0.88
										I08	0.85
										I09	
										I10	0.90
										IS01	0.92
										IS02	0.94
										IS03	0.92
										IS04	
										IC01	0.89
										IC02	0.93
										IC03	0.92

Key: *p<0.10, **p<0.05, ***p<0.01, CEA: corporate entrepreneurial activity, GR: growth orientation, S: strategy, EC: entrepreneurial culture, ES: entrepreneurial structure, ER: entrepreneurial reward practices, OR: organisational resources, TL: transformational leadership, I: inspirational, IS: intellectual stimulation, IC: individual consideration, EM: entrepreneurial mindset, GO: goal orientation, MK: metacognitive knowledge, ME: metacognitive experience, MC: metacognitive choice, M: monitoring, EP: entrepreneurial persona, A: achievement, LC: locus of control, C: creativity, OP: optimism, SN: social networks, D: dynamism, H: hostility, EE: external environment, E: employee, Org: organisation.

(Source: Own)

Table 4.9: Independent variable: Environmental latent variables, indicator variables

Dynamism Variables	Loadings	Hostility Variables	Loadings
D01	0.84	H01	0.90
D02	0.93	H02	0.92
D03	0.64	H03	0.50
		H04	
		H05	
		H06	

Key: *p<0.10, **p<0.05, ***p<0.01, CEA: corporate entrepreneurial activity, GR: growth orientation, S: strategy, EC: entrepreneurial culture, ES: entrepreneurial structure, ER: entrepreneurial reward practices, OR: organisational resources, TL: transformational leadership, I: inspirational, IS: intellectual stimulation, IC: individual consideration, EM: entrepreneurial mindset, GO: goal orientation, MK: metacognitive knowledge, ME: metacognitive experience, MC: metacognitive choice, M: monitoring, EP: entrepreneurial persona, A: achievement, LC: locus of control, C: creativity, OP: optimism, SN: social networks, D: dynamism, H: hostility, EE: external environment, E: employee, Org: organisation.

(Source: Own)

Table 4.10: Dependant variable: Corporate entrepreneurship latent variable, indictor variables

Corporate Entrepreneurship Variables	Loadings
CE01	0.72
CE02	0.77
CE03	0.90
CE04	0.84
CE05	0.90
CE06	0.87
CE07	0.86

Key: *p<0.10, **p<0.05, ***p<0.01, CEA: corporate entrepreneurial activity, GR: growth orientation, S: strategy, EC: entrepreneurial culture, ES: entrepreneurial structure, ER: entrepreneurial reward practices, OR: organisational resources, TL: transformational leadership, I: inspirational, IS: intellectual stimulation, IC: individual consideration, EM: entrepreneurial mindset, GO: goal orientation, MK: metacognitive knowledge, ME: metacognitive experience, MC: metacognitive choice, M: monitoring, EP: entrepreneurial persona, A: achievement, LC: locus of control, C: creativity, OP: optimism, SN: social networks, D: dynamism, H: hostility, EE: external environment, E: employee, Org: organisation.

(Source: Own)

Table 4.11: Moderator: Growth orientation latent variable, indicator variables

Growth Orientation Variables	Loadings
GR01	0.69
GR02	0.98
GR03	

Key: *p<0.10, **p<0.05, ***p<0.01, CEA: corporate entrepreneurial activity, GR: growth orientation, S: strategy, EC: entrepreneurial culture, ES: entrepreneurial structure, ER: entrepreneurial reward practices, OR: organisational resources, TL: transformational leadership, I: inspirational, IS: intellectual stimulation, IC: individual consideration, EM: entrepreneurial mindset, GO: goal orientation, MK: metacognitive knowledge, ME: metacognitive experience, MC: metacognitive choice, M: monitoring, EP: entrepreneurial persona, A: achievement, LC: locus of control, C: creativity, OP: optimism, SN: social networks, D: dynamism, H: hostility, EE: external environment, E: employee, Org: organisation.

(Source: Own)

The outer factor loading relevance test for indicator reliability assessed the outer loadings of the indicator variables. If the outer-loadings were greater than 0.70, it was automatically retained in the stage 1 measurement model; however, if the outer-loadings were greater than or equal to 0.40 and less than 0.70, it was retained in the model as deletion caused a downstream impact, resulting in the increasing of other measure(s) above the reliability and validity threshold values. If the outer loadings were less than 0.40, the indicator variable was automatically deleted from the stage 1 measurement model (Hair et al., 2017).

Based on the initial factor loading analysis across the first order latent variables, the following indicator variables, namely H04, H05, H06, A01, A03, LC02, OP02, OP06, SN01, SN02, MK04, ME06, M04, S02, S05, OR4 were deleted from the empirical model as their outer loading scores were less than 0.40.

Although multi-collinearity is not an issue in reflective measurement models, as indicators are interchangeable and are highly correlated, the VIF analysis (Table 4.12) for multi-collinearity at each stage of the HCM model was evaluated to mitigate multi-collinearity issues within the structural model (Sarstedt et al., 2019).

Table 4.12: VIF analysis

Indicator Variable	Score
A01	
A02	1.256
A03	
A04	
A05	1.294
A06	
A07	1,259
A08	
A09	1.424
A10	
LC01	1.592
LC02	
LC03	1.931
LC04	1.371
LC05	1.629
LC06	
LC07	2.04
LC08	2.11
C01	2.523
C02	2.619
C03	2.004
C04	2.006
C05	2.171
C06	1.459
C07	
C08	2.196
C09	1.298
C10	2.253
OP01	1.646
OP02	
OP03	2.000
OP04	2.620
OP05	1.992
OP06	
OP07	1.830
OP08	2.576

Indicator Variable	Score
GO01	2.645
GO02	2.693
GO03	2.106
GO04	2.116
GO05	2.209
MK01	1.925
MK02	1.882
MK03	
MK04	
MK05	1.428
MK06	
MK07	1.360
MK08	1.577
MK09	
MK10	
ME01	1.309
ME02	1.480
ME03	1.952
ME04	2.302
ME05	1.840
ME06	
MC01	1.479
MC02	1.445
MC03	1.951
MC04	1.751
MC05	1.713
M01	1.331
M02	1.476
M03	1.533
M04	
M05	1.720
M06	1.474
SN01	
SN02	
SN03	3.746
SN04	3.204

Indicator Variable	Score
SN05	1.783
S01	1.557
S02	
S03	3.746
S04	1.794
S05	
EC01	1.861
EC02	2.017
EC03	1.992
ES01	2.949
ES02	3.583
ES03	3.405
ES04	2.067
ES05	1.869
ER01	2.324
ER02	1.819
ER03	2.722
OR01	1.152
OR02	1.352
OR03	1.304
OR04	
I01	3.997
I02	4.945
I03	4.854
I04	2.25
I05	3.83
I06	
I07	4.687
I08	3.951

Indicator Variable	Score
I09	
I10	4.265
IS01	3.136
IS02	4.269
IS03	3.121
IS04	
IC01	2.384
IC02	3.55
IC03	3.004
D01	1.614
D02	2.021
D03	1.495
H01	1.893
H02	2.022
H03	1.18
H04	
H05	
H06	
CE01	2.064
CE02	2.368
CE03	4.636
CE04	2.820
CE05	4.336
CE06	4.393
CE07	4.094
GR01	1.409
GR02	1.409
GR03	

Key: CEA: corporate entrepreneurial activity, GR: growth orientation, S: strategy, EC: entrepreneurial culture, ES: entrepreneurial structure, ER: entrepreneurial reward practices, OR: organisational resources, TL: transformational leadership, I: inspirational, IS: intellectual stimulation, IC: individual consideration, EM: entrepreneurial mindset, GO: goal orientation, MK: metacognitive knowledge, ME: metacognitive experience, MC: metacognitive choice, M: monitoring, EP: entrepreneurial persona, A: achievement, LC: locus of control, C: creativity, OP: optimism, SN: social networks, D: dynamism, H: hostility, EE: external environment, E: employee, Org: organisation.

(Source: Own)

Post the initial VIF analysis across the first order latent variables, the following indicator variables, namely I06, I09, IS04 were deleted from the empirical model as their VIF scores were greater than 0.50.

Based on the final VIF analysis, depicted in Table 4.14, all indicator variables retained in the first order latent variable measurement model had a VIF score of less than five indicating no multi-collinearity issues (Sarstedt et al., 2019).

Composite reliability (Table 4.12) was examined by evaluating the internal consistency of the first order variables. Internal consistency provided an estimation of the reliability of variables based on the traditional criterion of Cronbach's alpha, which evaluates the inter-correlations between variables and the composite reliability criterion, and factors in the various outer loadings of manifest variables. According to Hair et al. (2017), true composite reliability is in-between a variable's Cronbach's alpha score (lower bound) and composite reliability score (upper bound) and assesses whether an instrument scale is constant and consistent in its repeatability of measuring a particular construct.

Table 4.13: Composite reliability

Latent Variable	Score
Corporate entrepreneurship	0.943
Achievement	0.805
Locus of control	0.870
Creativity	0.905
Optimism	0.893
Goal orientation	0.916
Metacognitive knowledge	0.840
Metacognitive experience	0.846
Metacognitive choice	0.866
Monitoring	0.837
Social networks	0.905
Strategy	0.849
Entrepreneurial culture	0.864
Entrepreneurial structure	0.913
Entrepreneurial reward practices	0.910
Organisational resources	0.696

Latent Variable	Score
Inspirational motivation	0.962
Intellectual stimulation	0.948
Individualised consideration	0.937
Dynamism	0.853
Hostility	0.830
Growth orientation	0.832

(Source: Own)

The final composite reliability scores across the first order latent variables, as depicted in Table 4.13, were within the range of 0.696 and 0.962, which is greater than the minimum threshold of 0.60, which was an acceptable threshold to conclude internal consistency reliability in an exploratory research study (Hair et al., 2017).

Table 4.14: Cronbach Alpha

Latent Variable	Score
Corporate entrepreneurship	0.929
Achievement	0.693
Locus of control	0.843
Creativity	0.887
Optimism	0.868
Goal orientation	0.890
Metacognitive knowledge	0.768
Metacognitive experience	0.785
Metacognitive choice	0.819
Monitoring	0.759
Social networks	0.870
Strategy	0.736
Entrepreneurial culture	0.836
Entrepreneurial structure	0.881
Entrepreneurial reward practices	0.854
Organisational resources	0.628
Inspirational motivation	0.955
Intellectual stimulation	0.918
Individualised consideration	0.899
Dynamism	0.770

Latent Variable	Score
Hostility	0.718
Growth orientation	0.700

(Source: Own)

The final Cronbach alpha scores across the first order latent variables, as depicted in Table 4.14, were within the range of 0.628 and 0.955, which was greater than the minimum threshold of 0.60; an acceptable threshold to conclude internal consistency reliability, in exploratory research studies (Hair et al., 2017).

4.3.1.2 Convergent Validity

As the first order model constructs were all reflective, convergent validity was a key assessment of the positive association of manifest variables, within a construct, with one another, thus indicating that the collective manifest variables within a latent construct are evaluating the identical concept (Hair et al., 2017; (Sarstedt et al., 2019).

Table 4.15: AVE analysis

Latent Variable	Score
Corporate entrepreneurship	0.703
Achievement	0.5111
Locus of control	0.528
Creativity	0.519
Optimism	0.586
Goal orientation	0.685
Metacognitive knowledge	0.514
Metacognitive experience	0.525
Metacognitive choice	0.568
Monitoring	0.509
Social networks	0.764
Strategy	0.655
Entrepreneurial culture	0.684
Entrepreneurial structure	0.679
Entrepreneurial reward practices	0.771
Organisational resources	0.465

Latent Variable	Score
Inspirational motivation	0.761
Intellectual stimulation	0.859
Individualised consideration	0.832
Dynamism	0.664
Hostility	0.634
Growth orientation	0.718

(Source: Own)

Post the initial AVE analysis across the first order latent variables, the following indicator variables: A04, A06, A08, A10, LC06, C07, MK03, MK06, MK09, MK10, M04, were deleted from the empirical model as their AVE scores were less than 0.50.

The final AVE scores across the first order latent variables, as depicted in Table 4.15, were greater than the minimum threshold of 0.50, which is an acceptable threshold to conclude convergent validity, as indicator variables scores converge to assess the underlying latent construct (Hair et al., 2017; Sarstedt et al., 2019).

4.3.1.3 Discriminant Validity

Discriminant validity is the extent to which indicator variables of different constructs remain distinct and do not correlate highly with other constructs (Sarstedt et al., 2019).

In line with the Fornell and Larcker (1981) principle, discriminant validity is obtained when the “square root of AVE for a construct is greater than its correlation with all other constructs” (Hair et al., 2017, p. 116).

Table 4.16: Fornell-Larcker analysis

Variable	A	CE	C	EC	D	GO	GR	H	IC	I	LOC	MC	ME	MK	M	OP	OR	ER	SN	IS	S	ES
Achievement (A)	**0.715**																					
Corporate Entrepreneurship (CE)	0.256	**0.839**																				
Creativity (C)	0.439	0.205	**0.72**																			
Entrepreneurial Culture (EC)	-0.031	-0.237	-0.076	**0.827**																		
Dynamism (D)	0.204	0.194	0.071	-0.045	**0.815**																	
Goal Orientation (GO)	0.509	0.177	0.465	-0.104	0.027	**0.827**																
Growth (GR)	-0.143	-0.114	-0.006	0.365	0.067	-0.083	**0.848**															
Hostility (H)	0.269	0.254	0.101	0.123	0.491	0.024	0.019	**0.796**														
Individualised Consideration (IC)	0.073	0.395	0.293	-0.117	0.033	-0.011	0.108	0.089	**0.912**													
Inspirational Motivation (I)	0.084	0.382	0.177	-0.121	0.023	-0.086	0.057	0.137	0.784	**0.872**												
Locus of control (LOC)	-0.083	-0.08	-0.208	0.091	0.074	-0.219	-0.035	0.067	-0.102	-0.183	**0.727**											
Metacognitive Choice (MC)	0.502	0.265	0.375	-0.033	0.15	0.558	-0.105	0.167	0.009	0.013	-0.021	**0.754**										
Metacognitive Experience (ME)	0.435	0.111	0.486	-0.117	-0.011	0.579	-0.009	-0.069	0.043	-0.018	-0.19	0.462	**0.724**									
Metacognitive Knowledge (MK)	0.338	0.209	0.371	-0.127	0.148	0.42	-0.118	0.097	0.145	0.131	-0.12	0.544	0.368	**0.717**								
Monitoring (M)	0.464	0.212	0.537	-0.12	0.128	0.583	-0.079	0.002	0.104	0.01	-0.09	0.61	0.602	0.577	**0.713**							
Optimism (OP)	0.482	0.189	0.59	-0.129	0.034	0.429	-0.074	0.033	0.128	0.112	-0.234	0.38	0.47	0.405	0.431	**0.766**						
Organisational Resources (OR)	0.171	0.428	0.224	0.043	0.211	0.075	0.047	0.275	0.292	0.206	-0.118	0.092	0.083	0.069	0.075	0.187	**0.682**					
Entrepreneurial Reward (ER)	0.067	0.393	0.144	0.098	0.149	0.026	0.2	0.203	0.208	0.197	-0.013	0.082	0.023	0.037	0.02	0.123	0.444	**0.878**				
Social Networks (SN)	0.203	-0.082	0.093	-0.035	0.024	0.08	-0.007	-0.142	-0.147	-0.123	-0.114	0.056	0.082	0.106	0.053	0.178	0.021	0.056	**0.874**			
Intellectual Stimulation (IS)	0.019	0.321	0.314	-0.061	0.033	-0.007	0.107	0.106	0.746	0.785	-0.175	0.066	-0.006	0.158	0.118	0.15	0.16	0.193	-0.124	**0.927**		
Strategy (S)	0.21	0.683	0.152	-0.147	0.19	0.11	-0.064	0.212	0.333	0.368	-0.082	0.198	0.046	0.074	0.119	0.123	0.417	0.478	-0.012	0.291	**0.809**	
Entrepreneurial Structure (ES)	-0.041	0.392	0.035	0.218	0.091	-0.074	0.203	0.124	0.208	0.159	0.017	0.032	-0.036	-0.034	-0.004	-0.061	0.208	0.506	-0.05	0.186	0.44	**0.824**

(Source: Own)

The square root of AVE for first order latent constructs is denoted in bold, within Table 4.16. An assessment of the square root of AVE scores across all first order latent constructs, denotes values that are larger than its association with other first order latent constructs, thus discriminant validity is established based on the Fornell and Larcker (1981) principle (Sarstedt et al., 2019).

The HTMT ratio is an estimate of the absolute correlation between two latent variables if it was flawlessly assessed and is “the ratio of the between-trait correlations to the within trait correlations. HTMT is the mean of all correlations of indicators across constructs measuring different constructs relative to the mean of the average correlations of indicators measuring the same construct” (Hair et al., 2017, p. 118).

The HTMT ratio for first order latent constructs is denoted in Table 4.17 and were less than 0.7, which was significantly below the maximum threshold of 0.9, thus discriminant validity was established based on the HTMT ratio criterion (Sarstedt et al., 2019).

Table 4.17: HTMT analysis

Variable	A	CE	C	EC	D	GO	GR	H	IC	I	LOC	MC	ME	MK	M	OP	OR	ER	SN	IS	S	ES
Achievement (A)																						
Corporate Entrepreneurship (CE)	0.302																					
Creativity (C)	0.601	0.196																				
Entrepreneurial Culture (EC)	0.099	0.178	0.112																			
Dynamism (D)	0.274	0.208	0.122	0.109																		
Goal Orientation (GO)	0.671	0.172	0.508	0.152	0.073																	
Growth (GR)	0.247	0.111	0.117	0.615	0.131	0.135																
Hostility (H)	0.349	0.278	0.127	0.202	0.64	0.12	0.129															
Individualised Consideration (IC)	0.122	0.428	0.307	0.11	0.058	0.083	0.121	0.106														
Inspirational Motivation (I)	0.155	0.402	0.188	0.125	0.071	0.099	0.075	0.188	0.839													
Locus of control (LOC)	0.222	0.104	0.28	0.119	0.153	0.317	0.158	0.138	0.139	0.207												
Metacognitive Choice (MC)	0.688	0.265	0.447	0.06	0.175	0.634	0.13	0.23	0.09	0.069	0.127											
Metacognitive Experience (ME)	0.62	0.129	0.614	0.149	0.143	0.689	0.143	0.164	0.099	0.085	0.281	0.592										
Metacognitive Knowledge (MK)	0.485	0.237	0.433	0.175	0.185	0.471	0.192	0.154	0.177	0.172	0.187	0.634	0.537									
Monitoring (M)	0.661	0.245	0.636	0.153	0.178	0.702	0.115	0.175	0.16	0.129	0.172	0.773	0.803	0.764								
Optimism (OP)	0.655	0.18	0.673	0.14	0.126	0.462	0.14	0.155	0.146	0.12	0.327	0.452	0.62	0.519	0.567							

Variable	A	CE	C	EC	D	GO	GR	H	IC	I	LOC	MC	ME	MK	M	OP	OR	ER	SN	IS	S	ES
Organisational Resources (OR)	0.269	0.342	0.245	0.31	0.284	0.124	0.271	0.298	0.321	0.195	0.153	0.12	0.143	0.162	0.171	0.186						
Entrepreneurial Reward (ER)	0.088	0.422	0.156	0.248	0.156	0.086	0.326	0.249	0.221	0.203	0.091	0.133	0.085	0.121	0.102	0.134	0.363					
Social Networks (SN)	0.257	0.073	0.169	0.082	0.102	0.099	0.071	0.132	0.143	0.114	0.144	0.07	0.17	0.152	0.154	0.206	0.112	0.094				
Intellectual Stimulation (IS)	0.165	0.345	0.339	0.082	0.063	0.074	0.126	0.143	0.82	0.836	0.21	0.104	0.089	0.192	0.155	0.157	0.158	0.205	0.132			
Strategy (S)	0.297	0.8	0.186	0.11	0.211	0.122	0.109	0.282	0.412	0.45	0.117	0.219	0.101	0.109	0.161	0.164	0.396	0.586	0.066	0.373		
Entrepreneurial Structure (ES)	0.14	0.418	0.116	0.326	0.164	0.107	0.428	0.165	0.228	0.169	0.158	0.111	0.165	0.168	0.093	0.097	0.247	0.594	0.09	0.203	0.528	

(Source: Own)

Table 4.18: Cross loadings

Variable	A	CE	C	EC	D	GO	GR	H	IC	I	LOC	MC	ME	MK	M	OP	OR	ER	SN	IS	S	ES
A02	**0.72**	0.191	0.308	-0.061	0.244	0.486	-0.021	0.194	0.057	0.062	-0.102	0.318	0.415	0.319	0.389	0.355	0.09	0.045	0.19	0.034	0.142	-0.074
A05	**0.595**	0.081	0.499	-0.059	-0.045	0.378	-0.14	0.158	0.146	0.221	-0.15	0.395	0.342	0.289	0.374	0.473	0.197	0.044	0.06	0.144	0.13	-0.145
A07	**0.713**	0.184	0.21	-0.006	0.056	0.237	-0.163	0.087	0.003	0.018	-0.027	0.292	0.275	0.2	0.256	0.254	0.101	0.057	0.177	-0.111	0.135	-0.01
A09	**0.816**	0.226	0.365	0.008	0.218	0.389	-0.117	0.305	0.06	0.04	-0.023	0.466	0.266	0.214	0.358	0.393	0.151	0.048	0.123	0.052	0.19	0.031
C01	0.316	0.192	**0.826**	0.027	0.093	0.278	-0.012	0.098	0.334	0.251	-0.146	0.285	0.368	0.342	0.421	0.491	0.183	0.157	0.037	0.333	0.106	0.08
C02	0.331	0.14	**0.812**	-0.07	0.037	0.346	0.065	0.086	0.301	0.215	-0.207	0.334	0.321	0.258	0.503	0.441	0.167	0.165	0.002	0.347	0.163	0.067
C03	0.387	0.205	**0.791**	-0.108	0.152	0.345	-0.036	0.105	0.256	0.147	-0.105	0.258	0.315	0.353	0.442	0.438	0.239	0.132	0.138	0.217	0.163	-0.042
C04	0.318	0.117	**0.731**	0.006	0.052	0.403	0.058	0.036	0.283	0.186	-0.211	0.365	0.434	0.32	0.456	0.503	0.187	0.026	-0.013	0.294	0.078	-0.012
C05	0.25	0.074	**0.706**	-0.12	-0.015	0.286	0.062	-0.02	0.25	0.177	-0.174	0.246	0.406	0.298	0.429	0.519	0.096	0.017	0.115	0.291	0.066	-0.04
C06	0.299	0.091	**0.567**	-0.093	-0.034	0.259	-0.116	0.041	0.08	0.08	-0.032	0.185	0.251	0.173	0.19	0.33	0.111	0.03	0.141	0.143	0.088	-0.071
C08	0.282	0.027	**0.645**	-0.084	-0.038	0.266	-0.066	0.02	0.083	0.001	-0.083	0.297	0.263	0.151	0.277	0.428	-0.038	-0.046	0.13	0.12	0.012	-0.132
C09	0.302	0.173	**0.599**	-0.068	0.025	0.425	0.041	0.085	0.09	-0.014	-0.199	0.255	0.428	0.17	0.305	0.354	0.182	0.104	-0.008	0.083	0.151	0.11
C10	0.318	0.122	**0.757**	-0.05	0.002	0.36	-0.088	0.088	0.08	-0.002	-0.151	0.244	0.344	0.229	0.367	0.397	0.084	0.135	0.169	0.161	0.023	0.072
CE1	0.273	**0.721**	0.148	-0.106	0.149	0.215	-0.103	0.125	0.27	0.288	-0.137	0.167	0.087	0.208	0.212	0.166	0.22	0.207	-0.023	0.243	0.419	0.22
CE2	0.256	**0.774**	0.155	-0.11	0.223	0.106	-0.048	0.272	0.259	0.266	-0.064	0.226	0.003	0.152	0.129	0.169	0.344	0.354	-0.057	0.214	0.475	0.253
CE3	0.247	**0.896**	0.141	-0.174	0.221	0.109	-0.039	0.262	0.382	0.391	-0.095	0.248	0.062	0.211	0.17	0.19	0.398	0.332	-0.049	0.324	0.569	0.299

Variable	A	CE	C	EC	D	GO	GR	H	IC	I	LOC	MC	ME	MK	M	OP	OR	ER	SN	IS	S	ES
CE4	0.197	**0.84**	0.167	-0.208	0.207	0.172	-0.136	0.265	0.298	0.227	0.022	0.226	0.102	0.171	0.188	0.098	0.417	0.371	-0.109	0.227	0.646	0.41
CE5	0.224	**0.904**	0.2	-0.237	0.136	0.127	-0.141	0.229	0.358	0.317	-0.06	0.28	0.102	0.2	0.202	0.228	0.367	0.378	-0.085	0.263	0.66	0.392
CE6	0.151	**0.865**	0.166	-0.24	0.12	0.127	-0.125	0.162	0.33	0.354	-0.1	0.161	0.108	0.129	0.156	0.103	0.385	0.305	-0.042	0.281	0.584	0.344
CE7	0.186	**0.855**	0.218	-0.277	0.096	0.197	-0.071	0.165	0.406	0.4	-0.069	0.232	0.171	0.166	0.192	0.163	0.349	0.335	-0.095	0.33	0.602	0.339
D01	0.154	0.147	0.023	-0.02	**0.843**	0.007	0.03	0.377	-0.018	-0.032	0.123	0.144	-0.035	0.149	0.135	0.054	0.202	0.129	0.004	0.008	0.194	0.122
D02	0.196	0.209	0.079	-0.077	**0.934**	0.036	0.074	0.484	0.07	0.07	0.027	0.125	0.007	0.12	0.095	-0.005	0.166	0.146	0.016	0.048	0.178	0.087
D03	0.168	0.044	0.11	0.082	**0.64**	0.021	0.072	0.317	-0.015	-0.041	0.045	0.103	-0.005	0.099	0.105	0.114	0.195	0.056	0.096	0.004	0.002	-0.1
EC01	0.046	-0.003	-0.051	**0.67**	0.085	-0.164	0.305	0.209	-0.043	-0.09	0.104	0.012	-0.074	-0.101	-0.049	-0.133	0.223	0.222	-0.009	-0.067	0.011	0.258
EC02	0.01	-0.103	-0.053	**0.809**	-0.02	-0.038	0.378	0.116	-0.07	-0.046	0.004	0.03	-0.077	-0.07	-0.098	-0.035	0.096	0.254	0.02	0.031	-0.02	0.302
EC03	-0.044	-0.267	-0.077	**0.973**	-0.051	-0.118	0.323	0.112	-0.123	-0.138	0.115	-0.055	-0.121	-0.136	-0.116	-0.151	0.016	0.027	-0.052	-0.09	-0.183	0.163
ER01	0.069	0.37	0.164	0.07	0.096	0.013	0.204	0.143	0.198	0.18	-0.028	0.021	0.041	0.021	0.019	0.131	0.375	**0.901**	0.092	0.168	0.381	0.405
ER02	0.017	0.235	0.028	0.16	0.09	-0.035	0.142	0.204	0.089	0.086	0.036	0.043	-0.01	0.01	-0.06	0.057	0.363	**0.798**	0.005	0.078	0.361	0.499
ER03	0.076	0.397	0.153	0.06	0.192	0.067	0.173	0.202	0.229	0.222	-0.024	0.139	0.021	0.057	0.061	0.121	0.43	**0.93**	0.038	0.229	0.502	0.462
GO01	0.435	0.064	0.388	-0.094	-0.039	**0.818**	-0.077	-0.034	-0.062	-0.079	-0.319	0.357	0.483	0.225	0.4	0.349	0.024	-0.023	0.08	-0.033	0.083	-0.048
GO02	0.338	0.162	0.428	-0.151	0.011	**0.864**	0.004	-0.005	0.05	-0.022	-0.269	0.385	0.459	0.317	0.426	0.361	0.134	0.041	0.058	0.037	0.058	-0.07
GO03	0.463	0.109	0.368	-0.083	0.108	**0.787**	-0.056	0.083	-0.006	-0.015	-0.19	0.458	0.522	0.359	0.432	0.341	0.067	0.085	0.071	-0.015	0.059	-0.037
GO04	0.458	0.208	0.387	-0.045	0.032	**0.87**	-0.131	0.038	-0.007	-0.111	-0.084	0.581	0.487	0.403	0.565	0.382	0.051	0.027	0.052	-0.013	0.161	-0.044
GO05	0.46	0.095	0.353	-0.071	-0.032	0.795	-0.072	-0.015	-0.081	-0.129	-0.157	0.443	0.488	0.372	0.552	0.334	-0.01	-0.066	0.101	-0.037	0.042	-0.128

Variable	A	CE	C	EC	D	GO	GR	H	IC	I	LOC	MC	ME	MK	M	OP	OR	ER	SN	IS	S	ES
GR01	-0.139	-0.032	-0.068	0.464	0.127	-0.105	**0.687**	0.119	0.058	-0.013	0.127	0.01	-0.072	-0.065	-0.053	-0.11	0.066	0.278	-0.041	0.017	0.056	0.469
GR02	-0.13	-0.124	0.01	0.304	0.044	-0.07	**0.982**	-0.009	0.111	0.07	-0.073	-0.124	0.008	-0.121	-0.078	-0.057	0.037	0.16	0.003	0.12	-0.089	0.115
H01	0.212	0.227	0.132	0.068	0.466	0.028	0.03	**0.895**	0.099	0.102	0.051	0.168	-0.034	0.164	0.068	0.062	0.234	0.191	-0.133	0.099	0.139	0.071
H02	0.279	0.25	0.067	0.146	0.416	0.052	-0.01	**0.923**	0.064	0.125	0.054	0.181	-0.064	0.052	-0.017	0.036	0.266	0.21	-0.141	0.083	0.244	0.175
H03	0.118	0.068	0.009	0.079	0.298	-0.123	0.063	**0.499**	0.045	0.143	0.094	-0.077	-0.125	-0.07	-0.15	-0.115	0.135	-0.01	-0.016	0.096	0.098	-0.03
I01	0.064	0.321	0.172	-0.112	0.017	-0.07	0.029	0.081	0.656	0.878	-0.128	0.035	-0.002	0.122	0.012	0.117	0.058	0.144	-0.049	0.639	0.333	0.143
I02	0.076	0.371	0.201	-0.173	0.037	-0.127	0.033	0.121	0.75	0.904	-0.102	0.017	-0.019	0.126	-0.021	0.132	0.189	0.207	-0.106	0.719	0.364	0.195
I03	0.06	0.351	0.187	-0.099	-0.013	-0.092	0.032	0.113	0.716	0.9	-0.181	-0.015	0.015	0.086	-0.002	0.112	0.219	0.199	-0.139	0.702	0.334	0.158
I04	0.074	0.344	0.078	-0.151	0.038	-0.007	0.011	0.103	0.558	0.797	-0.18	0.034	0.043	0.116	0.005	0.056	0.149	0.172	-0.08	0.602	0.309	0.17
I05	0.128	0.325	0.166	-0.019	0.06	-0.038	0.047	0.173	0.713	0.872	-0.162	0.069	-0.044	0.117	0.018	0.102	0.27	0.181	-0.153	0.697	0.333	0.151
I07	0.102	0.276	0.128	-0.076	-0.005	-0.068	0.099	0.12	0.663	0.88	-0.149	0.011	-0.046	0.102	0.029	0.099	0.16	0.147	-0.081	0.685	0.269	0.073
I08	0.093	0.279	0.136	-0.089	0.058	-0.037	0.15	0.129	0.632	0.845	-0.179	0.015	-0.02	0.129	0.059	0.072	0.177	0.14	-0.077	0.668	0.292	0.091
I10	0.008	0.37	0.154	-0.108	-0.025	-0.138	0.03	0.118	0.761	0.899	-0.2	-0.064	-0.059	0.114	-0.012	0.088	0.203	0.167	-0.158	0.754	0.315	0.108
IC01	0.097	0.347	0.301	-0.038	0.04	0.068	0.066	0.067	**0.886**	0.617	-0.078	0.094	0.144	0.211	0.154	0.161	0.242	0.177	-0.149	0.646	0.291	0.204
IC02	0.061	0.337	0.295	-0.126	0.041	-0.009	0.119	0.062	**0.929**	0.729	-0.122	-0.062	0.025	0.056	0.061	0.134	0.26	0.16	-0.108	0.677	0.289	0.119
IC03	0.045	0.394	0.213	-0.15	0.011	-0.078	0.111	0.109	**0.921**	0.789	-0.082	-0.006	-0.04	0.128	0.071	0.062	0.293	0.227	-0.144	0.714	0.327	0.239
IS01	0.08	0.321	0.298	-0.039	0.092	0.068	0.126	0.12	0.698	**0.719**	-0.156	0.156	0.071	0.212	0.169	0.206	0.134	0.161	-0.034	0.924	0.265	0.188
IS02	-0.003	0.265	0.315	-0.054	0.023	-0.045	0.136	0.105	0.708	**0.719**	-0.2	0.019	-0.018	0.098	0.096	0.131	0.148	0.197	-0.144	0.94	0.243	0.151

Variable	A	CE	C	EC	D	GO	GR	H	IC	I	LOC	MC	ME	MK	M	OP	OR	ER	SN	IS	S	ES
IS03	-0.031	0.302	0.263	-0.077	-0.03	-0.052	0.038	0.069	0.669	**0.743**	-0.134	-0.002	-0.075	0.118	0.059	0.075	0.162	0.182	-0.174	0.917	0.297	0.175
LC01	-0.083	-0.009	-0.169	0.109	0.183	-0.273	0.035	0.144	0.024	-0.045	**0.623**	-0.088	-0.213	-0.075	-0.115	-0.131	-0.001	0.043	-0.155	-0.05	0.008	0.133
LC03	-0.224	-0.035	-0.286	0.045	0.033	-0.267	-0.045	-0.035	-0.089	-0.127	**0.74**	-0.126	-0.268	-0.147	-0.167	-0.326	-0.145	-0.016	-0.072	-0.137	0.016	0.101
LC04	-0.005	-0.092	-0.12	0.105	0.12	-0.135	-0.078	0.048	-0.035	-0.089	**0.78**	-0.001	-0.098	-0.071	-0.032	-0.04	-0.034	-0.06	-0.081	-0.086	-0.091	-0.108
LC05	-0.138	-0.018	-0.257	0.016	0.072	-0.1	-0.035	0.024	-0.174	-0.207	**0.663**	0.009	-0.121	-0.175	-0.061	-0.227	-0.077	0.008	-0.047	-0.234	0.004	-0.033
LC07	-0.075	-0.041	-0.157	0.032	-0.006	-0.227	-0.009	0.004	-0.078	-0.147	**0.77**	-0.042	-0.156	-0.064	-0.047	-0.217	-0.2	-0.067	-0.134	-0.14	-0.089	0.045
LC08	-0.027	-0.062	-0.11	0.064	-0.008	-0.116	0.044	0.128	-0.121	-0.209	**0.771**	0.044	-0.132	-0.084	-0.076	-0.264	-0.085	0.092	-0.073	-0.176	-0.076	0.118
M01	0.376	0.171	0.383	-0.075	0.043	0.497	-0.057	-0.034	0.052	-0.021	-0.048	0.475	0.474	0.335	**0.701**	0.237	0.124	0.056	0.068	0.009	0.142	0.012
M02	0.209	0.13	0.4	-0.166	-0.002	0.33	-0.091	-0.056	0.14	0.076	-0.146	0.245	0.408	0.418	**0.673**	0.306	0.018	-0.057	-0.077	0.116	0.059	-0.073
M03	0.375	0.124	0.464	0.002	0.087	0.455	-0.104	0.062	0.121	0.03	-0.091	0.42	0.565	0.447	**0.715**	0.484	0.111	0.054	-0.023	0.106	0.068	0.028
M05	0.338	0.193	0.406	-0.118	0.214	0.365	-0.013	0.047	0.098	0.068	-0.046	0.49	0.376	0.497	**0.812**	0.298	0.034	0.044	0.082	0.173	0.12	0.046
M06	0.365	0.113	0.259	-0.055	0.072	0.464	-0.041	-0.021	-0.056	-0.157	0.001	0.546	0.359	0.362	**0.655**	0.257	-0.04	-0.061	0.116	-0.006	-0.006	-0.061
MC01	0.379	0.171	0.272	0.018	0.131	0.393	-0.057	0.136	-0.045	-0.014	0.032	**0.71**	0.382	0.435	0.449	0.257	0.098	0.077	0.043	0.03	0.087	0.05
MC02	0.343	0.031	0.252	-0.003	-0.012	0.381	-0.065	0.123	-0.069	0.014	0.03	**0.575**	0.245	0.221	0.392	0.243	-0.032	-0.12	-0.049	0.064	0.023	-0.063
MC03	0.366	0.215	0.249	-0.001	0.113	0.447	-0.056	0.139	0.049	0.002	-0.041	**0.833**	0.298	0.487	0.484	0.247	0.074	0.048	0.045	0.059	0.13	0.045
MC04	0.414	0.206	0.341	-0.074	0.114	0.435	-0.111	0.099	0.027	0.085	-0.105	**0.795**	0.391	0.472	0.51	0.376	0.074	0.025	0.056	0.124	0.158	-0.031
MC05	0.425	0.253	0.321	-0.042	0.132	0.476	-0.101	0.15	0.001	-0.027	0.038	**0.824**	0.401	0.365	0.488	0.319	0.067	0.126	0.045	0.002	0.241	0.049
ME01	0.35	0.059	0.413	-0.138	0.078	0.436	-0.075	-0.045	0.052	0.03	-0.164	0.425	**0.625**	0.451	0.509	0.49	0.017	-0.001	0.163	0.075	-0.057	-0.114

Variable	A	CE	C	EC	D	GO	GR	H	IC	I	LOC	MC	ME	MK	M	OP	OR	ER	SN	IS	S	ES
ME02	0.298	0.116	0.293	-0.065	-0.019	0.489	0.088	-0.022	-0.005	-0.107	-0.144	0.298	**0.78**	0.108	0.422	0.175	0.058	0.07	-0.022	-0.051	0.074	0.081
ME03	0.326	0.087	0.325	-0.046	-0.131	0.36	-0.002	-0.135	0.042	0.03	-0.158	0.299	**0.803**	0.315	0.441	0.294	0.054	0.031	0.084	-0.023	0.055	0.009
ME04	0.292	0.053	0.454	-0.011	0.061	0.382	-0.034	-0.085	0.035	0.007	-0.121	0.378	**0.717**	0.349	0.423	0.487	0.09	-0.046	0.057	0.035	-0.009	-0.1
ME05	0.353	0.057	0.395	-0.208	0.047	0.435	-0.109	0.045	0.067	0.045	-0.098	0.366	**0.683**	0.277	0.443	0.492	0.1	-0.033	0.089	-0.001	0.055	-0.138
MK01	0.343	0.134	0.374	-0.057	0.099	0.388	-0.073	0.126	0.092	0.168	-0.034	0.445	0.273	**0.764**	0.46	0.35	0.123	0.076	0.115	0.181	0.046	-0.041
MK02	0.296	0.192	0.276	-0.115	0.152	0.372	-0.052	0.12	0.089	0.059	-0.089	0.434	0.274	**0.788**	0.408	0.335	0.134	0.112	0.129	0.083	0.124	0.046
MK05	0.102	0.134	0.213	-0.019	0.052	0.115	-0.055	0.03	0.18	0.171	-0.121	0.232	0.138	**0.669**	0.371	0.104	0.004	0.016	0.05	0.167	0.062	0.078
MK07	0.225	0.165	0.216	-0.063	0.137	0.345	-0.101	0.037	0.081	0.014	-0.073	0.484	0.332	**0.695**	0.423	0.286	-0.023	-0.036	0.037	0.061	0.004	-0.055
MK08	0.238	0.087	0.277	-0.26	0.048	0.236	-0.197	0.002	0.093	0.096	-0.136	0.3	0.315	**0.66**	0.436	0.419	-0.038	-0.099	0.023	0.102	-0.011	-0.255
ES01	-0.027	0.311	-0.026	0.265	0.146	-0.019	0.232	0.135	0.204	0.106	0.078	0.078	-0.072	-0.042	0.013	-0.052	0.173	0.389	-0.01	0.143	0.402	**0.838**
ES02	-0.027	0.285	-0.02	0.311	0.108	-0.147	0.261	0.176	0.117	0.093	0.116	0.069	-0.1	-0.059	-0.035	-0.073	0.165	0.436	-0.005	0.126	0.357	**0.85**
ES03	-0.008	0.358	0.121	0.199	0.117	-0.013	0.182	0.178	0.196	0.122	-0.028	0.025	-0.041	-0.056	-0.027	-0.02	0.236	0.421	-0.004	0.179	0.402	**0.889**
ES04	-0.104	0.258	0.016	0.062	-0.053	-0.116	0.104	-0.041	0.159	0.157	-0.095	-0.029	0.029	-0.028	0.008	-0.084	0.116	0.386	-0.065	0.15	0.294	**0.77**
ES05	-0.022	0.373	0.034	0.072	0.04	-0.039	0.07	0.044	0.171	0.173	-0.001	-0.01	0.03	0.033	0.023	-0.038	0.15	0.443	-0.113	0.16	0.344	**0.765**
OP01	0.261	0.035	0.423	-0.058	0.079	0.194	0.07	-0.012	0.143	0.051	-0.106	0.26	0.319	0.316	0.405	**0.57**	0.098	0.089	0.07	0.047	-0.009	-0.085
OP03	0.362	0.215	0.49	-0.085	0.101	0.326	-0.065	0.131	0.109	0.067	-0.183	0.263	0.432	0.312	0.33	**0.839**	0.184	0.116	0.085	0.112	0.065	-0.011
OP04	0.471	0.119	0.45	-0.064	0.024	0.3	-0.138	0.06	0.048	0.07	-0.176	0.288	0.349	0.319	0.304	**0.831**	0.149	0.108	0.217	0.098	0.098	-0.024
OP05	0.378	0.081	0.371	-0.067	0.062	0.237	0.024	-0.026	0.102	0.119	-0.227	0.237	0.228	0.301	0.295	**0.687**	0.142	0.079	0.055	0.128	0.111	0.003

Variable	A	CE	C	EC	D	GO	GR	H	IC	I	LOC	MC	ME	MK	M	OP	OR	ER	SN	IS	S	ES
OP07	0.387	0.178	0.536	-0.181	-0.054	0.43	-0.047	-0.043	0.159	0.138	-0.162	0.372	0.376	0.354	0.38	**0.8**	0.13	0.098	0.193	0.175	0.163	-0.104
OP08	0.37	0.09	0.427	-0.089	-0.034	0.41	-0.087	-0.071	0.026	0.062	-0.253	0.358	0.418	0.313	0.374	**0.827**	0.125	0.064	0.183	0.075	0.079	-0.096
OR01	0.166	0.457	0.215	-0.002	0.207	0.095	-0.01	0.278	0.285	0.211	-0.122	0.1	0.078	0.099	0.083	0.194	**0.977**	0.479	0.019	0.162	0.44	0.218
OR02	0.103	0.055	0.104	0.165	0.155	-0.019	0.097	0.087	0.097	0.046	-0.07	0.04	0.049	-0.058	0.028	0.059	**0.481**	0.06	0.11	0.061	0.092	0.051
OR03	0.075	0.08	0.126	0.17	0.052	-0.049	0.289	0.108	0.162	0.073	-0.009	-0.01	0.054	-0.085	-0.017	0.039	**0.459**	0.048	-0.053	0.049	0.081	0.044
S01	0.159	0.612	0.191	-0.095	0.147	0.127	0.001	0.179	0.312	0.294	-0.07	0.194	0.04	0.054	0.105	0.14	0.362	0.476	-0.016	0.226	**0.84**	0.436
S03	0.18	0.403	0.128	-0.063	0.189	0.047	0.002	0.123	0.273	0.355	-0.148	0.163	0.035	0.116	0.07	0.107	0.231	0.3	0.054	0.334	**0.695**	0.236
S04	0.181	0.609	0.056	-0.185	0.141	0.081	-0.142	0.203	0.233	0.273	-0.012	0.13	0.037	0.03	0.108	0.058	0.395	0.367	-0.047	0.188	**0.88**	0.368
SN03	0.19	-0.099	0.07	-0.049	-0.001	0.075	0.004	-0.162	-0.141	-0.126	-0.125	0.057	0.059	0.093	0.029	0.171	0.007	0.046	**0.984**	-0.119	-0.036	-0.052
SN04	0.203	-0.041	0.113	-0.028	0.063	0.08	-0.032	-0.094	-0.164	-0.118	-0.068	0.049	0.106	0.103	0.081	0.168	0.04	0.054	**0.907**	-0.14	0.043	-0.075
SN05	0.16	-0.012	0.155	0.088	0.078	0.059	0	-0.036	-0.034	-0.024	-0.094	0.022	0.139	0.152	0.116	0.14	0.059	0.112	**0.706**	-0.015	0.009	0.087

Key: CEA: corporate entrepreneurial activity, GR: growth orientation, S: strategy, EC: entrepreneurial culture, ES: entrepreneurial structure, ER: entrepreneurial reward practices, OR: organisational resources, TL: transformational leadership, I: inspirational, IS: intellectual stimulation, IC: individual consideration, EM: entrepreneurial mindset, GO: goal orientation, MK: metacognitive knowledge, ME: metacognitive experience, MC: metacognitive choice, M: monitoring, EP: entrepreneurial persona, A: achievement, LC: locus of control, C: creativity, OP: optimism, SN: social networks, D: dynamism, H: hostility, EE: external environment, E: employee, Org: organisation.

(Source: Own)

The cross-loading analysis for indicator variables is denoted in Table 4.18 and were less than its outer loadings, illustrated in bold in Table 4.18, thus discriminant validity is established based on the cross-loadings assessment (Hair et al., 2017).

In summary, the empirical model depicted in Figure 3.2 was modified due to the manifest variables that were deleted to achieve reliability and validity within the Stage 1 model. Hence, the following manifest variables, highlighted in red in Figure 4.1, were removed from the original hypothesised empirical model: H4, H5, H6, A1, A3, A4, A6, A8, A10, LC2, LC6, C7, OP2, OP6, SN1, SN2, MK3, MK4, MK6, MK9, MK10, ME6, M4, S2, S5, OR4, I6, I9, and IS4. The stage 1 first order model is shown in Figure 4.2.

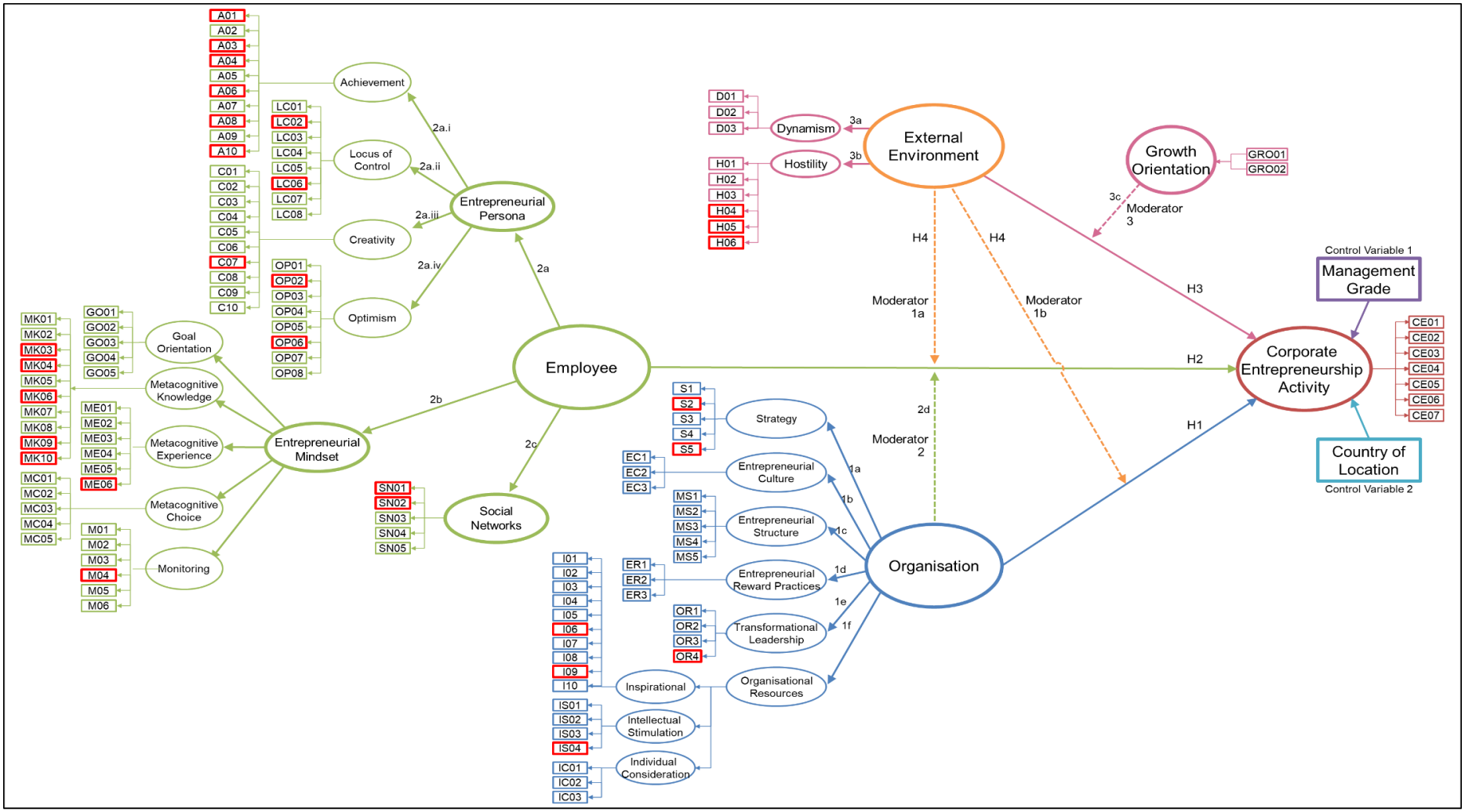


Figure 4.1: Empirical model Stage 1 impact illustration

(Source: Own)

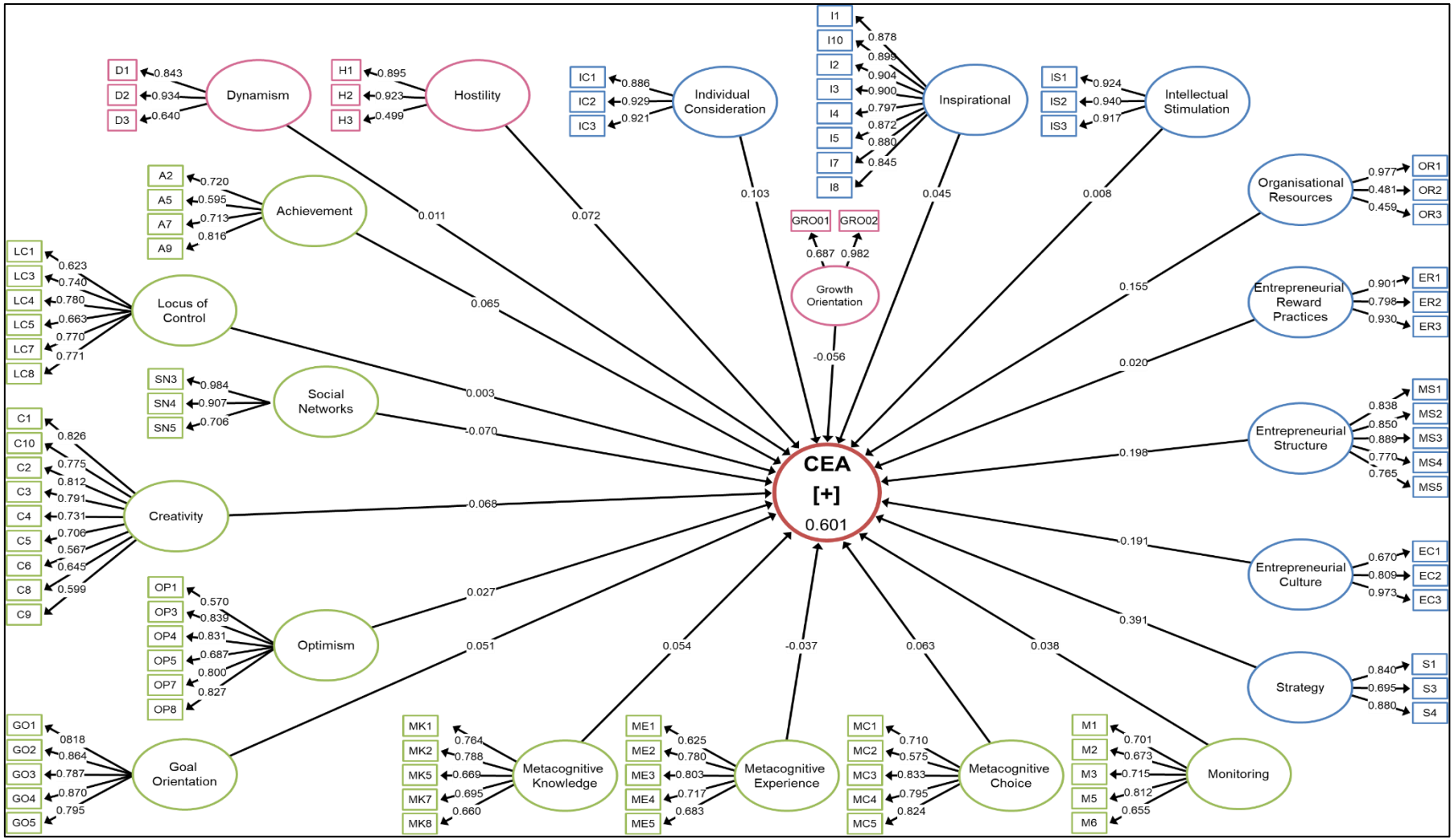


Figure 4.2: Stage 1 first order model

(Source: Own)

4.3.2 Stage 2: Second Order Latent Variable Model, Reliability and Validity Analysis

The first tier of the second stage of the measurement model analysis entailed the reliability and validity analysis of the second order latent construct model.

The assessment of the second order, reflective measurement model entailed the examination of composite and indicator reliability, convergent validity was evaluated using the AVE analysis, and discriminant validity was assessed leveraging the Fornell-Larcker criteria, the constructs cross-loadings, and the HTMT ratio analysis (Hair et al., 2017).

4.3.2.1 Reliability

Composite reliability was examined by evaluating the internal consistency of the second order variables.

Table 4.19: Second order latent variables

Constructs	Persona	Entrepreneurial Mindset	Transformational Leadership	External Environment
Achievement	0.803			
Locus of control	-0.342			
Creativity	0.806			
Optimism	0.818			
Goal orientation		0.772		
Metacognitive knowledge		0.759		
Metacognitive experience		0.696		
Metacognitive choice		0.846		
Monitoring		0.854		
Inspirational motivation			0.933	
Intellectual stimulation			0.905	
Individualised consideration			0.923	
Dynamism				0.821
Hostility				0.900

(Source: Own)

The outer factor loading relevance test for indicator reliability assessed the outer loadings of the first order construct variables, and results are seen in Table 4.19. If the outer-loading was greater than 0.70, it was automatically retained in the stage 2 measurement model. However, if the outer-loading was greater than or equal to 0.40 and less than 0.70, it was retained in the model as deletion caused a downstream impact, resulting in the increasing of other measure(s) above the reliability and validity threshold values (Hair et al., 2017).

Even though the outer loading score for the locus of control construct was less than 0.4, deletion of the construct did not improve the model, but did compromise the content validity of the model; hence, it was retained in the stage 2 model (Hair et al., 2017).

Although multi-collinearity is not an issue in reflective measurement models, the VIF analysis for multi-collinearity at each stage of the HCM model was evaluated to mitigate multi-collinearity issues within the structural model (Sarstedt et al., 2019).

Table 4.20: VIF analysis

Constructs	Score
Achievement	1.369
Locus of control	1.070
Creativity	1.612
Optimism	1.696
Goal orientation	1.882
Metacognitive knowledge	1.646
Metacognitive experience	1.795
Metacognitive choice	1.914
Monitoring	2.352
Inspirational motivation	3.384
Intellectual stimulation	2.945
Individualised consideration	2.934
Dynamism	1.318
Hostility	1.318

(Source: Own)

Based on the final VIF analysis depicted in Table 4.20, all first order construct variables retained in the second order latent variable measurement model had a VIF score of less than five indicating no multi-collinearity issues (Sarstedt et al., 2019).

Table 4.21: Composite reliability

Latent Variable	Score
Entrepreneurial Persona	0.857
Entrepreneurial mindset	0.890
Transformational leadership	0.943
External environment	0.852

(Source: Own)

The final composite reliability scores across the second order latent variables, as depicted in Table 4.21, were within the range of 0.852 and 0.943, which was greater than the minimum threshold of 0.60, which was an acceptable threshold to conclude internal consistency reliability, in exploratory research studies (Hair et al., 2017).

Table 4.22: Cronbach's alpha analysis

Latent Variable	Score
Entrepreneurial Persona	0.753
Entrepreneurial mindset	0.850
Transformational leadership	0.910
External environment	0.659

(Source: Own)

The final Cronbach alpha scores across the second order latent variables, as depicted in Table 4.22, were within the range of 0.659 and 0.910, which was greater than the minimum threshold of 0.60; an acceptable threshold to conclude internal consistency reliability, in exploratory research studies (Hair et al., 2017).

4.3.2.2 Convergent Validity

As the second order model constructs were all reflective, convergent validity was a key assessment of the positive association of the first order construct variable, within a second order construct, with one another, thus indicating that the first order construct variable within a second order latent construct was evaluating the identical concept (Hair et al., 2017; Sarstedt et al., 2019).

Table 4.23: AVE analysis for each measured construct

Latent Variable	Score
Entrepreneurial persona	0.666
Entrepreneurial mindset	0.620
Transformational leadership	0.847
External environment	0.743

(Source: Own)

The final AVE scores across the second order latent variables, as depicted in Table 4.23, were greater than the minimum threshold of 0.50, which was an acceptable threshold to conclude convergent validity, as first order construct variables scores converge to assess the underlying second order latent construct (Hair et al., 2017; Sarstedt et al., 2019).

4.3.2.3 Discriminant Validity

Discriminant validity is the extent to which first order constructs of different second order constructs remain distinct and do not correlate highly with other second order constructs (Sarstedt et al., 2019).

Table 4.24: Cross-loadings of the second order outer model

Construct	Entrepreneurial mindset	External environment	Entrepreneurial persona	Transformational leadership
Achievement (A)	0.567	0.278	**0.803**	0.066
Creativity (C)	0.549	0.102	**0.806**	0.281
Dynamism (D)	0.130	**0.821**	0.122	0.032
Goal orientation (GO)	**0.772**	0.029	0.586	-0.039
Hostility (H)	0.079	**0.900**	0.163	0.120
Individualised consideration (IC)	0.074	0.074	0.201	**0.923**
Inspirational motivation (I)	0.020	0.101	0.170	**0.933**
Locus of control (LOC)	-0.141	0.081	**-0.342**	-0.165
Metacognitive choice (MC)	**0.846**	0.184	0.505	0.030
Metacognitive experience (ME)	**0.696**	-0.051	0.570	0.008
Metacognitive knowledge (MK)	**0.759**	0.138	0.450	0.156
Monitoring (M)	**0.854**	0.065	0.574	0.082
Optimism (OP)	0.521	0.039	**0.818**	0.140
Intellectual stimulation (IS)	0.095	0.086	0.202	**0.905**

Key: CEA: corporate entrepreneurial activity, GR: growth orientation, S: strategy, EC: entrepreneurial culture, ES: entrepreneurial structure, ER: entrepreneurial reward practices, OR: organisational resources, TL: transformational leadership, I: inspirational, IS: intellectual stimulation, IC: individual consideration, EM: entrepreneurial mindset, GO: goal orientation, MK: metacognitive knowledge, ME: metacognitive experience, MC: metacognitive choice, M: monitoring, EP: entrepreneurial persona, A: achievement, LC: locus of control, C: creativity, OP: optimism, SN: social networks, D: dynamism, H: hostility, EE: external environment, E: employee, Org: organisation.

(Source: Own)

The cross-loading analysis for first order variables is denoted in Table 4.24 and were less than its outer loadings, illustrated in bold within Table 4.24, thus discriminant validity was established based on the cross-loadings assessment (Hair et al., 2017).

Table 4.25: Fornell-Larcker stage analysis

Variable	CE	EC	EM	EE	GR	EP	OR	ER	SN	S	ES	TL
Corporate Entrepreneurship (CE)	**0.839**											
Entrepreneurial Culture (EC)	-0.101	**0.84**										
Entrepreneurial mindset (EM)	0.26	-0.057	**0.788**									
External Environment (EE)	0.263	0.07	0.117	**0.862**								
Growth (GR)	-0.115	0.38	-0.109	0.046	**0.848**							
Entrepreneurial Persona (EP)	0.269	-0.029	0.671	0.187	-0.098	**0.816**						
Organisational Resources (OR)	0.428	0.101	0.099	0.286	0.046	0.236	**0.682**					
Entrepreneurial Reward (ER)	0.393	0.256	0.052	0.208	0.2	0.132	0.444	**0.878**				
Social Networks (SN)	-0.082	0.019	0.092	-0.081	-0.007	0.197	0.021	0.056	**0.874**			
Strategy (S)	0.683	-0.019	0.151	0.234	-0.064	0.204	0.417	0.478	-0.012	**0.809**		
Entrepreneurial Structure (ES)	0.392	0.304	-0.021	0.127	0.203	-0.028	0.208	0.506	-0.05	0.44	**0.824**	
Transformational leadership (TL)	0.401	-0.036	0.067	0.094	0.098	0.19	0.242	0.217	-0.143	0.361	0.201	**0.92**

(Source: Own)

The Stage 2 Fornell-Larcker analysis, illustrated in Table 4.25, is synthesised in Table 4.26 to delineate only the second order latent constructs of the stage 2 model.

Table 4.26: Fornell-Larcker second order summary analysis

Construct	Entrepreneurial mindset	External environment	Entrepreneurial Persona	Transformational leadership
Entrepreneurial mindset	**0.788**			
External environment	0.117	**0.862**		
Entrepreneurial persona	0.671	0.187	**0.816**	
Transformational leadership	0.067	0.094	0.190	**0.920**

(Source: Own)

The square root of AVE for second order latent constructs is denoted in bold, within Table 4.26. An assessment of the square root of AVE scores across all second order latent constructs, denoted values that were larger than its association with other second order latent constructs, thus discriminant validity was established based on the Fornell and Larcker (1981) principle (Sarstedt et al., 2019).

Table 4.27: HTMT ratio stage 2 analysis

Variable	CE	EC	EM	EE	GR	EP	OR	ER	SN	S	ES	TL
Corporate Entrepreneurship (CE)	1											
Entrepreneurial Culture (EC)	0.098	1										
Entrepreneurial mindset (EM)	0.278	0.124	1									
External Environment (EE)	0.332	0.195	0.161	1								
Growth (GR)	0.111	0.633	0.132	0.146	1							
Entrepreneurial Persona (EP)	0.32	0.098	0.851	0.239	0.165	1						
Organisational Resources (OR)	0.342	0.362	0.132	0.352	0.271	0.282	1					
Entrepreneurial Reward (ER)	0.422	0.346	0.069	0.271	0.326	0.157	0.363	1				
Social Networks (SN)	0.073	0.076	0.134	0.124	0.071	0.258	0.112	0.094	1			
Strategy (S)	0.8	0.036	0.176	0.336	0.109	0.27	0.396	0.586	0.066	1		
Entrepreneurial Structure (ES)	0.418	0.381	0.081	0.191	0.428	0.081	0.247	0.594	0.09	0.528	1	
Transformational leadership (TL)	0.432	0.083	0.096	0.114	0.101	0.24	0.242	0.23	0.134	0.453	0.222	1

(Source: Own)

The Stage 2 HTMT Ratio analysis illustrated in Table 4.27 is synthesised in Table 4.28 to delineate only the second order latent constructs of the stage 2 model.

Table 4.28: HTMT ratio second order summary analysis

Construct	Entrepreneurial mindset	External environment	Entrepreneurial Persona	Transformational leadership
Entrepreneurial mindset	1			
External environment	0.161	1		
Entrepreneurial persona	0.851	0.239	1	
Transformational leadership	0.096	0.114	0.240	1

(Source: Own)

The HTMT ratio for second order latent constructs is denoted in Table 4.28 and were less than 0.851, which was below the maximum threshold of 0.9, thus

discriminant validity was established based on the HTMT ratio criterion (Sarstedt et al., 2019).

In summary, the reliability and validity analysis of the stage 2, second order measurement model further affected the empirical model emanating from the stage 1 analysis. The latent construct of locus of control was dropped from the higher order construct persona, as the factor loading was significantly below the minimum threshold, as illustrated in Figure 4.3. The stage 2, second order model is shown in Figure 4.4.

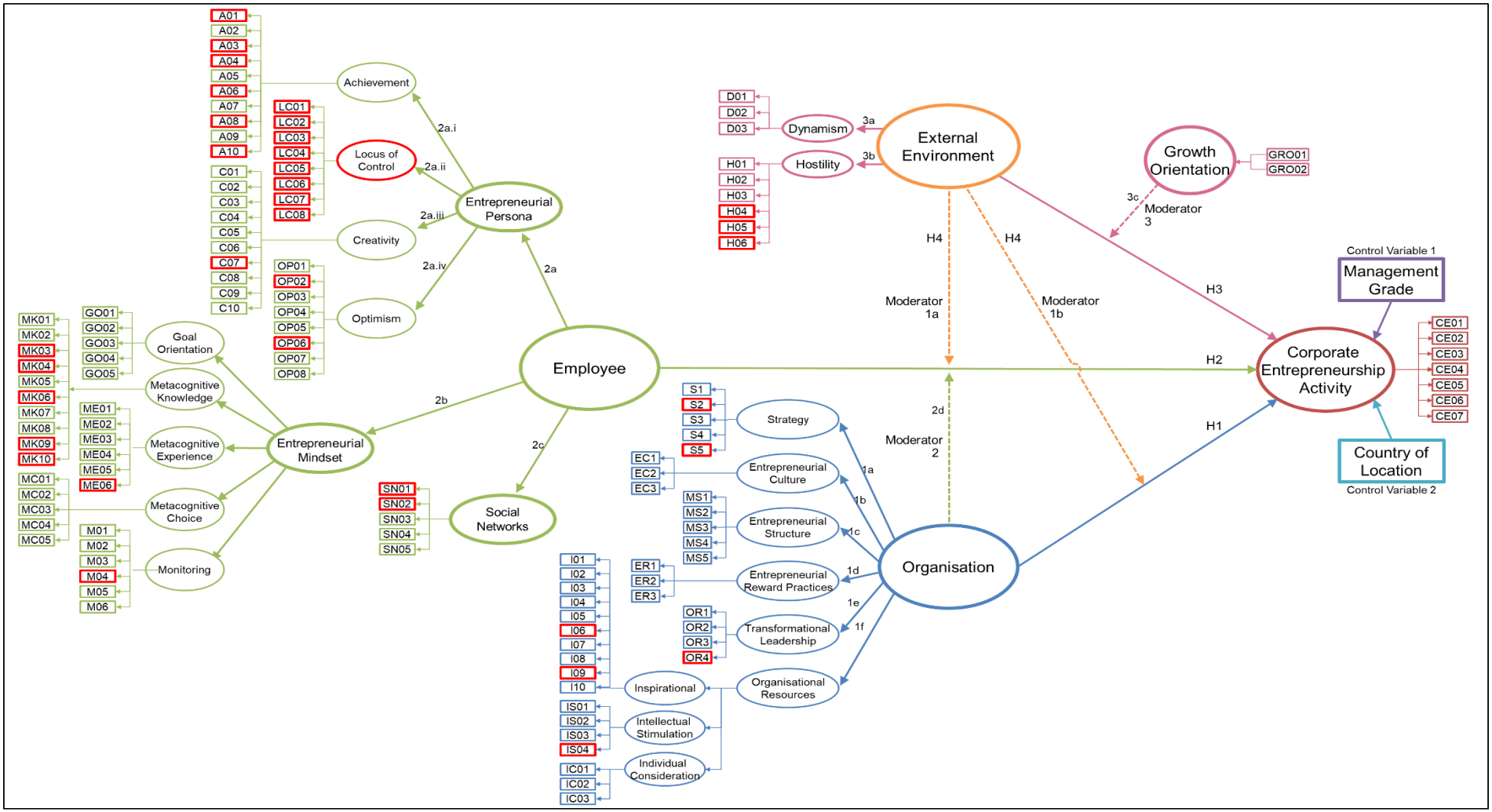


Figure 4.3: Empirical model Stage 2 impact illustration

(Source: Own)

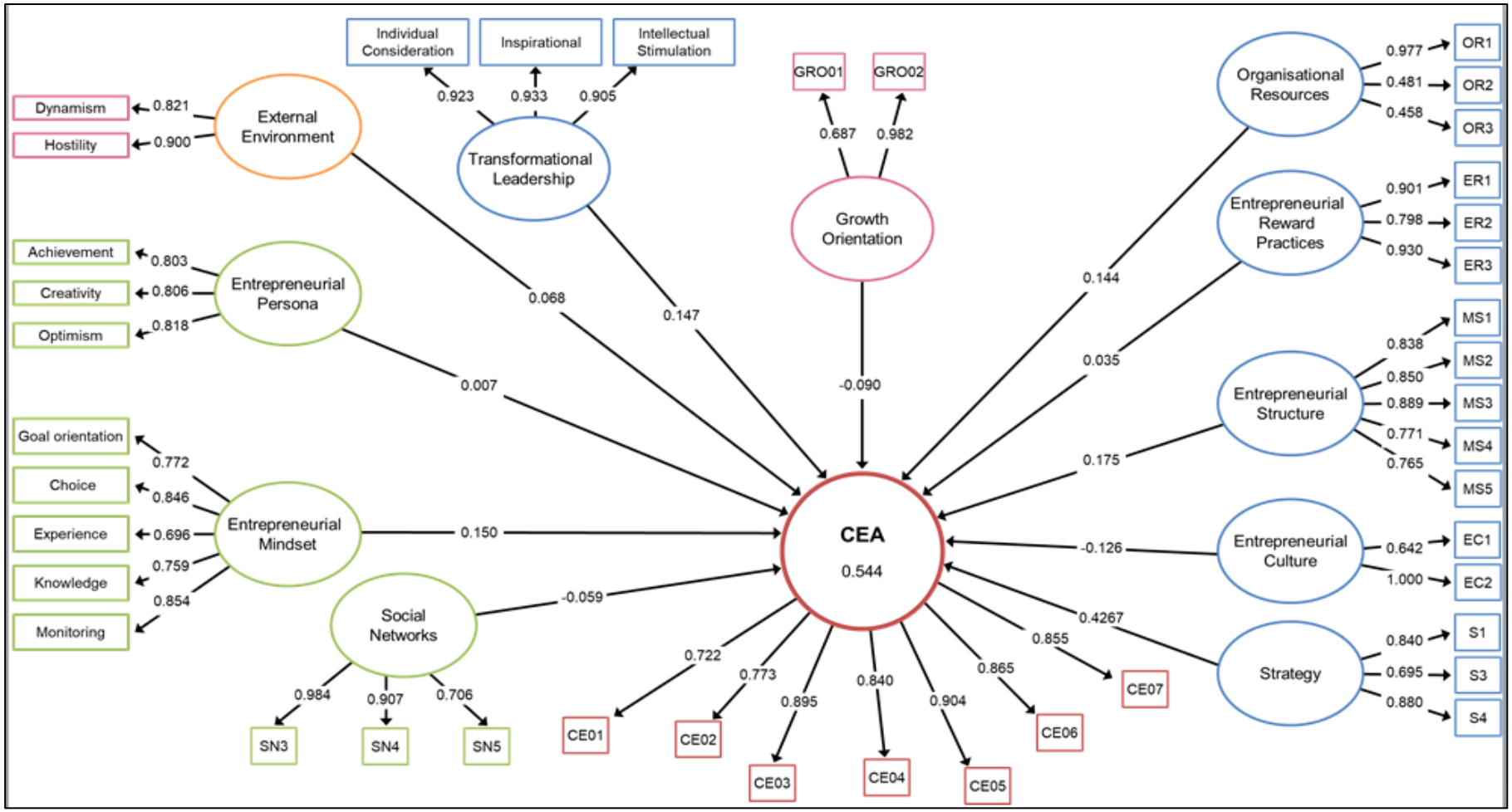


Figure 4.4: Stage 2 second order model

(Source: Own)

4.3.3 Stage 3: Third Order Latent Variable Model, Reliability and Validity Analysis

The second tier of the second stage of the measurement model analysis entailed the reliability and validity analysis of the third order latent construct model.

The assessment of the third order, reflective measurement model entailed the examination of composite and indicator reliability, convergent validity was evaluated using the average variance extracted (AVE) analysis, and discriminant validity was assessed leveraging the Fornell-Larcker criteria, the constructs cross-loadings, and the HTMT ratio analysis (Hair et al., 2017).

4.3.3.1 Reliability

Composite reliability was examined by evaluating the internal consistency of the third order variables.

Table 4.29: Third order latent variables

Construct	Employee	Organisation
Entrepreneurial mindset	0.911	
Entrepreneurial persona	0.917	
Organisational resources		0.656
Entrepreneurial reward		0.735
Strategy		0.841
Entrepreneurial structure		0.653
Transformational leadership		0.563

(Source: Own)

The outer factor loading relevance test for indicator reliability assessed the outer loadings of the second order construct variables. If the outer-loading was greater than 0.70, it was automatically retained in the stage 3 measurement model; however, if the outer-loading was greater than or equal to 0.40 and less than 0.70, it was retained in the model as deletion caused a downstream impact, resulting in the increasing of other measure(s) above the reliability and validity threshold values. If the outer loadings were less than 0.40, the second order construct

variable was automatically deleted from the stage 3, measurement model (Hair et al., 2017).

Based on the initial factor loading analysis across the third order latent variables, the constructs of social networks (SN), with a factor loading of -0.009 and entrepreneurial culture (EC), with a factor loading of 0.084 were deleted from the Stage 3, third order empirical model as its outer loading scores were significantly less than minimum threshold of 0.40. The remaining results are seen in Table 4.29.

Although multi-collinearity is not an issue in reflective measurement models, the VIF analysis for multi-collinearity at each stage of the HCM model was evaluated to mitigate multi-collinearity issues within the structural model (Sarstedt et al., 2019).

Table 4.30: VIF analysis

Constructs	Score
Entrepreneurial mindset	1.817
Entrepreneurial persona	1.817
Organisational Resources	1.362
Entrepreneurial reward	1.677
Strategy	1.607
Entrepreneurial structure	1.459
Transformational leadership	1.166

(Source: Own)

Based on the final VIF analysis depicted in Table 4.30, all construct variables retained in the third order latent variable measurement model had a VIF score of less than five, indicating no multi-collinearity issues (Sarstedt et al., 2019).

Table 4.31: Composite reliability

Latent Variable	Score
Employee	0.910
Organisation	0.822

(Source: Own)

The final composite reliability scores across the third order latent variables, as depicted in Table 4.31, were within the range of 0.822 and 0.910, which was significantly greater than the minimum threshold of 0.60, which was an acceptable threshold to conclude internal consistency reliability, in exploratory research studies (Hair et al., 2017).

Table 4.32: Cronbach's alpha analysis

Latent Variable	Score
Employee	0.803
Organisation	0.730

(Source: Own)

The final Cronbach alpha scores across the third order latent variables, as depicted in Table 4.32, were within the range of 0.730 and 0.803, which was significantly greater than the minimum threshold of 0.60; indicating a high degree of internal consistency and "reliability based on the inter-correlations of the observed indicator variables" (Hair et al., 2017, p: 111).

4.3.3.2 Convergent Validity

As the third order model constructs were all reflective, convergent validity was a key assessment of the positive association of the second order construct variables, within the third order construct, with one another, thus indicating that the second order construct variable within a third order latent construct was evaluating the identical concept (Hair et al., 2017; Sarstedt et al., 2019).

Table 4.33: AVE analysis for each measured construct

Latent Variable	Score
Employee	0.835
Organisation	0.484

(Source: Own)

The final AVE scores across the third order latent variables, as depicted in Table 4.33, indicated that the employee construct is greater than the minimum threshold of 0.50, whereas the organisation construct was 0.484, which is approaching 0.50, thus it did not cause any additional issues with the measurement model and was thus retained in the measurement model. Based on these factors, convergent validity was established (Hair et al., 2017; Sarstedt et al., 2019).

4.3.3.3 Discriminant Validity

Discriminant validity is the extent to which second order constructs of different third order constructs remain distinct and did not correlate highly with other third order constructs (Sarstedt et al., 2019).

Table 4.34: Cross-loadings of the third order outer model

Construct	Employee	Organisation
Entrepreneurial mindset	**0.911**	0.114
Entrepreneurial persona	**0.917**	0.220
Organisational resources	0.185	**0.656**
Entrepreneurial reward	0.102	**0.735**
Strategy	0.195	**0.841**
Entrepreneurial structure	-0.027	**0.653**
Transformational leadership	0.142	**0.563**

(Source: Own)

The cross-loading analysis for the constructs is denoted in Table 4.34 and was less than its outer loadings, illustrated in bold in Table 4.34, thus discriminant validity was established based on the cross-loadings assessment (Hair et al., 2017).

Table 4.35: Fornell-Larcker analysis

Latent Construct	Employee	Organisation
Employee	**0.914**	
Organisation	0.184	**0.696**

(Source: Own)

The square root of AVE for third order latent constructs is denoted in bold in Table 4.35. An assessment of the square root of AVE scores across all third order latent constructs, denoted values larger than their association with other third order latent constructs, thus discriminant validity was established based on the Fornell and Larcker (1981) principle (Sarstedt et al., 2019).

Table 4.36: HTMT ratio analysis

Construct	Corporate entrepreneurship	Employee	External environment	Growth	Organisation
Corporate entrepreneurship	1				
Employee	0.338	1			
External environment	0.332	0.230	1		
Growth	0.111	0.160	0.146	1	
Organisation	0.795	0.243	0.387	0.322	1

(Source: Own)

The HTMT ratios for the final stage latent constructs is denoted in Table 4.36 and were less than 0.795, which was below the maximum threshold of 0.9, thus discriminant validity was established based on the HTMT ratio criterion (Sarstedt et al., 2019).

In summary, the reliability analysis of the stage 2, third order measurement model further influenced the empirical model emanating from the previous stage analysis. The latent construct of social networks was dropped from the higher order employee construct, as the factor loading was significantly below the minimum threshold. In addition, entrepreneurial culture was dropped from the higher order

organisation construct, as the factor loading was significantly below the minimum threshold, as illustrated in Figure 4.5.

Due to the HCM PLS-SEM statistical analysis archetype, the reliability and validity of the research instrument was systematically analysed at each order of construct, thus ensuring the reliability and validity of the measurement model in totality. Due to the rigorous analysis, certain indicator variables and constructs were removed from the final measurement model. As such, the initial hypothesised empirical model conceptualised in Figure 3.2 is not equal to the final measurement model of the empirical model in Figure 4.6 (Sarstedt et al., 2019).

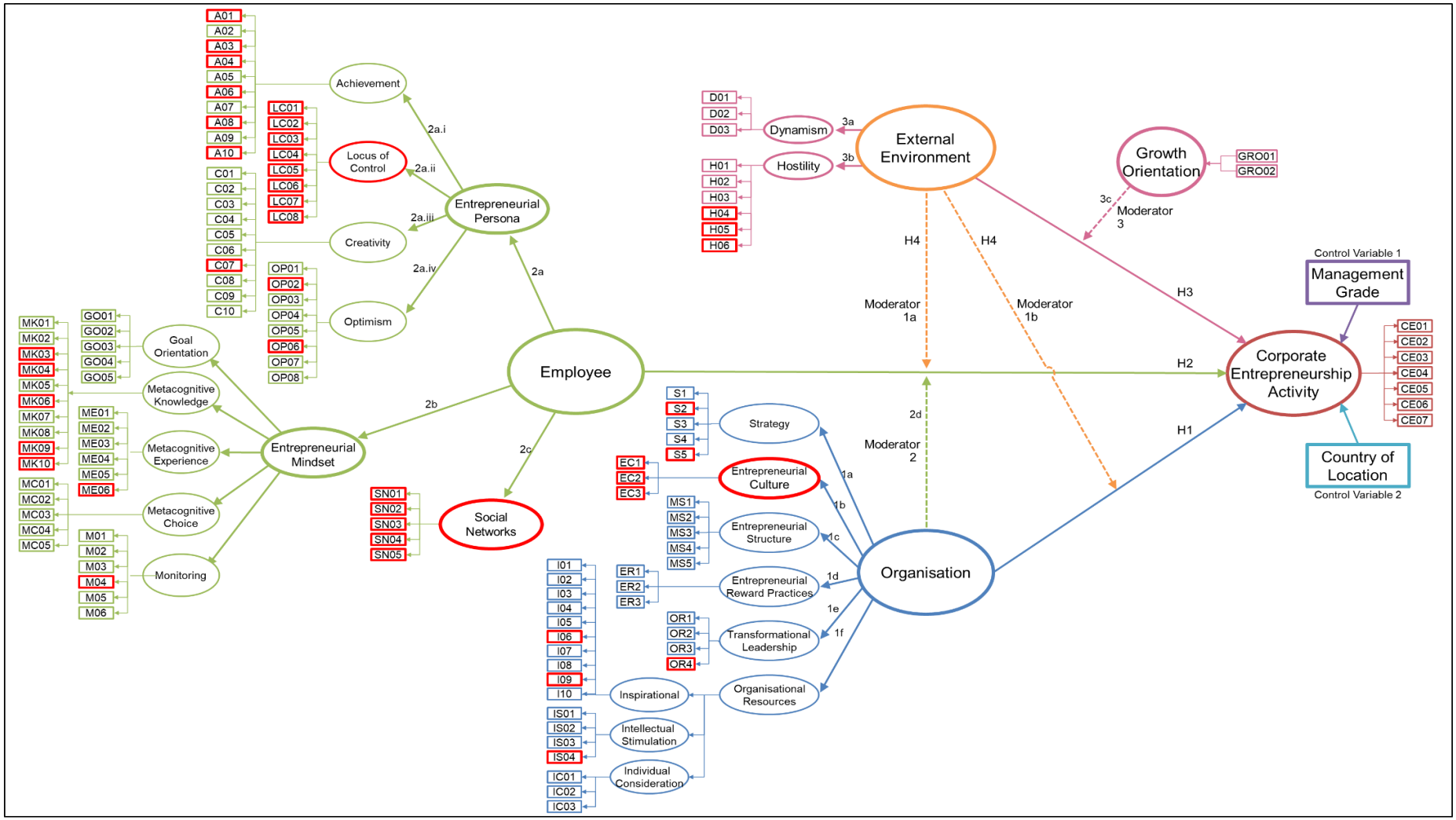


Figure 4.5: Empirical model Stage 3 impact illustration

(Source: Own)

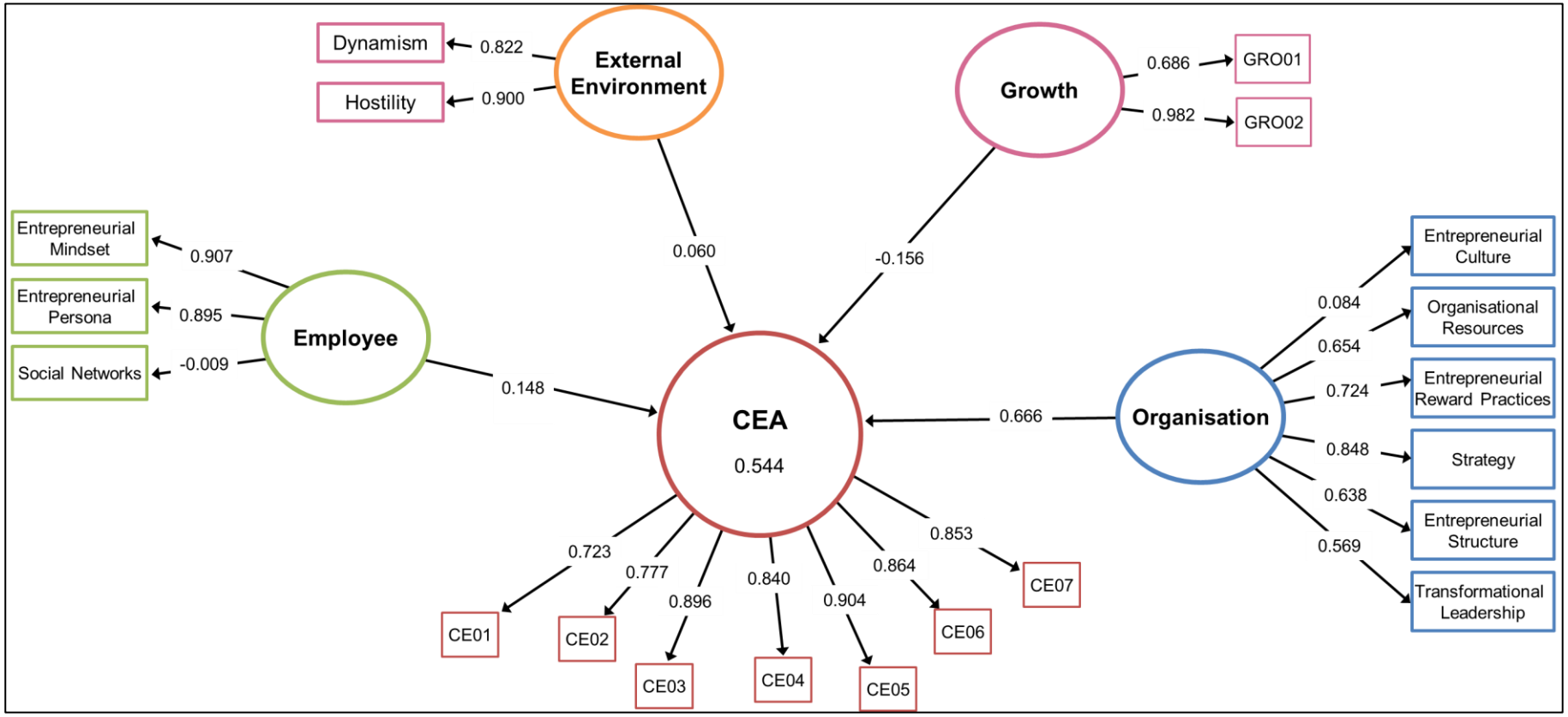


Figure 4.6: Stage 2 third order model

(Source: Own)

4.4 Structural Model Assessment

Post the impact of the final measurement model that was validated as exhibiting both reliability and validity, on the structural model, the final structural model is exhibited in Figure 4.7.

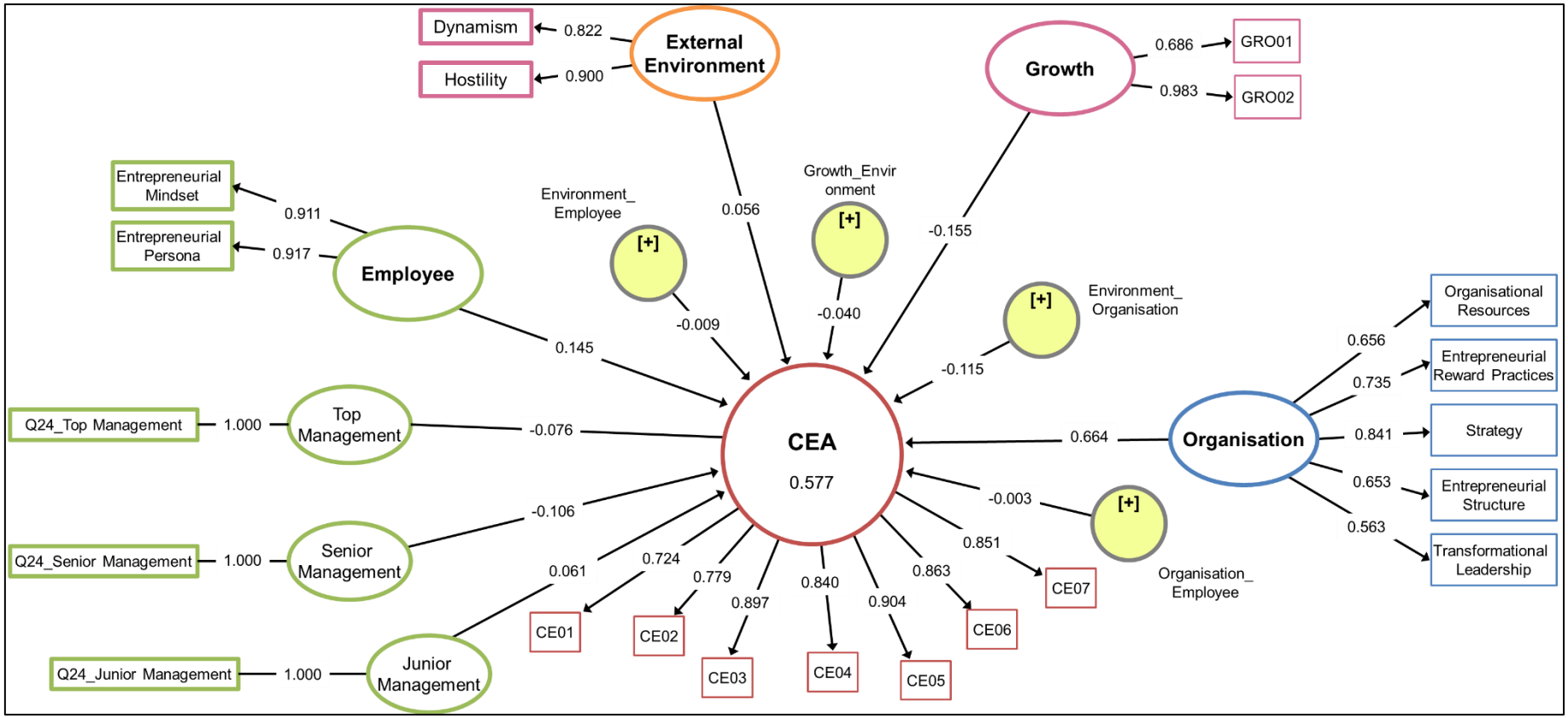


Figure 4.7: Final Structural Model

(Source: Own)

4.4.1 Common Method Bias

Key survey design principles were adhered to resulting in a mitigation of common method bias within the empirical data. Two statistical tests confirmed that the data set does not exhibit common method bias, first, convergent validity was established and second, no first order correlations (Table 4.6) were greater than 0.70, which was significantly below the threshold of 0.90 (Bagozzi et al., 1991).

4.4.2 Model Fit Analysis

Table 4.37: SRMR fit analysis

Fit Parameters	Original Sample	Sample Mean	95%	99%
Saturated model	0.074	0.050	0.065	0.079
Estimated model	0.074	0.051	0.066	0.079

(Source: Own)

The standardised root mean square residual (SRMR) assessment was utilised to determine the model fit and was deemed as an “absolute measure of fit that is defined as the root mean square discrepancy between the observed correlations and the model-implied correlations” (Hair et al., 2017, p. 193). Analysing the model fit data in Table 4.37 and applying the lens of PLS-SEM, the model exhibited a good fit, as both the saturated and estimated models were less than 0.08.

4.4.3 Multi-Collinearity Model Assessment

To evaluate collinearity within the structural model, every group of predictor latent constructs for each component part of the structural model was analysed (Hair et al., 2017).

Table 4.38: Collinearity analysis of inner structural model

Path relationship	VIF
Employee to corporate entrepreneurship	1.132
Environment to corporate entrepreneurship	1.211
Organisation to corporate entrepreneurship	1.783
Growth to corporate entrepreneurship	1.063
Management to corporate entrepreneurship	1.783
Senior management to corporate entrepreneurship	2.124
Top management to corporate entrepreneurship	1.502

(Source: Own)

Based on the VIF analysis depicted in Table 4.38, all predictor variables, contained within the inner structural model had a VIF score of less than five, indicating no multi-collinearity issues (Sarstedt et al., 2019).

Table 4.39: Collinearity analysis of the inner first order model

Path relationship	VIF
Achievement to corporate entrepreneurship	2.131
Locus of control to corporate entrepreneurship	1.238
Creativity to corporate entrepreneurship	2.221
Optimism to corporate entrepreneurship	1.932
Dynamism to corporate entrepreneurship	1.476
Hostility to corporate entrepreneurship	1.687

(Source: Own)

Based on the VIF analysis depicted in Table 4.39, all predictor variables contained within the inner first order model had a VIF score of less than five, indicating no multi-collinearity issues (Sarstedt et al., 2019).

Table 4.40: Collinearity analysis of the inner second order model

Path relationship	VIF
Entrepreneurial persona to corporate entrepreneurship	2.114
Entrepreneurial mindset to corporate entrepreneurship	1.846
Social networks to corporate entrepreneurship	1.201

Path relationship	VIF
Transformational leadership to corporate entrepreneurship	1.285
Strategy to corporate entrepreneurship	1.976
Entrepreneurial culture to corporate entrepreneurship	1.423
Entrepreneurial structure to corporate entrepreneurship	1.682
Entrepreneurial reward practices to corporate entrepreneurship	1.801
Organisational resources to corporate entrepreneurship	1.569

(Source: Own)

Based on the VIF analysis depicted in Table 4.40, all predictor variables contained within the inner second order model had a VIF score of less than five, indicating no multi-collinearity issues (Sarstedt et al., 2019).

Thus, based on each predictor subcomponent part, no collinearity issues were diagnosed within the model.

4.4.4 Path Coefficients Significance and Relevance

The relationships within each sub-component part of the structural model are reflected in Tables 4.41 to Table 4.43, and represented the hypothesised relationships among the exogenous constructs and endogenous construct.

Table 4.41: Path coefficients and significance levels of outer structural model

Path Relationship	Path Coefficient	2.5%	97.5%	P-values	t-value
Employee to corporate entrepreneurship	0.145	0.026	0.254	0.012	2.514**
Environment to corporate entrepreneurship	0.056	-0.046	0.174	0.312	1.012
Organisation to corporate entrepreneurship	0.664	0.560	0.776	0.000	12.013***
Growth to corporate entrepreneurship	-0.155	-0.140	0.078	0.020	2.326**
Management to corporate entrepreneurship	0.061	-0.077	0.199	0.384	0.871
Senior management to corporate entrepreneurship	-0.106	-0.257	0.056	0.180	1.341
Top management to corporate entrepreneurship	-0.076	-0.198	0.063	0.251	1.149

Key: *p<0.10, **p<0.05, ***p<0.01

(Source: Own)

The path coefficients, which signify the hypothesised relationships within the structural model, were significant for the relationship between employee and corporate entrepreneurship activity, organisation and corporate entrepreneurship activity, and growth orientation and corporate entrepreneurship activity.

The size of the path coefficient for the significant hypothesised relationship between organisation and corporate entrepreneurship activity was an important positive linear relationship within the ecosystem model, and its association was large (0.664) (Lee, 2015).

The size of the path coefficient for the significant hypothesised relationship between employee and corporate entrepreneurship activity was a positive linear relationship that warranted attention within the ecosystem model even though its association was small (0.145) (Lee, 2015).

The size of the path coefficient for the significant hypothesised relationship between growth and corporate entrepreneurship activity was a negative linear relationship that warranted attention within the ecosystem model even though its association was small (-0.155) (Lee, 2015).

Table 4.42: Path coefficients and significance levels of first order, inner structural model

Path Relationship	Path Coefficient	2.5%	97.5%	P-values	t-value
Achievement to corporate entrepreneurship	0.065	-0.089	0.202	0.376	0.885
Locus of control to corporate entrepreneurship	0.003	-0.136	0.161	0.963	0.046
Creativity to corporate entrepreneurship	-0.068	-0.190	0.088	0.334	0.967
Optimism to corporate entrepreneurship	0.027	-0.126	0.187	0.727	0.349
Dynamism to corporate entrepreneurship	-0.011	-0.137	0.131	0.872	0.162
Hostility to corporate entrepreneurship	0.072	-0.055	0.193	0.247	1.157

Key: *p<0.10, **p<0.05, ***p<0.01

(Source: Own)

There were no significant path coefficients within the first order structural model.

Table 4.43: Path coefficients and significance levels of second order, inner structural model

Path Relationship	Path Coefficient	2.5%	97.5%	P-values	t-value
Entrepreneurial persona to corporate entrepreneurship	0.007	-0.143	0.143	0.919	0.101
Entrepreneurial mindset to corporate entrepreneurship	0.149	0.035	0.297	0.025	2.249**
Social networks to corporate entrepreneurship	-0.059	-0.163	0.074	0.321	0.993
Transformational leadership to corporate entrepreneurship	0.147	0.035	0.259	0.011	2.541**
Strategy to corporate entrepreneurship	0.427	0.302	0.556	0.000	6.606***
Entrepreneurial culture to corporate entrepreneurship	-0.126	-0.252	0.108	0.170	1.373
Entrepreneurial structure to corporate entrepreneurship	0.175	0.044	0.307	0.009	2.623***
Entrepreneurial reward practices to corporate entrepreneurship	0.035	-0.102	0.159	0.591	0.537
Organisational resources to corporate entrepreneurship	0.144	0.034	0.260	0.013	2.492**

Key: *p<0.10, **p<0.05, ***p<0.01

(Source: Own)

The path coefficients, which signify the hypothesised relationships within the second order structural model was significant for the relationship between entrepreneurial mindset and corporate entrepreneurship, transformational leadership and corporate entrepreneurship activity, strategy and corporate entrepreneurship activity, entrepreneurial structure, and corporate entrepreneurship activity, as well as organisational resources and corporate entrepreneurship.

The size of the path coefficient for the significant hypothesised relationship between strategy and corporate entrepreneurship activity was an important positive linear relationship within the ecosystem model, and its association was moderate to large (0.427) (Lee, 2015).

The size of the path coefficient for the significant hypothesised relationship between organisational resources and corporate entrepreneurship activity was a positive linear relationship that warranted attention within the ecosystem model even though its association was small (0.144) (Lee, 2015).

The size of the path coefficient for the significant hypothesised relationship between entrepreneurial structure and corporate entrepreneurship activity was a positive linear relationship that warranted attention within the ecosystem model even though its association was small (0.175) (Lee, 2015).

The size of the path coefficient for the significant hypothesised relationship between entrepreneurial mindset and corporate entrepreneurship activity was a positive linear relationship that warranted attention within the ecosystem model even though its association was small (0.147) (Lee, 2015).

The size of the path coefficient for the significant hypothesised relationship between transformational leadership and corporate entrepreneurship activity was a positive linear relationship that warranted attention within the ecosystem model even though its association was small (0.149) (Lee, 2015).

4.4.5 Predictive Power of the Structural Model

The empirical model's predictive power was determined by its R^2 value and was symbolic of the combined effects of all the exogenous latent constructs on the endogenous latent construct, corporate entrepreneurial activity.

Table 4.44: R^2 Assessment

Endogenous variable	R2	$R2_{adj}$
Corporate entrepreneurship	0.577	0.548

(Source: Own)

The endogenous latent construct, corporate entrepreneurial activity, had a R^2 value of 0.577. The R^2_{adj} is 0.548, which compensated for adding several non-significant exogenous constructs within the model; in other words, external environment, entrepreneurial persona, achievement, locus of control, creativity, optimism, dynamism, hostility, entrepreneurial reward practices, entrepreneurial culture, and social networks. The difference between the R2 value and $R2_{adj}$ value was not pronounced enough to warrant dropping any additional predictor variables (Hair et al., 2017).

The collective effect of the spectrum of predictor variables included within the corporate entrepreneurship ecosystem model resulted in a 57.7 per cent explanation of the variation in corporate entrepreneurial activity within incumbents in the South African banking industry. This was deemed to have moderate to substantial predictive power of corporate entrepreneurial activity within a corporate ecosystem model (Hair et al., 2017).

4.4.6 Exogenous Variable Effect Size Contribution

The impact of each exogenous construct on the predictive power of corporate entrepreneurial activity is synthesised below in Table 4.45 to Table 4.47.

Table 4.45: f^2 assessment of the outer structural model

Path relationship	f^2
Employee to corporate entrepreneurship	0.044**
Environment to corporate entrepreneurship	0.006
Organisation to corporate entrepreneurship	0.818***
Growth to corporate entrepreneurship	0.053**
Management to corporate entrepreneurship	0.005
Senior management to corporate entrepreneurship	0.012
Top management to corporate entrepreneurship	0.009

Key: *p<0.10, **p<0.05, ***p<0.01

(Source: Own)

The latent exogenous constructs of employee and growth has a small effect on corporate entrepreneurial activity whereas the organisation layer within a corporate ecosystem has a significantly large effect on corporate entrepreneurial activity (Hair et al., 2017).

Table 4.46: f^2 assessment of the first order, inner structural model

Path relationship	f2
Achievement to corporate entrepreneurship	0.005
Locus of control to corporate entrepreneurship	0.000
Creativity to corporate entrepreneurship	0.005
Optimism to corporate entrepreneurship	0.001
Dynamism to corporate entrepreneurship	0.000
Hostility to corporate entrepreneurship	0.008

Key: *p<0.10, **p<0.05, ***p<0.01

(Source: Own)

There are no significant hypothesised relationships within the first order, inner structural model hence none of these first level predictor variables meaningfully contribute to the predictive power of corporate entrepreneurial activity within the model (Hair et al., 2017).

Table 4.47: f^2 assessment of the second order, inner structural model

Path relationship	f^2
Entrepreneurial persona to corporate entrepreneurship	0.000
Entrepreneurial mindset to corporate entrepreneurship	0.029**
Social networks to corporate entrepreneurship	0.008
Transformational leadership to corporate entrepreneurship	0.040**
Strategy to corporate entrepreneurship	0.243***
Entrepreneurial culture to corporate entrepreneurship	0.029
Entrepreneurial structure to corporate entrepreneurship	0.045**
Entrepreneurial reward practices to corporate entrepreneurship	0.002
Organisational resources to corporate entrepreneurship	0.034***

Key: *p<0.10, **p<0.05, ***p<0.01

(Source: Own)

The latent exogenous constructs of entrepreneurial mindset, transformational leadership, entrepreneurial structure, and organisational resources, all had a small effect on corporate entrepreneurial activity whereas an organisation's strategy orientation had a medium to large effect on corporate entrepreneurial activity (Hair et al., 2017).

4.4.7 Predictive Relevance Assessment

The research model's predictive relevance is depicted in Table 4.48.

Table 4.48: Q^2 assessment

Endogenous Variable	Q^2
Corporate entrepreneurship	0.384

(Source: Own)

The Q^2 score for the model was greater than 0, hence the explanatory predictor constructs displayed predictive relevance for corporate entrepreneurial activity (Hair et al., 2017).

4.5 Moderation Assessment

The theoretical model, illustrated in Figure 2.8, has four moderator hypothesised relationships that were examined to determine whether the respective moderators, in other words external environment, organisation, and growth, enhanced the strength or alternatively the direction of the linear relationship between predictor variables, in other words employee, organisation, or external environment, and corporate entrepreneurial activity. The moderator was included in the path model by the inclusion of an interaction term variable: moderator multiplied by exogenous variable. In keeping with the overall estimation approach, the disjoint two-stage methodology for the path model; the two-stage moderation approach was adopted, which enhanced the ability of the path model to establish moderation significance (Hair et al., 2017).

4.5.1 Moderator 1a

- The external environment moderates the relationship between the employee and corporate entrepreneurial activity.

Since the empirical model was a reflective-reflective path model, the first step in the moderation analysis was to ensure that the moderator variable of environment satisfied the measurement criteria of reliability and convergent and discriminant validity. This criterion was met for the moderator variable, environment as evidenced in section 4.3, the measurement model analysis (Hair et al., 2017).

The second step of the moderation analysis was to determine whether the interaction term of environment multiplied by employee exhibited a significant relationship, thus establishing a moderation influence. The third and final step entailed the analysis of the strength of the relationship post moderation being established (Hair et al., 2017).

Table 4.49: Moderation effect: 1a

Interaction Term	Path Co-Efficient	T-Value	f^2
Environment X Employee	-0.009	0.151	0.000

Key: *p<0.10, **p<0.05, ***p<0.01

(Source: Own)

The effect size of the interaction term was 0.000, which was evident of no effect on corporate entrepreneurial activity, as such the interaction term of environment multiplied by employee was non-significant, hence there was no evidence that the proposed moderator variable, environment, had any effect on the relationship between the employee and corporate entrepreneurial activity.

4.5.2 Moderator 1b

- The external environment moderates the relationship between the organisation and corporate entrepreneurial activity.

Since the empirical model was a reflective-reflective path model, the first step in the moderation analysis was to ensure that the moderator variable of environment satisfied the measurement criteria of reliability and convergent and discriminant validity. This criterion was met for the moderator variable, environment as evidenced in section 4.3; the measurement model analysis (Hair et al., 2017).

The second step of the moderation analysis was to determine whether the interaction term of environment multiplied by organisation exhibited a significant relationship, thus establishing a moderation influence. The third and final step entailed the analysis of the strength of the relationship post moderation being established (Hair et al., 2017).

Table 4.50: Moderation effect: 1b

Interaction Term	Path Co-Efficient	T-Value	f^2
Environment X Organisation	-0.115	1.758	0.030*

Key: *p<0.10, **p<0.05, ***p<0.01

(Source: Own)

Even though the effect size of the interaction term was greater than 0.025, which was evident of a large effect on corporate entrepreneurial activity, the interaction term of environment multiplied by organisation was non-significant at a five per cent significance level. Hence there was no evidence that the proposed moderator variable, environment, had any effect on the relationship between the organisation and corporate entrepreneurial activity.

4.5.3 Moderator 2

- The external organisation moderates the relationship between the employee and corporate entrepreneurial activity.

Since the empirical model was a reflective-reflective path model, the first step in the moderation analysis was to ensure that the moderator variable of organisation satisfied the measurement criteria of reliability and convergent and discriminant validity. This criterion was met for the moderator variable, growth, as evidenced in section 4.3, the measurement model analysis (Hair et al., 2017).

The second step of the moderation analysis was to determine whether the interaction term of organisation multiplied by employee exhibited a significant relationship, thus establishing a moderation influence. The third and final step, entailed the analysis of the strength of the relationship post moderation being established (Hair et al., 2017).

Table 4.51: Moderation effect: 2

Interaction Term	Path Co-Efficient	T-Value	f^2
Organisation X Employee	-0.003	0.050	0.000

Key: *p<0.10, **p<0.05, ***p<0.01

(Source: Own)

The effect size of the interaction term was 0.000, which was evident of no effect on corporate entrepreneurial activity, as such the interaction term of organisation multiplied by employee was non-significant, hence there was no evidence that the proposed moderator variable, organisation, had any effect on the relationship between the employee and corporate entrepreneurial activity.

4.5.4 Moderator 3

- The entrepreneurial momentum of a company moderates the relationship between the external environment and corporate entrepreneurial activity.

Since the empirical model was a reflective-reflective path model, the first step in the moderation analysis was to ensure that the moderator variable of growth satisfied the measurement criteria of reliability and convergent and discriminate validity. This criterion was met for the moderator variable, growth, as evidenced in section 4.3; the measurement model analysis (Hair et al., 2017).

The second step of the moderation analysis was to determine whether the interaction term of growth multiplied by environment exhibited a significant relationship, thus establishing a moderation influence. The third and final step entailed the analysis of the strength of the relationship post moderation being established (Hair et al., 2017).

Table 4.52: Moderation effect: 3

Interaction Term	Path Co-Efficient	T-Value	f^2
Growth X Environment	-0.040	0.730	0.004

Key: *p<0.10, **p<0.05, ***p<0.01

(Source: Own)

The effect size of the interaction term was less than 0.005, which was evident of a very weak effect on corporate entrepreneurial activity, as such the interaction term of growth multiplied by environment was non-significant. Hence, there was no evidence that the proposed moderator variable, growth had any effect on the relationship between the environment and corporate entrepreneurial activity.

4.6 Summary of Results

In respect of the research model, corporate entrepreneurial performance was operationalised as a latent variable, which was influenced by three levels of antecedents, external environment second order construct and two third order constructs: employee latent variable and organisation latent variable. The empirical model was statistically modelled using the PLS-SEM toolkit and consisted of 22 first order latent constructs, four second order latent constructs, and two third order latent constructs.

The PLS-SEM model was a Type 1 model of a reflective-reflective higher order latent variable model (Crocetta et al., 2020), where a disjointed two-stage approach was adopted to estimate the measurement and structural parameters of the high order constructs within the model leveraging SMART PLS 3, as a software package. As such, the measurement (outer) model was analysed in three tiers, namely first order construct, stage 1, second order construct, stage 2 and third order construct, stage 2. A battery of diagnostic tests pertaining to reliability and validity were systematically tested for each construct within each tier of the model for inclusion in the confirmed structural model that informs the finalised path model (Hair et al., 2017).

A model fit analysis was conducted to ascertain the fit of the structural model for theory examination of corporate entrepreneurial performance. The finalised path model was assessed based on the relevance of the path coefficient and significance of the hypothesised path relationships by employing the bootstrapping technique, which together served as a proxy of the empirical model's predication capabilities (Hair et al. 2017).

4.6.1 Hypothesis Analysis

Table 4.53 summarises the results of the analysis of the hypothesised linear relationships within the structural model.

Table 4.53: Summary of Hypotheses

Hypotheses	Hypotheses statement	Path relationship	Path coefficient	t-value	Supported
Hypothesis 1 (H1)	The existence of a pro-organisational corporate ecosystem characterised by an incumbent's organisational level antecedent variables of leadership traits, corporate strategy, design structure, reward practices, and organisational resources positively influences the degree of corporate entrepreneurial performance within South African banking incumbents due to an ecosystem effect	Organisation to corporate entrepreneurship	0.664	12.013**	Yes
H1a	A distinctive strategy archetype of corporate entrepreneurial strategy in African companies positively influences the degree of corporate entrepreneurial performance within the South African banking industry.	Strategy to corporate entrepreneurship	0.427	6.606***	Yes
H1b	A distinctive culture archetype of entrepreneurial culture in African companies positively influences the degree of corporate entrepreneurial performance within the South African banking industry.	Entrepreneurial culture to corporate entrepreneurship	-0.126	1.373	No
H1c	An organic operating structure of an African incumbent organisation positively influences the degree of corporate entrepreneurial performance within the South African banking industry.	Entrepreneurial structure to corporate entrepreneurship	0.175	2.623**	Yes
H1d	Entrepreneurial reward practices in African companies positively influences the degree of corporate entrepreneurial performance within the South African banking industry.	Entrepreneurial reward practices to corporate entrepreneurship	0.035	0.537	No
H1e	A distinctive leadership archetype of transformational leadership in African companies positively influences the degree of corporate entrepreneurial performance within the South African banking industry.	Transformational leadership to corporate entrepreneurship	0.147	2.541**	Yes

Hypotheses	Hypotheses statement	Path relationship	Path coefficient	t-value	Supported
H1f	Organisational resources in African companies positively influences the degree of corporate entrepreneurial performance within the South African banking industry.	Organisational resources to corporate entrepreneurship	0.144	2.492**	Yes
Hypothesis 2 (H2)	An employee's antecedent qualities of a pro-entrepreneurial cognitive, personality and motivational disposition and network ties within a corporate ecosystem are positively related to corporate entrepreneurial performance within the South African banking industry.	Employee to corporate entrepreneurship	0.145	2.514**	Yes
H2a	An employee's persona moulded by their need for achievement, locus of control, creativity, and optimism and positively influences the degree of corporate entrepreneurial performance within the South African banking industry.	Entrepreneurial persona to corporate entrepreneurship	0.007	0.101	No
H2ai	An employee's motivational persona characteristics in terms of need for achievement positively influences the degree of corporate entrepreneurial persona within the South African banking industry.	Achievement to corporate entrepreneurship	0.065	0.885	No
H2aii	An employee's motivational persona characteristics in terms of locus of control positively influences the degree of corporate entrepreneurial performance within the South African banking industry.	Locus of control to corporate entrepreneurship	0.003	0.046	No
H2aiii	An employee's personality characteristic in terms of creativity positively influences the degree of corporate entrepreneurial performance within the South African banking industry.	Creativity to corporate entrepreneurship	-0.068	0.967	No
H2aiv	An employee's personality characteristic in terms of optimism positively influences the degree of corporate entrepreneurial performance within the South African banking industry.	Optimism to corporate entrepreneurship	0.027	0.349	No

Hypotheses	Hypotheses statement	Path relationship	Path coefficient	t-value	Supported
H2b	An employee's cognitive ability and subsequent entrepreneurial mind-set in relation to goal orientation, metacognitive knowledge, metacognitive experience, metacognitive choice, and monitoring positively influences the degree of corporate entrepreneurial performance within the South African banking industry.	Entrepreneurial mindset to corporate entrepreneurship	0.149	2.249**	Yes
H2c	The depth and diversity of an employee's social network positively influences the degree of corporate entrepreneurial performance within the South African banking industry.	Social network to corporate entrepreneurship	-0.059	0.993	No
Hypothesis 3 (H3)	The macro environment shaped by the intensity of dynamism and hostility within banking environments influences corporate entrepreneurial performance in South Africa.	Environment to corporate entrepreneurship	0.056	1.012	No
H3a	Dynamic business environments negatively influence corporate entrepreneurial performance within South African banking firms.	Dynamism to corporate entrepreneurship	-0.011	0.162	No
H3b	Hostile business environments negatively influence corporate entrepreneurial performance within South African banking firms.	Hostility to corporate entrepreneurship	0.072	1.157	No

Key: *p<0.10, **p<0.05, ***p<0.01

(Source: Own)

4.6.2 Moderation Analysis

Table 4.54 summarises the results of the analysis of the hypothesised moderation relationships within the structural model.

Table 4.54: Summary of Moderation Analysis

Hypotheses	Hypotheses statement	Interaction term	Strength (Path coefficient)	Significance (t-value)	Supported
H4a: Moderator 1a	Environmental dynamics and hostility moderate the degree of influence that employee-level antecedents have on levels of corporate entrepreneurial performance within the South African banking industry due to the precipitating effect of environmental forces acting upon an intrapreneurial ecosystem.	Environment X Employee	-0.009	0.151	No moderation effect
H4b: Moderator 1b	Environmental dynamics and hostility moderate the degree of influence that organisational-level antecedents have on levels of corporate entrepreneurial performance within the South African banking industry due to the precipitating effect of environmental forces acting upon an intrapreneurial ecosystem.	Environment X Organisation	-0.115	1.758	No moderation effect
H2d: Moderator 2	A conducive entrepreneurial internal environment encourages employees who have a pro-entrepreneurial disposition to behave entrepreneurially, thereby positively driving firm-level corporate entrepreneurial performance.	Organisation X Employee	-0.003	0.050	No moderation effect
H3c: Moderator 3	The macro environment shaped by the intensity of dynamism and hostility will have a more positive influence on corporate entrepreneurial performance within South African banking firms when organisations have an underlying entrepreneurial momentum.	Growth X Environment	-0.040	0.730	No moderation effect

Key: *p<0.10, **p<0.05, ***p<0.01

(Source: Own)

5 DISCUSSION

Global banks have endured the initial ramifications of the coronavirus pandemic albeit delivering diluted headline earnings due to depressed company profitability. However, as the world continues to deal with the aftermath of a continued string of virus mutations, the global economic recovery is predicted to have a long tail and downstream impact on human lives and the pandemic continues to wreak havoc on livelihoods, globally. COVID-19 has been a “tipping point” for the global financial services industry, marking the end of an era and the emergency of a ‘new normal’ in banking and an ‘Achilles heel’ for traditional banking models (McKinsey, 2021b, p. 1).

For years, investors have been leaning towards new generation banking models that serve customers holistically, intuitively, and better through leveraging ‘new age’ technology solutions, thus, shifting investment into Fintech companies and digital banks (McKinsey, 2021b).

Between the investor trend since 2019 and the coronavirus pandemic, the global financial services industry, unlike other industries that trade at three times their book value, has been trading at its book value and profitability levels have been below the cost of shareholder equity (McKinsey, 2021b).

Traditional banks were struggling before the COVID-19 pandemic to transform their business model from a capital intense business into driving revenue diversification through new fee-based services. However, even though banks have weathered 2020 and 2021 with minimal losses, their profitability has been severely affected, which has resulted in the global divergence between top performing banking groups and the laggards. This has been exacerbated by companies, country of domicile, and the risk mitigation strategy of banks to conserve resources during the pandemic vis-à-vis, adopting a balanced approach that entails a pragmatic allocation and trade off of resources, which still enabled incumbents to respond proactively to new customer needs and changes to customers behavioural patterns (McKinsey, 2021b).

5.1 Corporate Entrepreneurship: A Multidimensional Construct

Latent research has explored the multi-dimensional attributes of corporate entrepreneurship; however, the value drivers of corporate entrepreneurial behaviour were targeted, and empirical studies have analysed component parts of the model. There have been limited studies that have explored the holistic multi-dimensional nature of corporate entrepreneurship. Furthermore, of the multitude of targeted corporate entrepreneurship antecedent empirical models that have been conducted over the decades, the augmentation of the various empirical model deductions in order to formulate an integrated model that could inform building a corporate entrepreneurship capability framework has been lacking.

Theoretically, researchers that have conceptualised corporate entrepreneurship as a multi-dimensional construct, have posited influencing variables across three levels of analysis: employee, organisation, and external environment. This research study, applied a configuration approach to synthesise the conceptual findings across four cornerstone corporate entrepreneurial models: Guth and Ginsberg (1990), Covin and Slevin (1991), Kuratko, Hornsby et al. (2004), and Ireland et al. (2009). This enabled the conceptualisation of a theoretical model to create a predictive framework for building a corporate entrepreneurship capability model within incumbent organisations.

While the four corporate entrepreneurship models include influencing variables across the three levels of analysis, this study aimed to enrich extant literature with regard to employee influencing drivers of corporate entrepreneurship behaviour. This was done by deepening the exploration of entrepreneurial cognitions, and leveraging the metacognition construct entrepreneurial mindset formulated by Haynie and Shepherd (2009). This study incorporated an entrepreneurial persona, formulated from four underlying personality and personal motivational characteristics: need for achievement, locus of control, creativity, and optimism. It also included social networks, which in a new venture setup is deemed an important unlocker of entrepreneurial behaviour (Adler & Kwon, 2002).

Although the influence of macro factors have been consistent across the four corporate entrepreneurship models, research studies conducted by Zahra (1991,

1993) provided an alternative perspective of the nature of the causal effect of environmental factors of dynamism and hostility. This study empirically explored the direct causal effect of dynamism and hostility and its moderating attributes within a corporate ecosystem model, and added data points that could plausibly explain the nature of the macro factor relationship within three levels of system analysis.

As such, organisational factors of transformational leadership, culture, strategy, resources and capabilities, structure, and reward were included as organisation, influencing variables of corporate entrepreneurial activity. Equally, employee factors of entrepreneurial persona, entrepreneurial mindset, and social networks were included as individual, influencing variables of corporate entrepreneurial activity. Finally, external environmental factors of dynamism and hostility were included as macro, influencing variables of corporate entrepreneurial activity. Thus, the theoretical model proposed in Figure 2.8, encompassed three levels of system analysis and a comprehensive set of influencing variables on corporate entrepreneurial activity that created a conceptual corporate entrepreneurial ecosystem model.

This research study aimed to test the proposed conceptual model in Figure 2.8 empirically, with the objective of deducing significant direct cause and effect relationships among three levels of system analysis, influencing variables and corporate entrepreneurial activity in order to refine the corporate entrepreneurship ecosystem model and use it as a framework for corporate entrepreneurship capability building. The inter-relationship patterns, namely the moderating effects of the external environment on employees' and organisations entrepreneurial behaviour, the moderating effect of the organisation on employees' entrepreneurial behaviour, and the moderating effect of the growth orientation of a company on the macro influence on corporate entrepreneurial activity, were analysed to narrow down significant moderating variables within the corporate entrepreneurial ecosystem.

This study equally enriched corporate entrepreneurial empirical findings within an emerging market and African context, and validated conceptual findings formulated in developed countries with that of developing countries, thus

leveraging the empirical results of this study to customise a corporate entrepreneurship capability framework for African incumbent businesses.

According to the Global Entrepreneurship Monitor (GEM) global report (Bosma et al., 2021) and the GEM South Africa report (Bowmaker-Falconer & Herrington, 2020), entrepreneurial activity on average in developing countries is lower than developed countries. This stands to reason given that corporate and national innovation ecosystems in developed countries have matured over decades, in respect to policies, investment, infrastructure, access to resources and private-public sector collaboration (Suseno & Standing, 2017), thus enabling higher levels of country level innovation than most developing countries, albeit the outliers as evidenced in the GEM reports.

5.2 Corporate Entrepreneurship in Banking Groups Headquartered in South Africa

This research study sampled incumbent financial services groups headquartered in South Africa but with an African and global presence. However, of the surveyed employees, only a minor representation of employees resided outside of South Africa (one per cent). According to the GEM South Africa report (Bowmaker-Falconer & Herrington, 2020), the entrepreneurial rates on average within South Africa is below the Africa regional rate. It can therefore be deduced that the entrepreneurial behaviour of incumbent banks in South Africa is on average below other African banks or banks domiciled in developed countries. Certain theoretical relationships that underpin causal corporate entrepreneurial behaviours created using the context of developed countries, in which the national entrepreneurial ecosystem may be significantly more mature, might not be evident in South Africa or in a developing world context (Bosma at al., 2021).

Of the 212 sampled banking employees that participated in the research study, fifty-seven percent of participants were female. According to the GEM South Africa report (Bowmaker-Falconer & Herrington, 2020), female entrepreneurial activity stills lags behind that of males in South Africa, with a 1.52 ratio of male to female entrepreneurial activity. Thus, it could be assumed that this trend applies in the

corporate context and the total corporate entrepreneurial output of an incumbent could be increased through a balanced diversity of male to female employees.

5.3 Corporate Entrepreneurship: A Dynamic, Complex Adaptive Ecosystem of Effect

The meta narrative aim of this study was to provide a comprehensive, holistic conceptualisation of corporate entrepreneurship taking into account the whole corporate entrepreneurship ecosystem, across the intrapreneur layer, organisational layer, and environment layer, which is fundamentally different to the sum of atomised parts of which it is constituted (Anderson et al., 2012).

The embedment process model for corporate entrepreneurship is encapsulated as an ecosystem that is a dynamic, complex, adaptive open system. The embedment process model integrated the four underpinning theory frameworks namely domain theory (Guth & Ginsberg, 1990), firm level entrepreneurship theory (Covin & Slevin, 1991), sustaining theory (Kuratko, Hornsby et al., 2004), and strategic integration theory (Ireland et al., 2009). It extended these theory frameworks by incorporating the social network construct into an embedment capability framework that incorporated predictors of corporate entrepreneurial performance into an execution model, thereby addressing the knowledge gap identified by Bloodgood et al. (2015) and Kuratko, Morris et al. (2015).

This study's findings demystified corporate entrepreneurship in an organisational setting and aimed to resolve the ambiguity that had been created in literature by varying theoretical perspectives on the subject due to targeted examination of antecedent relationship within the corporate entrepreneurship domain (Corbett et al., 2013; Moroz & Hindle, 2011). Equally, due to the spectrum of antecedents that latent literature identified as influencing value drivers of corporate entrepreneurial performance, the research findings delineated core corporate entrepreneurship performance value drivers based on effect (Sakhdari, 2016).

Given that the majority of corporate entrepreneurial studies were developed and tested in a western market context, this study extended African management

theory into transformational strategic renewal. This leveraged a corporate entrepreneurial capability that was difficult to replicate, and which drove overall organisational effectiveness during market fluidity and hyper-competition within the banking sector in an emerging economy context (Chelliah & Lekmat, 2011, McKinsey, 2022). In addition, this enabled theory development that considered nuances within African organisations given the fundamentally different market context shaped by the socio-economic climate, political landscape, culture dimensions, education levels, and access to resources (Zoogah et al., 2015).

Due to the inherent complexity embedded in the proposed corporate entrepreneurship ecosystem model, encompassing 22 first order latent variables, four second order latent variables and two third order latent variables, the empirical analysis employed in this study, leveraged a PLS-SEM statistical analysis framework. This framework deconstructed the empirical model illustrated in Figure 3.2 into a measurement and structural empirical framework. The reliability and validity of the measurement framework included a two-stage process leveraging a battery of statistical tools.

The results of the reliability and validity stress testing of the empirical model resulted in the removal of several of the underlying manifest variables from the empirical model; while the latent constructs that underpin the corporate entrepreneurship ecosystem remained intact as hypothesised in Chapter 2 of this report and depicted in the theoretical model in Figure 2.8.

As such, the final empirical model illustrated in Figure 3.2 encapsulated three levels of system analysis based on a set of hypotheses underpinning each level and creates a corporate entrepreneurship ecosystem for incumbents.

5.4 Organisation Level, Direct Cause and Effect System Analysis

To create a corporate entrepreneurial capability successfully, in which the building blocks of the capability can be replicated across incumbent businesses, requires deep diagnostics of the system workings of a corporate entrepreneurship

ecosystem within incumbent companies, to understand empirically the value drivers of corporate entrepreneurial activity. For this study, the focus was on financial services companies.

To validate the value drivers of corporate entrepreneurial activity, three major constructs that represent the three-level system of analysis were formulated namely organisation, individual, and environment. The substructure of each of the major constructs was underpinned by the latent variables, which were corporate entrepreneurship antecedents within each level of analysis.

Organisational influence on corporate entrepreneurial activity has been the bedrock of extant research on corporate entrepreneurship models and has been a critical factor in explaining how companies are able to demonstrate corporate entrepreneurial behaviour over performance cycles. Organisational influence encompasses strategic leadership, strategy, and a pro-entrepreneurial climate, which encompasses organisational structure, resources and capabilities, reward framework, and culture. Each of the substructures of the organisation construct was analysed to determine the direct cause and effect of each of the latent variables in relation to driving corporate entrepreneurial activity.

5.4.1 Hypothesis 1a

Hypothesis 1a entailed the evaluation of the impact of corporate entrepreneurial strategy in driving corporate entrepreneurial activity, an area of research that has demonstrated limited accumulation of progressive knowledge. The criticality of this value driver and its role within the corporate entrepreneurship ecosystem, requires a deepening of empirical knowledge (Ireland et al., 2009; Kreiser et al., 2021).

What is known through extant research is that entrepreneurial strategy is an influencing factor in corporate entrepreneurial activity (Guth & Ginsberg, 1990; Ireland et al., 2009). A distinct type of organisational strategy embodies the mindset and decision-making framework that becomes the north star for companies, reframes business opportunity and risk, and enables incumbents to adjust their strategic appetite and resource allocation to proactively pursue strategic choices and battlegrounds that enable market leadership positions. It

encapsulates the vision and strategic intent of a company, its strategic choices, and risk appetite of the incumbent, which is brought to life through the decisions and actions of the leadership of the business and the enduring behaviours of the employees of the organisation (Crawford & Kreiser, 2015; Kreiser et al., 2021).

The empirical data supported H1a and it was found that a significant relationship existed. Strategy formulation within African companies resulted in the development of an entrepreneurial strategy that positively influenced the degree of corporate entrepreneurial behaviour within the South African banking industry.

The statistical analysis deduced a direct, positive, and moderate to large linear association between entrepreneurial strategy and corporate entrepreneurship. As such, the empirical data validated the theoretical proposition theorised by Guth and Ginsberg (1990) and Ireland et al. (2009), where corporate entrepreneurship performance is enabled through the development and adoption of a coherent corporate entrepreneurial strategy archetype derived from the strategic intent and vision, its strategic choices, and risk appetite.

This holds particularly true in the corporate entrepreneurship domain of strategic renewal, involving the transformation of large incumbent companies, as corporate entrepreneurship implementation, from approval to resource investment and trade-offs did not happen organically but was driven intentionally by the board, CEO, and top management team through the endorsement of a corporate entrepreneurship strategy.

The findings suggested that entrepreneurial strategy was not just any antecedent of corporate entrepreneurship performance, but rather a cornerstone catalyst for corporate entrepreneurship transformational change and corporate entrepreneurship impact consequently modifying current theory. Thus, a positive unit of entrepreneurial strategy upliftment within a corporate ecosystem resulted in 0.43 increase in corporate entrepreneurship activity levels within incumbent banks, thus confirming that entrepreneurial strategy was a pivotal value driver of corporate entrepreneurial activity within a corporate entrepreneurial ecosystem.

5.4.2 Hypothesis 1b

Hypothesis 1b entailed the evaluation of the impact of an entrepreneurial culture in driving corporate entrepreneurial activity, where entrepreneurial culture is a distinctive type of homogenous, positive, organisational culture that is indicative of the soft wiring of the organisational inertia of a company. Entrepreneurial culture had distinctive attributes: focus on people and empowerment, value creation through innovation and an emphasis on proactive future forward practices, accountability and ownership, share of risk and reward, growing and learning through failure, leadership support and endorsement for intrapreneurial behaviour, autonomous structures and practices, and lastly overriding purpose and emotional commitment (Bau & Wagner, 2015; Ireland et al., 2009; Kruszelnicki & Breuer, 2020; Kuratko et al., 2011).

These attributes meshed to form a strong entrepreneurial cultural pattern that displayed a homogenous profile that is created through a dominant logic and shared culture attributes, reinforced by the behaviours and outputs of the constituents of the company, and sharing of the core ethos of a company and its performance (Paunovic & Dima, 2014).

According to Ireland et al. (2009), these organisational traits boost the materialisation of behavioural patterns that strengthen and propagate the quantum and frequency of corporate entrepreneurial behaviour, both at an individual level as well collectively as an organisation.

The empirical data did not support H1b, hence the null hypothesis was accepted, as the results were only statistically significant at $p < 0.10$ and consequently did not align with the theoretical deductions of Ireland et al. (2009) and Paunovic and Dima (2014). As a result, culture that cultivates an entrepreneurial mindset within the boundary conditions of a cross-sectional study in the African banking industry did not influence the degree of corporate entrepreneurial behaviour, as observed over a short-term timeframe.

This extended corporate entrepreneurship culture theory by introducing the complexity of a culture system and the timeframe required to create a strong

cultural pattern that it is able to directly drive organisational performance. The transformation of an incumbent's organisational culture was achieved over a medium- to long-term timeframe, whereas extant literature estimated the timeframe to be a minimum three to five years. The adequate presence of the underlying cultural ingredients must be evident through employee experiences and decision-making within the company over a prolonged period, to inform a corporate entrepreneurial pattern as opposed to once off events or activities that are driven in pockets by isolated leaders. This deduction of the correlation between antecedent corporate entrepreneurship performance and longitudinal performance cycles was congruent with the research finding of Wales, Kraus, Filser, Stockmann and Covin (2021), in which the time periods of embedment are a critical factor in optimal corporate entrepreneurship effectiveness and performance.

Thus, reflecting on the attributes of an entrepreneurial culture, these attributes would need to be consistently reinforced through the strategy, role modelling & decision making of leaders and subsequent hardwiring of the organisation over several continuous performance cycles for the corporate DNA of the organisation to be modified and a common set of shared ideologies and entrepreneurial behavioural practices that permeates all levels of the organisation to be formed. Hence, Culture is by nature an organisational driver that unlocks performance value over the medium to long-term (Harms et al., 2009; Jones, 2014; Kuratko, Hornsby et al., 2004).

There is a plausible reasoning for the finding not correlating with theoretical deductions (Ireland et al., 2009; Kruszelnicki & Breuer, 2020), as this research study is a cross-sectional analysis. In the absence of a longitudinal research study analysation, the de facto culture of the observed incumbents, although may display some attributes of a corporate entrepreneurship culture, it may have not reached a point of maturity, first it may not be positive or exhibit a deep homogenous cultural pattern and second, maybe still change resistant thus potentially having a negative impact to corporate entrepreneurial behaviour.

5.4.3 Hypothesis 1c

Hypothesis 1c entailed the evaluation of the impact of organisational structure in driving corporate entrepreneurial activity. This key organisational design element is essential in the execution of a firm's strategy and constitutes the hard wiring of an organisation's decision-making framework, information flows throughout the organisation, and execution mandates within the company (Kraus et al., 2011; Covin & Slevin, 1991; Ireland et al., 2009; Srivastava & Agrawal, 2010).

According to Srivastava and Agrawal (2010), Kuratko et al. (2011), and Ireland et al. (2009), corporate entrepreneurial behaviour is favourably enabled through an organic organisational archetype, which is the decluttering of organisational layers and hierarchical structures. This emphasis of power, based on expertise, movement of decision-making closer to the customer, and less bureaucratic decision-making, facilitates increased market responsiveness in relation to both, exploration and exploitative corporate actions (Covin & Slevin, 1991; Nayager & Van Vuuren, 2005).

The empirical data supported H1c, and it was found that a significant relationship existed such that an organic operating structure of an incumbent organisation positively influences the degree of corporate entrepreneurial behaviour within the South African banking industry.

The empirical data validated the theoretical proposition from the model of sustaining corporate entrepreneurship created by Kuratko, Hornsby et al. (2004), and the model corporate entrepreneurship created by Guth and Ginsburg (1990); there is a direct positive linear association between an organic operating structure and corporate entrepreneurship. As such, this value driving corporate entrepreneurship performance relationship holds true within the boundary conditions of a developing country, regulated industry, and the large corporate size of the incumbent. A positive unit increase in the implementation of an organic structure within a corporate ecosystem resulted in a weak to moderate (0.18) increase in corporate entrepreneurship activity levels within incumbent banks, making it a meaningful cog in the corporate entrepreneurial ecosystem.

5.4.4 Hypothesis 1d

Hypothesis 1d entailed the evaluation of the impact of reward practices in driving corporate entrepreneurial activity, as a conduit to incentivise employees to behave intrapreneurially and adopt an ownership mindset with regard to the performance and long-term success of the company (Hornsby et al., 2002; Kuratko et al., 2011).

According to Kuratko, Hornsby et al. (2014), reward is a vital organisational building block that empowers employees to take personal responsibility for driving intrapreneurial behaviour within incumbents to achieve company outperformance and has even been posited by latent research as a primary determinant among top-level and middle-level managers.

The empirical data did not support H1d, hence reward practices of African companies that encourage entrepreneurial behaviour do not influence the degree of corporate entrepreneurial behaviour within the South African banking industry.

As such, the empirical data did not correlate with the theoretical deductions made by Ireland et al. (2009), but concurred with the empirical findings of the research study conducted by Srivastava and Agrawal (2016), where reward practices were determined to have an insignificant impact on corporate entrepreneurial performance.

The mixed research findings in relation to a spectrum of studies could be a result of the organisational context of the companies being surveyed. Given that the banking industry companies within this study are defined as large incumbents, and are governed by high set of regulatory standards, inevitably results in organisational collectivism, which according to Morris, Davis and Allen (1994) influences the perception of reward systems. These systems are designed to drive the combined efforts of employees to achieve overall company success, thereby significantly reducing the importance of reward frameworks in driving corporate entrepreneurial performance in organisational contexts that harness collectivism practices.

In relation to the reward framework favouring collectivism, employees will only be willing to take on personal risk if there is clear evidence on the part of the organisation that entrepreneurial behaviour will be recognised and appreciated. In addition, the downstream impact that could arise due to failure, which is part and parcel of corporate entrepreneurship, will not destabilise an individual's employment, compensation, or social standing in a company. Thus, in order for intrapreneurial behaviour to occur, it is essential that the reward framework of an organisation is hardcoded towards a pro-entrepreneurial orientation as this also ensures that the expectation of the organisation is clear, and the hardcoding of the reward incentives are transparent over performance cycles and business areas. If this is not the case and the reward practices are hardcoded towards managers' discretion and soft coded towards promoting entrepreneurial action, perceptions by employees will be driven by their individual experience over several financial cycles, in particular business areas resulting in inconclusive cause and effect patterns (Srivastava & Agrawal, 2016).

This theory extension enriches the corporate entrepreneurial knowledge domain by contextualising corporate entrepreneurial performance in relation to reward practices and the importance of this driver within the corporate entrepreneurial ecosystem relative to the organisational boundary conditions.

Thus, one could argue that reframing the statement that reward practices of African companies that encourage entrepreneurial behaviour through individual reward practices influence the degree of corporate entrepreneurial behaviour within the South African banking industry, is more plausible.

5.4.5 Hypothesis 1e

Hypothesis 1e entailed the evaluation of the impact of transformational leadership in driving corporate entrepreneurial activity; transformational leadership is a leader's particular style and strategy (Bass, 1985). To achieve the daily and long-term demands of their job, leaders galvanise and bring employees along the journey to influence employee performance and subsequent organisational performance by creating loyal followers of employees and inspiring them to

participate in additional role activities to collectively accomplish a higher order purpose and the shared advancement of the firm. Inevitably, leader followers become change catalysts within an organisation and drive the business agenda of the leader (Avolio et al., 1999; Boukamcha, 2019).

According to Eyal and Kark (2004), transformational leaders are predisposed to being entrepreneurially themselves and due to their underlying attribute of being natural role models, they inspire their followers to drive entrepreneurial behaviour (Shafique & Kalyar, 2018).

The empirical data supported H1e; it was found that a significant relationship existed such that management-based capability of transformational leadership within African companies positively influences the degree of corporate entrepreneurial behaviour within the South African banking industry. These deductions were corroborated by previous South African based empirical studies that validated a direct positive, weak to moderate linear association between transformational leadership and corporate entrepreneurship, thus cementing transformational leadership's significance in fostering corporate entrepreneurship (Urban & Govender, 2018).

As such, a positive unit of additional transformational leadership within a corporate ecosystem results in 0.15 increase in corporate entrepreneurship activity levels within incumbent banks, thus reinforcing the importance of transformational leadership within a corporate entrepreneurial ecosystem.

It could be argued that it is essential for the top-management of a company to constitute transformational leaders, as they are collectively responsible for the vision and strategic intent of the company and for decisively selecting the strategic battlegrounds that the company will pursue. If a company aims to adopt an entrepreneurial strategy, transformational leaders within the top-management team are pivotal in making that decision, designing the strategic plan and role modelling actions in line with shaping an entrepreneurial orientation within an incumbent.

Furthermore, transformational leadership has a greater impact when this leadership style is consistently widespread within the top and middle management

leadership cohorts. Top management cohorts have the mandate and empowerment to drive corporate entrepreneurial outcomes, while according to Kuratko et al. (2005), middle managers are a critical conduit in driving employee entrepreneurial actions. This research included a small representation of both the top management (9.7 per cent) and middle management cohort (18.4 per cent), thus a much larger representation of sampled employees from the top management and middle management cohort, could potentially result in a larger cause and effect impact on corporate entrepreneurial activity than the 0.15 impact deduced in this study.

5.4.6 Hypothesis 1f

Hypothesis 1f entailed the evaluation of the impact of resource and capabilities in driving corporate entrepreneurial activity, which leverages a resource-based view of a company inclusive of a firm's ongoing acquirement, transformation, and divesture of its resource portfolio. Thus, the purposeful bundling of company resources to create novel capabilities, and implement and deliver an organisation's strategy drives long-term competitive advantage (Ireland, Hitt et al., 2003).

Resource allocation and resource decision-making is driven by the dominant logic of a company, which is shaped by the key assumptions of a firm (Ireland, Hitt et al., 2003; Kraus et al., 2011). Resource allocation towards building entrepreneurial capabilities enables incumbents to capitalise on opportunities arising from market uncertainty and shifts in market dynamics, thereby simultaneously enabling a corporate to both pinpoint and exploit fresh market opportunities and participate in advantage seeking behaviours driving competitive behaviour and market leadership (Ireland, Hitt et al., 2003).

According to Covin and Slevin (1991, p. 15), resources and organisational capabilities, form the bedrock for company action and influence the type of entrepreneurship a firm engages in, either spurring or discouraging corporate entrepreneurial actions within an organisation.

The empirical data supported H1f, and it was found that a significant, weak to moderate relationship existed such that allocation of organisational resources towards building entrepreneurial competencies within African companies positively influences the degree of corporate entrepreneurial behaviour within the South African banking industry. This supported the deductions theorised in the model of sustaining corporate entrepreneurship created by Kuratko, Hornsby et al. (2004) and validated this finding in a developing country context.

A positive unit of resource allocation and investment towards building corporate entrepreneurship capabilities within a corporate ecosystem resulted in 0.14 increase in corporate entrepreneurship performance within incumbent banks, thus strengthening the proposition that organisational resources and capabilities is a significant value driver within a corporate entrepreneurial ecosystem.

It could be argued that given that resource allocation and capability development is dependent on the dominant logic of the company, as posited by Kraus et al. (2011) and Ireland, Hitt et al. (2003), the impact of resource and capabilities on corporate entrepreneurial activity could potentially increase over time, from weak to moderate impact as the organisational entrepreneurial mindset envisioned in the strategy of the organisation is embedded as a dominant logic of the organisation. As this was a cross-sectional study, a longitudinal study, which could analyse impact over the medium to long term, could share additional insights into this cause-and-effect relationship within a corporate ecosystem over time.

5.5 Employee Level, Direct Cause and Effect System Analysis

Copious studies have explored the nature of employee influence on corporate entrepreneurial activity; however, the underlying attributes that constitute employee influence within a multidimensional corporate ecosystem and in relation to an entrepreneurial process that could be applied to a corporate setting have delivered mixed deductions (Glaser et al., 2021; Shane et al., 2003; Urban & Govender, 2018).

This research study shed some light on employee value drivers of corporate entrepreneurial activity and therefore willingness constructs, ability constructs and

arrangement constructs were explored as substructures of the employee construct to determine the direct cause and effect of each of the latent variables in relation to driving corporate entrepreneurial activity.

5.5.1 Hypothesis 2a

Extant empirical research and sociologists have criticised the role of human agency in entrepreneurship and by inference corporate entrepreneurship (Shane et al., 2003). A much-referenced phrase suggests that a 'person cannot win a game if they do not play'. Hence, employees cannot become intrapreneurs if they are not willing to engage in corporate entrepreneurial behaviour.

Thus, in aiming to scratch the surface of key employee value drivers of corporate entrepreneurial activity, not exploring the impact of human motivation on entrepreneurial action within a corporate entrepreneurial ecosystem, would be remiss. In assessing major motivational constructs that prior studies have advocated for, two research papers were leveraged that evaluated a spectrum of motivational drivers that were deemed reliable in influencing entrepreneurial behaviour, namely Shane et al. (2003) and Ardichvili et al. (2003).

Hence, a latent construct of an entrepreneurial persona was formulated for the purposes of this study and encapsulates four willingness constructs: need for achievement, locus of control, creativity, and optimism, to explore how trait-based motivations influence corporate entrepreneurial behaviour (Shane et al., 2003; Ardichvili et al., 2003).

Hypothesis 2a entailed the evaluation of the impact of an entrepreneurial persona in driving corporate entrepreneurial activity, as a willingness driver to motivate employees to behave intrapreneurially. The empirical data in this research diagnostic did not support hypothesis H2a; hence, an employee's personality and motivational characteristics moulded by their locus of control, need for achievement, creativity, and optimism were not significant drivers of corporate entrepreneurial performance within the South African banking industry.

This conclusion correlated with studies conducted by Holt, Rutherford and Clahessy (2007), where individual characteristics that underpin human willingness did not influence corporate entrepreneurial outcomes as willingness is a more material factor to entrepreneurial intention, which does not necessarily result in entrepreneurial endurance nor convert to entrepreneurial outcomes.

In line with empirical deductions of hypothesis 2a, the study equally found that:

i. The empirical data did not support hypothesis H2a.i. An employee's motivational characteristics in terms of need for achievement, which drives higher levels of accountability, did not influence the degree of corporate entrepreneurial behaviour within the South African banking industry. According to Kerr, Kerr and Xu (2018), mixed empirical deductions are as a result of specific contextual settings and thus conclusions vary across countries and cultural nuances as demonstrated across latent research.

ii. The empirical data did not support hypothesis H2a.ii. An employee's motivational characteristics in terms of locus of control, which is an intrinsic belief of being an architect of one's own destiny, did not influence the degree of corporate entrepreneurial behaviour within the South African banking industry. This aligned with the research findings of Bulmash (2016), who deduced that there was a non-significant relationship between locus of control and corporate entrepreneurship, which could be attributed to cultural dependencies (Mueller & Thomas, 2001).

iii. The empirical data did not support hypothesis H2a.iii. An employee's personality characteristic in terms of creativity, which is an aptitude of a person to employ imagination to formulate ideas, did not influence the degree of corporate entrepreneurial behaviour within the South African banking industry. Bratnicka and Bratnicki (2013) postulated that the lack of empirical evidence in relation to the direct correlation of creativity and entrepreneurial performance is a consequence of creativity being an enabler of idea generation, but is not sufficient as a standalone construct to drive entrepreneurial outcomes.

iv. The empirical data did not support hypothesis H2a.iv. An employee's personality characteristic in terms of optimism, which is a belief in one's own abilities, did not influence the degree of corporate entrepreneurial behaviour within the South African banking industry. This was congruent with the extensive theory review conducted by Kerr et al. (2018) across personality drivers of entrepreneurial behaviour, where literature lacked empirical substantiation of a direct relationship between optimism and entrepreneurial performance.

As such, the empirical data did not correlate with the theoretical deductions made by Shane et al. (2003) and Ardichvili et al. (2003), but corroborated latent empirical research studies in relation to human motivation constructs of need for achievement, locus of control, creativity, and optimism that have delivered inconsistent research findings in relation to human agency playing a positive causal impact on entrepreneurial activity (Shane et al., 2003).

The findings extended theory and delineated the process boundaries in which willingness attributes influence entrepreneurship, as human agency does not play an equitable role across all stages of the entrepreneurial process, equally the degree of relevance of motivational drivers will likely diverge (Kerr et al., 2018).

Given that the corporate entrepreneurial ecosystem is modelled on the final stage of the entrepreneurial process, which measures entrepreneurial execution or corporate entrepreneurial activity, human agency plays a less significant role and an employee's ability is a more prominent value driver of intrapreneurial behaviour. Thus, it is plausible that human agency plays a significant role in the desire to engage in entrepreneurial behaviour and the initial stage of the entrepreneurial process and acts as a precipitating corporate entrepreneurship factor, but an employee's knowledge, skills and abilities converts desire and intent into outcomes (Mokaya, 2012).

5.5.2 Hypothesis 2b

Hypothesis 2b entailed the evaluation of the impact of an entrepreneurial mindset, which encapsulates an individual's cognitive horsepower and thinking paradigm as

a robust precursor of individual level entrepreneurial behaviour, in driving corporate entrepreneurial activity (McGrath & MacMillian, 2000).

Entrepreneurial mindset, which is underpinned by the superior cognitive workings of the mental scripts of an individual, is an employee level construct that has been theorised to explain differential entrepreneurial performance among employees (McGrath & MacMillian, 2000; Haynie et al., 2010). This performance “enables employees to adapt and respond to varying environmental conditions, recognise opportunities under ambiguous circumstances, and creatively exploit opportunities to enable innovation and performance within the corporate domain” (Urban & Govender, 2018, p. 124).

The empirical data supported H2b, which found that a significant relationship existed such that an employee’s cognitive ability and subsequent entrepreneurial mind-set in relation to goal orientation, metacognitive knowledge, metacognitive experience, metacognitive choice, and monitoring positively influenced corporate entrepreneurial behaviour at a weak to moderate degree within the South African banking industry.

This research perspective holds true not only in the academic propositions of Gaglio and Katz (2001), but equally across boundary conditions of developing countries and the institutional context of large incumbent organisations operating within a regulated environment, which has been validated through corporate entrepreneurial empirical studies conducted within the financial services industry in South Africa. These studies confirmed that the reflective latent construct of an entrepreneurial mindset positively influences greater levels of corporate entrepreneurial activity within incumbent banks inside the same degree of impact range (0.15) as deduced in this study. A positive unit of entrepreneurial mindset among employees within a corporate ecosystem results in 0.15 increase in corporate entrepreneurship activity levels within incumbent banks, thus cementing that the cognitive mindset of an employee is a noteworthy component of a corporate entrepreneurial ecosystem (Urban & Govender, 2018; Urban & Wood, 2017).

It could be argued that the unleashing of the entrepreneurial zeal within employees that have the cognitive ability requires both the reinforcement of organisational entrepreneurial endorsement through both the hardwiring and soft wiring, which occurs over the medium to long term. Thus, the impact of the entrepreneurial mindset on corporate entrepreneurial activity could potentially increase over time, from weak to moderate impact once employees achieve a sense of personal safety in undertaking intrapreneurial behaviour across financial cycles and business areas within a company. As this was a cross-sectional study, a longitudinal study, which could analyse impact over the medium to long term, could share additional insights into this cause-and-effect relationship within a corporate ecosystem over time, and assess the achievement of personal safety results in increased levels of entrepreneurial activity.

5.5.3 Hypothesis 2c

Hypothesis 2c entailed the evaluation of the impact of arrangement schema in the form of social networks in driving corporate entrepreneurial activity. Social networks serve as goodwill, which is leveraged for employees to access information and resources, gain political support and influencing power, and enable the efficient execution of workflow activities (Chang et al., 2019; Floyd & Wooldridge, 1999).

Information in relation to the forward intentions of the company, access to fresh internal and external intelligence and the ability to leverage an influencing position within the firm to obtain access to resources and innovation exchange coupled with political clout enables employees to convert market knowledge and business opportunities into ideas. This enables them to legitimise ideas quickly and sway key decision-makers to buy into and invest in new initiatives that may even go against the grain of the dominant logic, thus driving intrapreneurial action and entrepreneurial performance (Floyd & Wooldridge, 1999; Glaser et al., 2021).

However, the empirical data did not correlate with the theoretical deductions made by theorists, Adler and Kwon (2002) and Glaser et al. (2021), thus nullifying hypothesis H2c resulting in the deduction that an employee’s social network is not

a significant driver of corporate entrepreneurial behaviour within the South African banking industry. This discovery was influenced by the contextual setting of the research, being a developing market, which shaped the quantum and configuration of total resource capital retained by employees in developing markets. This is materially different to employees from western markets as substantiated by the study conducted by Yiu and Lau (2008), thus extending theory related to the relationship between social capital and corporate entrepreneurship based on contextual performance relationship patterns.

It could also be argued that institutional context further influences the research findings, as within a banking corporate setting, the influence of social networks on corporate entrepreneurial activity is localised to top management leadership cohorts and to the initial stages of the entrepreneurial process.

This research position was substantiated with the following considerations, first, incumbent-banking organisations, are highly regulated working environments where influence is embedded in organisational positions. Given the organisational size and complexity of the sampled incumbent banks, audited processes govern resource allocation, and decision-making sits with the top management executive team of the bank and divisional areas. The influence of the diversity of social ties outside of the top management teams of the bank is a behavioural outlier rather than the norm.

Second, given the positive empirical evidence in relation to organic organisational structures and corporate entrepreneurial behaviour within this study, strategy execution, capability building, and innovation is decentralised and are governed by divisional areas and their internal processes. Hence, the influence of the diversity of social ties for the broad spectrum of leadership cohorts is a behavioural outlier rather than the norm.

Third, influencing key decision makers to challenge the status quo and go against the grain of the dominant logic of a regulated entity, which is part of an entrepreneurial orientation, requires political clout and substantial influencing power that comes from positional power within incumbent banks.

Thus, given the ways of working, in regulated incumbent organisations, the causal impact of the diversity of social ties on the corporate entrepreneurial process probably had more impact in idea recognition due to the access of asymmetrical knowledge. Due to the processes that govern financial capital, resource trade-offs and investment plans, the causal impact of social capital on the other stages of the entrepreneurial process is significantly reduced and localised to the top management leadership cohorts and to a lesser extent senior management cohorts. This finding of varying degrees of social capital influence on the various stages of the entrepreneurial process was consistent with the findings from the research study conducted by Ardichvili et al. (2003).

This study had a minimal representation of the top management leadership cohort and measured the final stage of the entrepreneurial process, entrepreneurial execution, or corporate entrepreneurial activity. Even though extant literature deduced a positive causal relation with entrepreneurial behaviour, the empirical data from this study did not support this claim.

5.5.4 Hypothesis 2d

According to Reuber and Fischer (1999), the inspiration to act entrepreneurially is the consequence of the chemistry between a person's particular characteristics and cognitive horsepower and their personal environment. One can argue that for an entrepreneur and forebear of their own business, their environment is wholly their macro environment; however, for an incumbent employee that is not the situation and in fact their environmental context is moulded more significantly by their internal organisational environment.

Thus, a corporate entrepreneurship-friendly environment is a function of relations between strategy, leadership, and structural elements that together encourage employees who have a pro-entrepreneurial disposition to behave entrepreneurially.

Hence, Hypothesis 2d entailed the evaluation of the moderating impact of the organisational value drivers of entrepreneurship on the relationship between employee-level antecedents and levels of corporate entrepreneurial behaviour.

The effect size of the interaction term of organisation multiplied by employee was 0.000, which was evidence of no moderation effect on corporate entrepreneurial activity, as such the empirical data did not support hypothesis 2d. Thus, the empirical data did not correlate with the exploratory theoretical deductions proposed within this study and a conducive entrepreneurial internal environment did not play a significant role in converting employees whom have a pro-entrepreneurial disposition to behave entrepreneurially and drive firm-level corporate entrepreneurial activity.

As such, the puzzle is created as to why an outwardly encouraging pro-entrepreneurial environment did not enhance individual level entrepreneurial behaviour. According to Mustafa and Hughes (2018), the answer lies in the institutional contextual conditions and the complexities thereof. The sphere of contextual influence is layered based on the sub-context of each employee, moulded based on an employee's positional power, job role, organisational work, and environment. This extends the theory of individual entrepreneurial behaviour through a fine-grained understanding of micro contextual influence.

5.6 Environment Level, Direct Cause and Effect System Analysis

Latent entrepreneurial research has recently focused on macro level environmental level drivers; however, the consistency in findings in relation to environmental antecedents has been lacking, thus additional contextual empirical studies are required to overcome these challenges (Shane et al., 2003, Zahra, 1993).

Environmental factors have been posited as having a direct causal effect on corporate entrepreneurship (Covin & Slevin, 1991; Zahra, 1991), where environmental settings act as both a stimulus for entrepreneurial behaviour as well as a strong hindrance. Other latent research has posited that the environment acts as triggers or precipitating events within a corporate entrepreneurial ecosystem (Kuratko, Hornsby et al., 2004; Mokaya, 2012).

This research study explored the role that macro factors played within a corporate entrepreneurial ecosystem, where constructs of dynamism and hostility were explored as substructures of the environmental construct to determine the direct cause and effect of each of the latent variables in relation to driving corporate entrepreneurial activity. As such, this study hypothesised the environmental constructs as causal value drivers of corporate entrepreneurial activity rather than triggers within a corporate entrepreneurial ecosystem.

5.6.1 Hypotheses 3a and 3b

Hypothesis 3a entailed the evaluation of the impact of dynamism within the external landscape in driving corporate entrepreneurial activity, where market dynamism was a consequence of rapidly evolving market conditions. Due to the fluidity in the operating environment, fresh market opportunities present themselves that could positively enrich a businesses' value proposition to the market (Lumpkin & Dess, 2001; Zahra, 1991).

Hypothesis 3b entailed the evaluation of the impact of hostility within the external landscape in driving corporate entrepreneurial activity, where hostility was the result of intense competition, blurring of industry lines, and technological and innovation disruption (Ireland et al., 2009; Zahra, 1993).

According to Zahra (1991), the environmental context in which businesses operate is not static and provides companies with both a yin and yang operating domain, on the one side a basket of fruitful opportunities and on the other hand, a steep challenge curve.

Thus, the yin is that dynamism encourages organisational corporate entrepreneurial behaviour since companies react to uncertain opportunity rich markets by demonstrating an entrepreneurial orientation of being innovative, taking calculated risks, and displaying a proactive disposition (Covin & Slevin, 1991). Market hostility creates a spur for incumbents to reinvent their business models, participate in product and process innovation and establish novel ways to differentiate themselves and effectively compete, thus invigorating corporate entrepreneurship within companies (Lumpkin & Dess, 2001; Zahra, 1991; 1993).

However, the yang is incongruous tensions of enabling business stability during highly turbulent market conditions like COVID-19, incumbents manage business risk by shifting their priorities towards business survival as a single-minded goal for their company, thus focusing on effectively running their core business under unprecedented market conditions, and not investing in growth and transformation (Pan et al., 2021).

Banking incumbents are highly regulated companies that primarily focus on managing business risk, thus a more conservative business approach is applied during conditions of high market instability and fluidity. Thus, incumbent banks manage market risk uncertainty by maintaining stable business models and acting more cautiously. By deduction, incumbent bank's business response to environmental shifts, materially differ, resulting in them choosing to conserve resources strategically rather than competitively responding by investing in innovation and new business models (De Villiers-Scheepers, 2012; Morena & Casillas, 2008). Hence, in the case of incumbent banks, hostility and dynamism were hypothesised to stifle corporate entrepreneurial activity.

Nevertheless, the empirical data did not support Hypotheses 3a and 3b. Thus, dynamic and hostile business environments were not a significant driver of corporate entrepreneurial activity within South African banking firms, which corresponds with the South African study conducted by De Villiers-Scheepers (2012), in which the relationship between hostility and corporate entrepreneurial behaviour was deemed as non-significant.

The empirical data was not consistent with the theoretical propositions of Zahra (1991, 1993) but reinforced the inconsistencies in empirical latent research. A key contributing factor that has been missed was the environmental setting of the study as "entrepreneurial theories have a predominant developed economy focus" (De Villiers-Scheepers, 2012, p. 1). Applying this theory framework into an emerging economy context was not fit for purpose given developing world market insecurities and executive analyses of such environmental ambiguities (Mustafa & Hughes, 2018). Thus, theory modification of macro level influence on corporate entrepreneurial performance is bound by the boundary conditions of environmental market context (Mustafa, 2022).

Based on the contextual dynamics of an African market, it could be argued that macro level environmental factors are not direct causal value drivers of corporate entrepreneurial activity, but rather by applying a defacto approach, are triggers within a corporate entrepreneurial ecosystem (Mustafa, 2022, Tantawy, Elaasi & Elshawadfy, 2021).

Combing through extant research, it was undeniable that environment level constructs played a role, but it could be argued that that role is ring fenced to a precipitating event within a corporate entrepreneurship ecosystem (Mokaya, 2012). This concurs with theoretical deductions, made by Kuratko, Hornsby et al. (2004), in which the environmental factors directly influence the strategy development and strategic direction of most companies (Ireland et al., 2009), and supports the claim by Zahra (1993) that the relationship between environmental drivers and corporate entrepreneurship activity is not necessarily a linear, causal relationship.

Changes to the operating context of a company present both opportunities and threats to organisations. However, to seize the opportunities and abate the threats, companies must have congruence between their strategy and the external environment. Thus, companies can choose to respond to external stimuli by adapting their strategy and strategic orientation of the company. This might result in the strategic choice of a corporate entrepreneurial strategy or an alternative strategic orientation. However, the extreme end of the spectrum is that firms do not respond to the environmental forces, which has more to do with the effectiveness of the strategic planning process within an organisation and current company ideologies (Ferreira, 2002; Kuratko, Hornsby et al., 2004).

5.6.2 Hypothesis 3c

Pulling the empirical finding thread of H3a and H3b, environmental forces act as triggers to the strategic response of a company, resulting in multi scenarios playing out. Contrarily, a firm reacts negatively to the external stimulus and market disruption and sways toward reduction in a firm’s risk appetite, company stagnation, or closure (Kuratko, Hornsby et al., 2004).

As such, incumbents choose and decode stimuli according to theories of action encrypted by previous strategies, the dominant logic of the company, and its corporate culture. Thus, companies evolve and react to external stimulus by continuing to evolve in similar ways, dictated by the current organisational inertia of a company. Hence, companies that have a predisposition to entrepreneurship will respond with an entrepreneurial mindset to environmental triggers (Kuratko, Hornsby et al., 2004).

Hypothesis 3c entailed the evaluation the moderating impact of the entrepreneurial momentum of an organisation on the relationship between macro-level antecedents and levels of corporate entrepreneurial behaviour; entrepreneurial momentum was signified through the growth orientation construct.

Due to the two-stage statistical approach in relation to the moderation analysis, the causal relationship between an entrepreneurial momentum and corporate entrepreneurial activity was evaluated, and denoted a significant weak to moderate relationship. As such, a positive unit of entrepreneurial momentum within a corporate ecosystem resulted in 0.16 decrease in corporate entrepreneurship activity levels within incumbent banks, which does not correlate with the research findings of Van Wyk and Adonisi (2012), who deduced a positive relationship between the latent constructs.

The empirical finding that the entrepreneurial momentum of an incumbent decreases the levels of corporate entrepreneurial activity within banks brought into question the micro layers of contextual influence into the system of effect. This study was conducted during the COVID-19 pandemic, in a developing country, which is part of one of the hardest hit continents in the world. It could be argued that the impact of the pandemic on the livelihoods of banks' customers, saw banks adopt a more conservative approach to allocation of resources. Thus, financial trade-offs were made in lieu of running the bank vis-a-vis execution against their investment portfolio, regardless of the underlying momentum of the company.

From a moderation impact, the effect size of the moderation interaction term was less than 0.005, which is evident of a very weak effect on corporate entrepreneurial activity. The interaction term of growth multiplied by environment

was non-significant at a five per cent significance level, hence there was no evidence that the proposed moderator variable, entrepreneurial momentum had any effect on the relationship between the external environment and corporate entrepreneurial activity.

As such, the empirical data did not support hypothesis 3c, hence an organisation's underlying entrepreneurial momentum did not enhance the levels of corporate entrepreneurial performance between the macro environment and corporate entrepreneurial activity within South African banking firms.

The empirical data did not correlate with the exploratory theoretical deductions proposed within this study. Due to empirical findings that macro level factors are not direct value drivers of corporate entrepreneurial activity, but rather triggers to strategy resets and strategic responses within a company. Regardless of the entrepreneurial momentum within a company, the conversion of market intelligence into strategic actions in response to opportunities and threats due to environmental shifts within regulated companies are still dealt with systematically. This is done through the refresh or reset of an incumbent's strategy and business plan before the execution of that plan results in the outcome and bottom line benefit, thus denoting an indirect effect. Thus, institutional context and the effect of the overarching regulatory aspect of an incumbent, shapes corporate entrepreneurial outcomes (Gómez-Haro, Aragón-Correa, & Cordón-Pozo, 2011).

5.7 Inter-relation Macro Level Moderation Patterns within a Corporate Entrepreneurship Ecosystem

According to Covin and Slevin (1991), the external environment and the entrepreneurial process are intertwined. This thinking supports the Lewinian framework, where entrepreneurial behaviour is conceptualised because of the interaction between a person and the environment (Barreira et al., 2008, Lewin, 1936).

Given this research study was a multidimensional level analysis of a corporate entrepreneurship ecosystem where employee level value drivers and

organisational level value drivers of corporate entrepreneurial activity was explored within a total system. A nuanced understanding of the contextual role that macro-level factors played in employee driven corporate entrepreneurial behaviour and organisation driven entrepreneurial activity was important.

5.7.1 Hypotheses 4a and 4b

Hypothesis 4a entailed the evaluation of the moderating impact of the environmental construct on the relationship between employee-level antecedents and levels of corporate entrepreneurial behaviour and Hypothesis 4b entailed the evaluation of the moderating impact of the environmental construct on the relationship between organisation-level antecedents and levels of corporate entrepreneurial behaviour.

According to Kuratko and Hornsby (1998), environmental forces act as a precipitating event for corporate entrepreneurial behaviour and a motivational stimulus for employees to engage in the entrepreneurial process. Equally, it acts as an organisational stimuli for companies to adapt their strategies to being entrepreneurial and modify their organisational climates to enable the execution of a corporate entrepreneurial orientation. Thus, it could be deduced that environmental triggers moderate the strength of the relational influence that individual and organisational antecedents have on corporate entrepreneurial activity.

The moderation effect size of the interaction term denoted no effect on corporate entrepreneurial activity; as such, the empirical data did not support the hypotheses. Thus, environmental dynamics and hostility did not moderate the degree of influence that employee-level antecedents had on levels of corporate entrepreneurial behaviour within the South African banking industry. This did not correlate with the theoretical research conducted by Mustafa and Hughes (2018), which delineated the external environment as a contextual determinant of entrepreneurial behaviour for employees.

Contextual determinants of employee's entrepreneurial behaviour are layered in contextual complexity and the differential effects embedded in each layer and

across different levels (Mustafa & Hughes, 2018). Equally, contextual determinants are not static, but differ by employee based on the deductions derived in Hypotheses 3a, 3b, and 3c, thus creating customised boundary conditions for corporate entrepreneurship performance, thus modifying theory. This implied that market context, which acts at a different level to macro context overrides external environment factors of dynamism and hostility. As such, in an emerging market context, Africa, environmental factors did not play a significant role in corporate entrepreneurial performance nor acted as a contextual effect on intrapreneurial behaviour.

Following the same argument, the empirical results signified that the environment had a non-significant effect on the relationship between the organisation and corporate entrepreneurial activity and Hypothesis 4b was not supported. Thus, even though the effect size of the interaction term was greater than 0.025, which was evident of a large effect on corporate entrepreneurial activity, the interaction term of environment multiplied by organisation was non-significant. Thus, environmental forces trigger strategic responses based on the institutional context of an incumbent. The efficacy of the strategic responses is based on an incumbent's organisational effectiveness, which in African companies is their Achilles heel, according to Zoogah et al. (2015).

5.8 Corporate Entrepreneurship Ecosystem Model

The corporate entrepreneurship ecosystem was created to incorporate the dynamic interplay among the three layers, person, internal environment, and external environment, and to capture the idiosyncratic nuances due to the complexities encapsulated in a corporate entrepreneurship embedment process.

Overall, the corporate entrepreneurship ecosystem model theorised in this study exhibited good fit, as both the saturated and estimated fit analysis yielded scores of less than 0.08.

The array of hypothesised predictors of corporate entrepreneurial behaviour, entrepreneurial strategy, entrepreneurial structure, transformational leadership, organisational resources and capabilities, and an entrepreneurial mindset have

proved to influence entrepreneurial performance within a corporate ecosystem. The model's Q^2 value was greater than 0 (0.38), thus the predictor constructs displayed predictive relevance for corporate entrepreneurial activity. Whereas, entrepreneurial persona, social networks, entrepreneurial culture, entrepreneurial reward practices, dynamism, and hostility were not proven to be predictors of entrepreneurial activity within a corporate ecosystem.

Equally, since the three levels of system analysis was conducted, the effect of each layer of analysis was statistically validated to determine which layer acted as a significant value driver of entrepreneurial activity within a corporate ecosystem. Firm level behaviour has been largely attributed to organisational antecedents, whereas western theory building as augmented organisational antecedents and environment antecedents as influencers of firm level behaviour. Latent research, including three of the four underpinning theoretical frameworks of this research (Covin & Slevin, 1991; Guth & Ginsburg, 1990; Ireland et al., 2009; Kuratko, Hornsby et al., 2004) have downplayed the importance of employees in the firm level behaviour performance equation (Mustafa & Hughes, 2018).

As such, Hypothesis 1 evaluated the effect of organisational-level antecedent construct, as a predictor of corporate entrepreneurial activity. The empirical data supported Hypothesis 1; it was found that a significant relationship existed as a pro-organisational corporate ecosystem. This system was characterised by an incumbent's organisational level antecedent variables (leadership traits, corporate strategy, design structure, reward practices, and organisational resources) which positively influenced the degree of corporate entrepreneurial behaviour within South African banking incumbents, due to an ecosystem effect.

The statistical analysis concluded that the path coefficient between organisational-level antecedent constructs and corporate entrepreneurial activity was 0.66, which was statistically significant at $p < 0.01$. The quantum of the path coefficient was evident of a direct positive, large linear association and exhibited a significantly large effect (0.82) on corporate entrepreneurial activity within the ecosystem, thus it was a critical determinant of entrepreneurial activity within a corporate ecosystem.

As such, a positive unit of investment into the development of pro-entrepreneurial leadership traits, corporate strategy, design structure, and organisational resources and capabilities within an organisation resulted in a 0.66 increase in corporate entrepreneurship activity levels within incumbent banks, thus cementing that organisational effectiveness is the bedrock of a corporate entrepreneurial ecosystem.

Hypothesis 2 evaluated the effect of employee-level antecedent construct, as a predictor of corporate entrepreneurial activity. The empirical data found that a significant direct positive, weak to moderate linear relationship existed; an employee's antecedent qualities of a pro-entrepreneurial cognitive disposition, coupled with a personality and motivational disposition within a corporate ecosystem was a significant driver of corporate entrepreneurial performance within the South African banking industry. The quantum of the path coefficient (0.15) demonstrated a small effect (0.04) on corporate entrepreneurial activity within the ecosystem, which was a still a meaningful cog within a corporate entrepreneurial ecosystem. Thus, humane entrepreneurship, premised on the cognitive makeup and subsequent absorptive capacity of an employee, did influence a company's entrepreneurial performance. It was a valid conduit for the intrinsic intrapreneurial spirit of a person to execute an organisation's entrepreneurial strategy (Kim, Hornsby, Enriquez, Bae & Tarabishy, 2021, Prexl & Gonera, 2021).

Hypothesis 3 evaluated the effect of macro-level antecedent construct, as a predictor of corporate entrepreneurial activity. It was established and substantiated through empirical data that Hypothesis 3 was not supported and the external environmental context did not play a significant role in firm level entrepreneurial performance in Africa.

The study reinforced the foundational role that respective organisational antecedents play in driving firm level behaviour, but equally brought to the forefront the importance of intrapreneurial behaviour within the ecosystem and the contextual nuances of the institution in driving this behaviour. Also apparent was the difference in the influence of the macro market context in driving firm level behaviour in developed countries compared with emerging economies where the

economic uncertainties and business safety nets are vastly different and influence board and leadership responses (Mustafa & Hughes, 2018; Zahra et al., 2009).

The collective effect of the spectrum of predictor variables included within the corporate entrepreneurship ecosystem model resulted in a 58 per cent explanation of the variation in corporate entrepreneurial activity within incumbents in the South African banking industry. This was deemed a moderate to substantial predictive power of corporate entrepreneurial activity within a corporate ecosystem model (Hair et al., 2017). The corporate ecosystem model was no longer a three-tier system of analysis, but rather a two-tier system of analysis that incorporated output driven, targeted organisational and employee value drivers and served as a strategic capability framework; an organisation's strategic response to environmental opportunities and market threats.

It could be argued that the residual (42 per cent) explanation of the variation in corporate entrepreneurial activity within incumbents in the South African banking industry lies in corporate entrepreneurship drivers. The effect of these drivers, embedded over the long term as the optimum state of the system, was path dependent and informed by the idiosyncratic nuances that can be changed over time; symbolic of a punctuated equilibrium that can be explored through a longitudinal analysis of the corporate ecosystem model. Thus, some hypothesised predictors that were not supported in this study, may very well be significant value drivers in a longitudinal analysis, for example, an entrepreneurial culture,

This research study concluded that the optimal configuration of the input-transformation-output open corporate entrepreneurship ecosystem for highly regulated African institutional companies was based on the antecedent effect on corporate entrepreneurial performance, as illustrated in Figure 5.1.

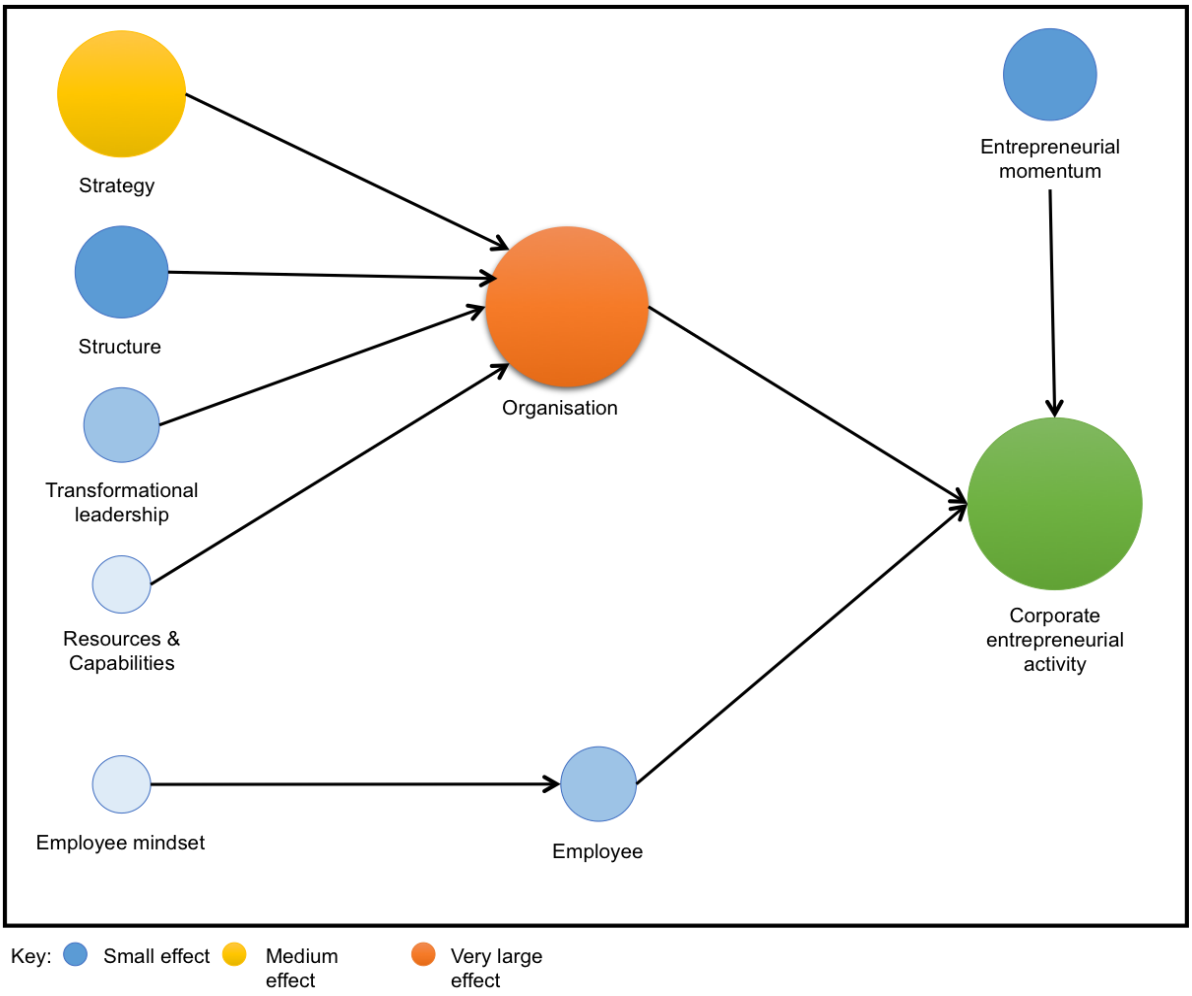


Figure 5.1: Corporate entrepreneurial ecosystem model

(Source: Own)

5.9 Discussion Conclusion

A quantum of research has been conducted within the field of corporate entrepreneurial research; regardless, there are several inconsistencies that remain in theoretical deductions. Given that this is a relatively new area of research, it could be assumed that some of these mixed results arose due to the context of the study. Other results arose because evaluation of certain antecedents were isolated within a particular level of analysis, and yet others were due to the dynamics of the entrepreneurial process within a corporate versus owner run businesses.

This study could concur with the fact that the social reality that surrounds corporate entrepreneurship is complex and not linear. To make sense of corporate entrepreneurship within incumbent organisations, the complexity of corporate entrepreneurship activity is encapsulated as an input-transformation-output open ecosystem. This mitigated operationalisation and embedment of entrepreneurial antecedents individually, in isolation of creating an effective ecosystem, which was vacuous in driving sustainable firm level entrepreneurial behaviour. In this study, firm level entrepreneurial behaviour was contextualised within the strategic renewal on incumbent banking institutes domiciled in Africa.

To capture value drivers and the nuances that occur in driving a distinctive type of performance within an incumbent, extant latent corporate entrepreneurship research was combined. This leveraged a theoretical configuration approach to isolate an array of influencing factors on the entrepreneurial embedment process, and delineated four foundational theoretical anchors, namely domain theory (Guth & Ginsburg, 1990), firm level entrepreneurship theory (Covin & Slevin, 1991), sustaining theory (Kuratko, Hornsby et al., 2004), and strategic integration theory (Ireland et al., 2009). These formed the basis of the design of a conceptual input-transformation-output open ecosystem, which incorporated three levels of system analysis.

Structural equation modelling, PLS-SEM was employed as a statistical tool to maximise the predictive power of the corporate entrepreneurial ecosystem and to perform the multi-layer analysis captured within the conceptual model. The model conceptualised the system effect of the corporate entrepreneurship relationship and contingency patterns. Thus, the research objective was to reduce the independent variables into variables that were significant output value drivers of entrepreneurial performance within a corporate ecosystem.

This research concluded that a corporate entrepreneurial ecosystem was in fact a two-tier input-transformation-output open system in developing economies and importantly, uplifted the role of entrepreneurial employee performance within a corporate entrepreneurship ecosystem. The design had a moderate to substantial predictive power of corporate entrepreneurial activity within a corporate ecosystem model. The most significant transformational driver of corporate entrepreneurial

activity within incumbents remained organisational antecedents (f^2=0.82), which included the development of transformational leadership traits and a pro-entrepreneurial corporate strategy and design structure, coupled with organisational resources and capabilities. A secondary meaningful transformational driver of corporate entrepreneurial activity was an entrepreneurial mindset, an employee antecedent (f^2=0.04).

However, the impact of transformational drivers was not equally distributed. Hence, the order of impact magnitude, informed by a construct's effect size on corporate entrepreneurial activity, varies meaningfully. By far, the adoption of a corporate entrepreneurial strategy (f^2=0.24) remained the central cog in the transformational wheel, supported by the spokes of the entrepreneurial momentum of an organisation (f^2=0.05), organic structural design (f^2=0.05), transformational traits of leaders (f^2=0.04), and an organisation's resources and capabilities (f^2=0.03), and finally the cognitive horsepower of employees (f^2=0.03).

The statistical analysis resulted in this research confirming latent empirical research in relation to the corporate entrepreneurship value drivers of entrepreneurial mindset, transformational leadership, structure, and organisational resources and capabilities. This research modified theory in relation to the centrality of strategy to the corporate entrepreneurship embedment process and extended theory in relation to the contextual corporate entrepreneurship tones that arose due to economic differences on hostility and dynamism, and institutional meso and micro effects on social ties, reward practices, and contingency patterns related to employee entrepreneurial output. Equally, this research modified theory in relation to the process nuances, which distinguished persona influencers of opportunity identification versus value drivers of entrepreneurial performance, and finally the contextual effect of timing on the embedment process as entrepreneurial output can be changed over time, due to non-linear effects specifically when it is related to cultural idiosyncratic paths.

As such, the hypothesised intrapreneurial response action equation underpinning a corporate entrepreneurial ecosystem modified the empirical finding which found that corporate entrepreneurial activity was a function of cognitive horsepower (hp_c) multiplied by internal environment (e_i). The internal environment was a function of

strategy (s) multiplied by leadership (l) multiplied by execution (e [structure (e_s) multiplied by capabilities (e_c)]).

6 CONCLUSION AND RECOMMENDATION

Appreciation for corporate entrepreneurship has gained significant momentum and it could be argued that it has become a buzzword in the corporate world. Globally, the world's top consulting houses have claimed to be the authority on infusing an entrepreneurial mindset into business practices.

The art of the possible in relation to corporate entrepreneurship is undeniable, more so now given the far-reaching consequences of the pandemic that has ripped through businesses globally; however, the true nuts and bolts of the 'what and the 'How' is lacking. Scholars deem corporate entrepreneurship a relatively new research domain that has attracted a fair amount of attention; however, it has been plagued with definitional issues and inconsistencies in theoretical findings (Ireland et al., 2009; Zahra, 1991).

Given the importance of the subject, the main thrust of this research was to provide clarity on the value drivers of entrepreneurial outcomes within a corporate entrepreneurial ecosystem and explain how they work together to deliver new value for a company. In addition, the study offered a cornerstone framework to respond strategically and with agility to the rapid changes in the external environment, which has been brought about by globalisation, the fourth industrial revolution, and more recently, the pandemic.

The foundational elements of the research approach applied a configuration approach to harmonise core corporate entrepreneurship frameworks to conceptualise an integrated, fine-grained model, and associated theories of a corporate entrepreneurial ecosystem that provides the basis to explore the causal relationship of external factors acting upon organisational ecosystems and intrinsic and extrinsic motivational drivers of corporate entrepreneurial behaviour.

The context of the study was incumbent banks headquartered in South Africa; an additional dimension to the study included the macro context of developing countries, in comparison with mature national entrepreneurial ecosystems of developed continents. Africa is often referred to as a 'dark horse'; a huge

opportunity, but challenged by a lack of organisational effectiveness across firms (Zoogah et al., 2015).

To validate the hypothesised fine grain model of a corporate entrepreneurship ecosystem, a data-led approach was adopted, leveraging a quantitative methodology. Given that the complexity of the social reality of corporate entrepreneurship was captured in the model, a second generation statistical diagnostic of PLS-SEM was employed that enabled the simultaneous evaluation of a multitude of causal relationships and the exploration of new theory.

The complexity of the hypothesised fine grain model of a corporate entrepreneurship ecosystem was “operationalised at a higher level of abstraction”, thus creating a hierarchical component model (HCM), that incorporated 22 first order latent constructs, four second order latent constructs, and two third order latent constructs (Hair et al., 2017, p. 281). Based on the relationship between the higher-order components and the lower-order components, the empirical model was a reflective-reflective HCM (Hair et al., 2017). As such, the disjointed two-stage methodology was employed to systematically analyse the measurement model to establish model reliability and validity and the assessment of the structural model to ascertain the predictive power of the designed corporate entrepreneurial ecosystem (Sarstedt et al., 2019).

The analysis concluded that the designed corporate entrepreneurial ecosystem was a two-tier input-transformation-output open system, with a moderate to substantial predictive power of corporate entrepreneurial activity and an organisation’s strategic response to environmental opportunities and threats. The most noteworthy value driver of corporate entrepreneurial activity within incumbents, remained organisational antecedents; supported by an ancillary value driver of an entrepreneurial mindset.

From the array of hypothesised organisational predictors of corporate entrepreneurial behaviour, only an entrepreneurial strategy, entrepreneurial structure, transformational leadership, organisational resources, and capabilities were proved to exhibit an effect on entrepreneurial activity within a corporate ecosystem.

Thus, corporate entrepreneurial activity is a function of the following equation:

> *strategy (s) x cognitive horsepower (hp_c) x leadership (l) x execution (e) [structure (e_s) x capabilities (e_c)].*

6.1 Corporate entrepreneurship capability framework

To navigate the choppy waters and thrive in the 'new normal', brought about the COVID-19 and 4IR eras, extant thought leadership declares that incumbents should infuse an entrepreneurial competency into their businesses; easier said, than done.

This study shed some light on the challenge and posited that winning in the new normal requires corporates at the core to become skilful strategists, to become masters of the 'art of corporate warfare'; creating organisational effectiveness in the strategic planning process and execution. Furthermore, corporates need to leverage this process to employ a distinctive type of strategy that expresses market agility, an entrepreneurial corporate strategy.

The empirical evidence from this study validates entrepreneurial corporate strategy as the bedrock of a corporate entrepreneurial ecosystem. Its singular effect on corporate entrepreneurial activity is circa five times larger than any other predictors are within the corporate entrepreneurial ecosystem. This concurs with the integrative model of corporate entrepreneurship strategy of Ireland et al. (2009), which conceptualised an entrepreneurial strategy as the heartbeat of the corporate entrepreneurship framework.

Leveraging the thinking of Ireland et al. (2009), corporate entrepreneurial strategy is both a perspective, which denotes intentionality, and a pattern, which denotes a sustained behaviour that is transformed into a capability. This capability advances a company's ability to effectively respond to dynamic and hostile changes in the market and enables a firm to remain astutely competitive through the various lifecycles of the business.

The other four predictors within the corporate entrepreneurial ecosystem are the arteries to the entrepreneurial corporate strategy, as illustrated in Figure 6.1. The right coronary artery is the enablement of employees to implement the corporate entrepreneurial strategy via the decisions and behaviours of transformation leaders and the entrepreneurial cognitive horsepower of employees. This ensures initiative development and strategic plan formulation that enables delivery of the corporate entrepreneurial strategy. The left coronary artery is the execution of the corporate entrepreneurial strategy via implementation of an organic organisational structure and the deployment of novel resource recipes to build new capabilities and adjacent capabilities to a firm's core offering. The right coronary artery had a collective effect on corporate entrepreneurial activity of 0.07, whereas the left coronary artery had a collective effect on corporate entrepreneurial activity of 0.08.



Figure 6.1: Strategic capability framework

(Source: Own)

An entrepreneurial corporate strategy is not static but requires a continuous evaluation of the external environment for macro movements, competitor analysis

and market trends to ensure that there is always congruence between the strategy and external environment (Ferreira, 2002). The empirical findings corroborated the notion that environmental factors do not have a direct effect on entrepreneurial activity within a corporate ecosystem; however, play a mission critical role in the development of an entrepreneurial corporate strategy that remains competitive through performance cycles and fortifies the company's position of strength.

This aligns with the design of the corporate entrepreneurial ecosystem being an open system, which is a punctuated equilibrium where the targeted state can be skilfully attained through a number of value paths (Kraus et al., 2011). Thus, firms regularly modify and adapt entrepreneurial corporate strategy in response to changes in the external landscape, to generate new value for the company and enable the organisation to sustain a future-proof business model.

Given the findings emanating from this report, Peter Drucker's (Whitzman, 2016, p. 574) statement, "Culture eats strategy for breakfast", could be challenged. The timeframe required to transform a culture, is a long one. In the rapid, undulating corporate environment that businesses operate in today, incumbents need to 'strategically strike first', 'strategically compete hard' and never let up; this is the art of corporate warfare and winning in the new normal (Tsu, 5BC/2010). Strategy is king, and in the game of business, corporate entrepreneurial strategy is a checkmate move in the art of corporate warfare.

6.2 Limitations of the Study

The context for this research study was the cross-sectional observation of causal and moderation patterns within an integrated, multi-level design of a corporate entrepreneurship ecosystem, across incumbent banks, domiciled within a developing continent.

Overall, several factors contributed to the number of responses, namely COVID-19, the POPI Act, company survey fatigue, and respondent fatigue. COVID-19 and working from home has made access to people and following up with people that have made commitments, very difficult. People have also been dealing with sickness and loss, which has added to the retracting of commitments. The POPI

Act prevented access to company mailing lists, as such, individual contact was required, which became very challenging when accessing a large sampling population. Companies were also administering several of their own internal surveys concurrently and employees were experiencing survey fatigue.

Due to the specificities of the research context, further testing may be required to validate the research deductions across sectors and incumbents. Some sectors might be characterised as more innovative and less constrained by a highly regulated industry, like banking. In addition, incumbents domiciled in developed continents where national entrepreneurial activity levels are meaningfully higher than Africa and South Africa, which is below the average of the African region (Bosma et al., 2021).

Given the ring fencing of the study to incumbent banks, value can be derived by expanding the empirical research across fintechs and digital banks to ascertain nuances that could be applied to provide incumbents an ‘outside in’ view of corporate entrepreneurial behavioural patterns that could generate novel value to incumbents. Generalised inferences from this study cannot be unilaterally applied to micro and small financial services companies, given their size and access to resources, without further empirical studies being conducted.

There are potentially two drawbacks from the study being cross-sectional; first, limitations in relation to the evaluation of enduring predictor relationships over time, and second, the “transient mood state” of respondents might influence the manner in which they evaluate themselves, thus affecting the measurement error of the reflective measurement model (Podsakoff et al., 2003, p. 882).

Given the snowball sampling technique leveraged in this study, the resultant response rate did not generate a fair representation of respondents across the corporate grade pyramid, where 56 per cent of respondents were part of the senior management cohort. Given that the level of influence and impact of leadership on the entrepreneurial process differs significantly across leadership cohort groups, this could be a potential limitation of the study (Kuratko et al., 2011). Since snowball sampling cannot generate a true random sample, it results

in the sample population being skewed based on a similar outlook or a set of characteristics to the initial respondent cohort (Etikan et al., 2016).

An additional limitation could have arisen from over sampling from one institute, which might have influenced the deductions based on the circumstances within a particular incumbent archetype. However, since no organisational identifiers were included in the study in order to maintain anonymity, one is unable to assess whether this limitation has materialised.

Although the design of the research study did control for common method biases, context bias emanating due to the meaning transferred from prior questions into how adjacent questions are answered could not be fully mitigated. Equally, biases attributed to rapport, where the level of accuracy is elevated is due to a respondent becoming increasingly more comfortable in their role, could contribute to some degree of measurement error in questions contained within the early parts of the survey (Jonsdottir, 2004).

Given the length of the survey, 125 questions, and the average time taken to complete a survey, 35 minutes, respondent fatigue contributed to the quantum of answered questions per survey and has equally affected the total number of respondents that participated in this research study (Jonsdottir, 2004). Although the impact was significantly mitigated by the research study employing a PLS-SEM statistical technique, there is a small probability that it could have contributed to measurement error (Hair et al., 2017).

The empirical model, which underpins this study, is based on a reflective-reflective model, which was modelled on a robust diagnostic analysis. However, if a component latent variable was in fact more of a formative variable, or a reflective variable, it would increase the measurement error in the model (Hair et al., 2017).

The empirical results emanating from this study, resulted in a 99% South African country representation. As such, the effect of the nuanced African cultural values across the continent and its influence on CE performance was not evaluated.

6.3 Implications of the Study for Business

According to McKinsey (2021b), the performance of traditional banks has diverged and there is a necessity for them to create new capabilities and a re-imagined business model. These should attract new customers and significantly improve the profitability of the business above the cost of equity, thereby attracting investors and enabling them to improve their post-pandemic performance recovery trajectory.

Corporate entrepreneurship is a competency that can unlock this opportunity for traditional banks, creating a platform to add new value to customers and shareholders by “generating new resource combinations” (Burgelman, 1984, p. 154). In addition, it should build adjacency capabilities to the bank’s core offering; capabilities that are “focused on growth and customer monetisation through services/commissions rather than just financial intermediation” (McKinsey, 2021b, p. 38).

Extant research has acknowledged the inherent value of corporate entrepreneurship as a strategic renewal competency of organisations globally, and the possibilities it provides corporates given the ramifications of the COVID-19 pandemic. However, what is amiss is how corporate entrepreneurship is embedded in an organisational setting (Kuratko & Audretsch, 2015) and what strategic initiatives need to be implemented to ensure that the competency is effectively developed within an organisation (Corbett et al., 2013), given that knowledge creation patterns are heterogeneous in nature and differ by country and industry context (Urban & Matela, 2022).

This is particularly pertinent in a developing economy; African context in which African companies deal with inherent organisational ineffectiveness, thus structured development of market opportunities into value creation requires a deliberate implementation blueprint of a value creation ecosystem. The exponential conceptual value of corporate entrepreneurship will not be realised within a business, without clear expertise (Urban & Matela, 2022).

This study has created a corporate entrepreneurship capability framework, supplemented by a prediction of high performing value drivers that form the building blocks of the corporate entrepreneurial performance ecosystem. This enables incumbent firms to have a clear implementation roadmap to embed the competency within their organization, and equips executives with knowledge regarding predictive strategic initiatives that require investment and prioritisation thus significantly increasing the likelihood of success and delivering the resultant impact of sustaining a future proof business model regardless of the movements in the market over the short to medium term.

This is particularly important given the resource constraints that businesses experience and the strategic trade-offs that need to be made to run and transform a bank, this strategic capability framework provides clarity on the large value drivers with the biggest effect on creating a corporate entrepreneurial competency, which is vital in a resource constrained operating context.

Research emanating from this paper posited that winning in the new normal requires corporates to become masters in strategy; selecting strategic battlegrounds that capitalise on market opportunities and emerging trends and combat external threats, thus ensuring perfect alignment between strategy and the environment (Ferreira, 2002).

This study has surfaced the criticality of investing and building an organisational effectiveness capability in strategy development and strategy execution, due to its singular effect on corporate entrepreneurship. This is vital for African businesses, given the “low level of organisational effectiveness” within these corporates, in general (Zoogah et al., 2015, p. 8).

To embed a corporate entrepreneurship capability effectively, apart from corporates mastering organisational effectiveness in strategy and strategy execution, corporates must nurture a particular profile of employees and leaders within the organisation. This study narrows down the human resource competency framework to entrepreneurial cognitive horsepower and transformational leadership traits. These are gauged by creating a comprehensive assessment framework that targets these distinct attributes through formal and informal testing

mediums. This assessment framework should be leveraged as a key decision-making tool during the human resource processes of recruitment, talent mapping, promotion, and succession planning, to increase the quantum of transformational leaders within management cohorts and employees who have an inherent entrepreneurial mindset. It is likewise used as a design outcome in leadership development courses and general employee development programmes.

Thus, apart from this study providing a critical organisational effectiveness capability framework for corporates, it also provides African business with a corporate entrepreneurship capability framework that is built on the bedrock of an organisational effectiveness capability framework and human resource competency framework, thus enabling incumbents to systematically become highly competitive.

6.4 Implications of the Study for Theory Development

Even among research studies that have concluded on the multiplicity causal effect of corporate entrepreneurship, limited inroads have been made to harmonise multiple perspectives of corporate entrepreneurship as a multi-construct (Moroz & Hindle, 2011). Equally, extant research has identified a spectrum of antecedent sets through isolated research studies, underpinned by competing theories and research inconsistencies, somewhat divorced from the social reality underpinning the workings of a company where a diversity of antecedents work together within an organisational system to achieve firm level entrepreneurial behaviour (Covin & Slevin, 1991; Ireland et al., 2009; Urban & Wood, 2017; Zahra, 1991).

This exploratory research study has bridged this gap by integrating the spectrum of antecedent sets that have been identified through targeted research studies into a comprehensive, multi-tier, system analysis model, thus creating a single harmonised model of corporate entrepreneurship within large corporates (Kuratko, Hornsby et al., 2004; Moroz & Hindle, 2011) that generates sustainable strategic entrepreneurial outcomes (Kuratko, Hornsby et al., 2015; Zahra, 1991).

The research study augmented the corporate entrepreneurial knowledge domain by deepening the academic understanding of the dynamic complexity of the

corporate entrepreneurial embedment process enabling strategic renewal, transformational change (Bloodgood et al., 2015), and the mechanisms that empower corporate entrepreneurial performance within an organisational setting (Kuratko & Audretsch, 2013). This was done through the integrated analysis of the causal relationship patterns among a comprehensive set of multi-level antecedent variables (Kuratko, Hornsby et al., 2004).

Strategic entrepreneurship is a growing research field; some scholars may argue that it is in its infancy, thus this research shed light and cleared ambiguity by creating clarity associated with the operational framework of strategic entrepreneurship. Thus, this study extended academic research by advancing the development of a comprehensive corporate entrepreneurial performance ecosystem framework and predicting high performing value drivers of corporate entrepreneurial performance. This was done by delineating core relationships through a structured diagnostic of performance pattern fit among individual, organisational, and environmental factors that were empirically validated to be primary value drivers on corporate entrepreneurship within a transformational open ecosystem (Corbett et al., 2013; Schroder et al., 2021).

Given the vast range of antecedents that were analysed, the empirical research was able to pinpoint the heart of corporate entrepreneurship and its two main arteries, an area of new knowledge and a noteworthy development in corporate entrepreneurship given the diversity of theories that are available.

The study amplifies literature by developing a capability-oriented corporate entrepreneurial model (Sakhdari, 2016), which mapped the corporate practices and processes that enhance the rate of corporate entrepreneurial performance and served as an organisational effectiveness capability framework for African businesses. This framework enabled African organisations to compete effectively in a global arena and recover from the COVID-19 pandemic, thereby advancing African management theory and business insights into transformational and organisational effectiveness within the Banking sector in emerging economies. This advancement included creating a model that provided a roadmap to building company differentiated resources and capabilities that are difficult to replicate (Zoogah et al., 2015).

This study equally progressed the understanding of corporate entrepreneurial behaviour within the financial services sector in developing countries (Murimbika & Urban, 2013; Urban & Wood, 2017). It concluded on the significance of network ties in driving corporate entrepreneurial activity in the context of developing countries, and the moderation effect of organisational mechanisms in stimulating intrapreneurial behaviour among African employees (Sakhdari, 2016).

The study modified corporate entrepreneurial research in relation to the contextual nuances derived because of the African environmental setting and its influence on the knowledge transfer process of market intelligence into corporate entrepreneurial performance (Zahra, 2015). Furthermore, it highlighted the relational influence of dynamism and hostility on corporate entrepreneurship within an African organisational setting (Mustafa & Hughes, 2018).

However, the significance of the corporate entrepreneurial performance capability framework is not isolated to firm level benefits, as “entrepreneurship plays an indispensable role in improving productivity and promoting economic growth” (Chen et al., 2005, p. 529). The aggregated value across businesses extended to a national level, where banks play a critical role in the wider economic and societal development within Africa, and directly increase the speed of the COVID-19 pandemic recovery across the continent (McKinsey, 2021a).

6.5 Novel Research Contribution

The theoretical contribution this study made was aligned with its original research intentions regarding addressing theoretical white spaces, as outlined in section 6.4, and advancing the empirical knowledge base of the field of corporate entrepreneurship. This study, through its observed research of an integrated complex corporate entrepreneurship system within an incumbent, a research gap identified by Urbano, Turro, Wright, and Zahra (2022), unearthed the added benefit of being able to “contextualise corporate entrepreneurship theory building, which is central to the advancement of entrepreneurship as a scholarly field” (Zahra, 2007, p. 443). It has brought to forefront the contextual nuances at play with respect to corporate entrepreneurship, which confirmed that a basic formulaic

approach will not work in relation to corporate entrepreneurship (Wales et al., 2021).

In a corporate entrepreneurship ecosystem, there are different layers of contextual effect that affect the total sphere of influence from the macro-economic layer, to the meso, institutional layer informed by the size of the company, regulation, board composition, market orientation, and industry, and finally to the micro layer informed by the sub context of an employee that is shaped by their positional power, job role, organisational work, and work environment (Gomez-Haro et al., 2011, Mustafa & Hughes, 2018).

Contextual tones of situational nuances like the pandemic, entrepreneurial embedment process stages, and the effect of timing on the optimal configuration pattern, all have an impact on the corporate entrepreneurship relationship and contingency patterns, and the optimal state of the corporate entrepreneurship ecosystem. Thus, corporate entrepreneurial outcomes need to be engineered for a contextual set of circumstances (Van Wyk & Adonisi, 2012, Wales et al., 2021).

Nevertheless, it is not a grass roots build in every organisational type; this research has developed a core corporate entrepreneurship capability model that has usability across contextual boundaries. It delineates the inner foundation of a corporate entrepreneurship ecosystem and maps the corporate practices and processes that enhance the rate of corporate entrepreneurship performance through the conversion of market intelligence into strategic responses that affect competitive advantage, thus encapsulating a knowledge transfer process (Sakhdari, 2016).

This fine-grained model is based on a “knowledge view of a company” (Kodama, 2006, p. 1390), and sheds light on the “heterogeneity of corporate entrepreneurship” (Pizarro-Moreno, Real & Sousa-Ginel, 2007, p. 9) across different boundary conditions that leads to an idiosyncratic corporate entrepreneurship embedment process that is path dependent and validates why corporate entrepreneurship is an organisational capability, which is so difficult to replicate (Foss, 1996; Kazanjian, Drazin & Glynn, 2017).

6.6 Suggestions for Future Research

Given that this study has contributed meaningfully to deepening and augmenting corporate entrepreneurial literature and shedding light on previous research inconsistencies, cumulative value can be derived if the limitations of this study could be addressed. This could be done through the application of the corporate entrepreneurial performance ecosystem model and capability framework derived in this study, and its empirical validation across other sectors and global operating markets, thus allowing for the development of a universal corporate entrepreneurial performance capability framework that transcends the nuances embedded in the size of business, industry type, and country of domicile.

Equally, future research pertaining to longitudinal empirical studies of the corporate entrepreneurial performance ecosystem, which evaluates the impact of enduring predictor relationship of culture on corporate entrepreneurial activity over time, will be insightful and provide definitive clarity into whether enduring variables influence the long-term corporate entrepreneurial performance ecosystem of an incumbent. Based on the mixed empirical results pertaining to the direct relationship between reward practices and corporate entrepreneurship activity, further testing in this regard is recommended; the research study should be based on incumbents that utilise variable pay as a key driver for total compensation and a mechanism to reinforce individualism.

Given the deductions of the study regarding macro-level factors, further research is suggested in ascertaining the dynamics and drivers of the knowledge transfer process of market intelligence into corporate entrepreneurial performance and the nature of the catalyst relationship between the external environment and corporate entrepreneurial strategy. Three sets of diagnostics are recommended: first, to establish the effects of the direct relationship; second, an assessment of the moderation effect of environmental triggers on the causal relationship between corporate entrepreneurial strategy and corporate entrepreneurial activity; and third, the mediation effect of strategy on the relationship between macro-level factors and corporate entrepreneurial activity. These can collectively create clarity into the exact nature of the non-linear relationship between the external

environment and corporate entrepreneurial behaviour within developing economy incumbents, an area of research that has attracted significant research interest and would help with resolving extant research inconsistencies (Zahra, 1993).

Given some research design limitations, suggestions of additional testing using a different ordering of the survey questions, applied to create survey types that are randomly distributed coupled with focus groups and/ or targeted interviews are suggested to limit ordering effect and biases relating to rapport, context and fatigue. Furthermore, questions within each latent variable scale are narrowed down to salient questions based on the validity and reliability studies on this research paper thus reducing the overall length of the survey and meaningfully reducing the effect of fatigue biases (Jonsdottir, 2004).

Grounded on the deductions emanating from this study, further empirical research is suggested in relation to the moderation effect of entrepreneurial momentum on the corporate entrepreneurial performance ecosystem in a post COVID-19 era within banking corporates. Further research should bear in mind that that banking corporates' strategic appetite during the first two years of the pandemic, which is the period in which this study was conducted, was to conserve capital, ensure business resilience, and protect the livelihoods of their employees and customers (PWC, 2021).

Finally, delineating the core organisational corporate entrepreneurial performance drivers that strengthen employee intrapreneurial behaviour within a dynamic performance corporate entrepreneurship ecosystem is recommended. The different layers within the micro context of an employee should be empirically tested across different types of sub-context environments to isolate the determinants of intrapreneurial behaviour within the corporate entrepreneurship performance ecosystem.

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APPENDIX A: CONSISTENCY MATRIX

Determinants of intrapreneurial performance within the banking industry in South Africa						
Aims of research	**Literature Review**	**Primary Hypotheses**	**Secondary Hypotheses**	**Research Scale**	**Type of Data**	**Analysis**
To determine whether corporate entrepreneurship is a multi-dimensional construct				**Corporate Entrepreneurship:** Corporate Entrepreneurship Index (Miller & Friesen, 1982): Cronbach alpha of 0.75 (Zahra & Covin, 1995)	Continuous	PLS-SEM Analysis (Lowry & Gaskin, 2014)
	McGrath & MacMillian, (2000); Gaglio & Katz, (2001); Urban & Wood, (2017); Urban & Govender, (2018).	Individual level entrepreneurial antecedents positively influence levels of corporate entrepreneurship	An employee's cognitive ability and subsequent entrepreneurial mind-set in relation to goal orientation, metacognitive knowledge, metacognitive experience, metacognitive choice, and monitoring coupled with a favourable entrepreneurial ecosystem positively influences the degree of corporate entrepreneurial behaviour within the South African banking industry	**Entrepreneurial Mind-set:** MAC (Haynie & Shepherd, 2009): Cronbach alpha of 0.885 across all 5 dimensions (Haynie & Shepherd, 2009)	Continuous	PLS-SEM Analysis (Lowry & Gaskin, 2014)
	Adler & Kwon (2002).		The depth and diversity of an employee's social network coupled with a favourable entrepreneurial ecosystem positively influences the degree of corporate entrepreneurial behaviour within the South African banking industry.	**Social Capital:** Social Models (Hmieleski & Corbett, 2006): Cronbach alpha of 0.86 Hmieleski & Corbett, 2006)	Continuous	PLS-SEM Analysis (Lowry & Gaskin, 2014)

Determinants of intrapreneurial performance within the banking industry in South Africa						
Aims of research	**Literature Review**	**Primary Hypotheses**	**Secondary Hypotheses**	**Research Scale**	**Type of Data**	**Analysis**
To determine whether corporate entrepreneurship is a multi-dimensional construct	**Need for Achievement:** Shane et al. (2003). **Locus of Control:** Shane et al. (2003); **Creativity:** Ardichvili et al., (2003); **Optimism:** Ardichvili et al., (2003);	Individual level entrepreneurial antecedents positively influence levels of corporate entrepreneurship	An employee's motivational characteristics in terms of **need for achievement**, coupled with a favourable entrepreneurial ecosystem positively influence the degree of corporate entrepreneurial behaviour within the South African banking industry. An employee's motivational characteristics in terms **of locus of control**, coupled with a favourable entrepreneurial ecosystem positively influence the degree of corporate entrepreneurial behaviour within the South African banking industry. An employee's personality characteristics in terms of **creativity**, coupled with a favourable entrepreneurial ecosystem positively influence the degree of corporate entrepreneurial behaviour within the South African banking industry. An employee's personality characteristics in terms of **optimism**, coupled with a favourable entrepreneurial ecosystem positively influence the degree of corporate entrepreneurial behaviour within the South African banking industry.	**Entrepreneurial Persona:** Motives scale (McClelland, 1961): Cronbach alpha of 0.8 (Yamaguchi, 2003); General Self-efficacy scale (Schwarzer, 1993): Cronbach alpha of 0.82 Hmieleski & Corbett, 2006); Chance scale (Levinson, 1980): Cronbach alpha of 0.72 Hmieleski & Corbett, 2006); Creativity scale (Tierney et al., 1999): Cronbach alpha of 0.96 (Tierney et al., 1999)	Continuous	PLS-SEM Analysis (Lowry & Gaskin, 2014)

Determinants of intrapreneurial performance within the banking industry in South Africa						
Aims of research	**Literature Review**	**Primary Hypotheses**	**Secondary Hypotheses**	**Research Scale**	**Type of Data**	**Analysis**
To determine whether corporate entrepreneurship is a multi-dimensional construct	Guth & Ginsberg, (1990); Covin & Slevin, (1991).	Organisational level entrepreneurial antecedents positively influence levels of corporate entrepreneurship	Strategy formulation within African companies that results in the development of an entrepreneurial strategy coupled with a favourable entrepreneurial ecosystem positively influences the degree of corporate entrepreneurial behaviour within the South African banking industry.	**Entrepreneurial Strategy:** Entrepreneurial strategy -making scale (Miller, 1983 & Covin & Slevin, 1991), Cronbach alpha of 0.75 (Li, Zhang & Chan, 2005)	Continuous	PLS-SEM Analysis (Lowry & Gaskin, 2014)
	Ling et al. (2008); Urban & Govender, (2018).		Management-based capability of transformational leadership within African companies coupled with a favourable entrepreneurial ecosystem positively influences the degree of corporate entrepreneurial behaviour within the South African banking industry.	**Transformational Leadership**: Multifactor Leadership Questionnaire (Avolio et al, 1999): Cronbach alpha of 0.81 (Jung et al., 2003)	Continuous	PLS-SEM Analysis (Lowry & Gaskin, 2014)
	Guth & Ginsberg, (1990); Covin & Slevin, (1991).		A culture that cultivates an entrepreneurial mindset within African companies coupled with a favourable entrepreneurial ecosystem positively influences the degree of corporate entrepreneurial behaviour within the South African banking industry.	**Entrepreneurial Culture:** Stevenson scale (Brown et al., 2001): Cronbach alpha of 0.68 (Brown et al., 2001)	Continuous	PLS-SEM Analysis (Lowry & Gaskin, 2014)

Determinants of intrapreneurial performance within the banking industry in South Africa						
Aims of research	**Literature Review**	**Primary Hypotheses**	**Secondary Hypotheses**	**Research Scale**	**Type of Data**	**Analysis**
To determine whether corporate entrepreneurship is a multi-dimensional construct	Guth & Ginsberg, (1990); Kuratko, Hornsby et al., (2004).	Organisational level entrepreneurial antecedents positively influence levels of corporate entrepreneurship	An organic operating structure of an incumbent organisation coupled with a favourable entrepreneurial ecosystem positively influences the degree of corporate entrepreneurial behaviour within the South African banking industry.	**Management Structure:** Stevenson Scale (Brown et al., 2001): Cronbach alpha of 0.78 (Brown et al., 2001)	Continuous	PLS-SEM Analysis (Lowry & Gaskin, 2014)
	Ireland et al. (2009).		Reward practices of African companies that encourage entrepreneurial behaviour coupled with a favourable entrepreneurial ecosystem positively influences the degree of corporate entrepreneurial behaviour within the South African banking industry.	**Reward Philosophy:** Stevenson scale (Brown et al., 2001): Cronbach alpha of 0.68 (Brown et al., 2001)	Continuous	PLS-SEM Analysis (Lowry & Gaskin, 2014)
	Covin & Slevin, (1991); Kuratko, Hornsby et al., (2004).		Distinctive organisational resources and entrepreneurial competencies of African companies coupled with a favourable entrepreneurial ecosystem positively influence the degree of corporate entrepreneurial behaviour within the South African banking industry.	**Resource Orientation:** Stevenson scale (Brown et al., 2001): Cronbach alpha of 0.68 (Brown et al., 2001)	Continuous	PLS-SEM Analysis (Lowry & Gaskin, 2014)

Determinants of intrapreneurial performance within the banking industry in South Africa						
Aims of research	**Literature Review**	**Primary Hypotheses**	**Secondary Hypotheses**	**Research Scale**	**Type of Data**	**Analysis**
To determine whether corporate entrepreneurship is a multi-dimensional construct	Covin & Slevin, (1991); Zahra, (1991); Zahra, (1993).	Environmental antecedents positively influence levels of corporate entrepreneurship	Dynamic business environments positively influence corporate entrepreneurial activity within South African banking firms when other internal conditions are conducive to entrepreneurial behaviour.	**Environmental Dynamism:** Scale (Miller & Friesen, 1984): Cronbach alpha of 0.72 (Heavey et al., 2009)	Continuous	PLS-SEM Analysis (Lowry & Gaskin, 2014)
			Hostile business environments positively influence corporate entrepreneurial activity within South African banking firms when other internal conditions are conducive to entrepreneurial behaviour.	**Environmental Hostility**: Scale (Miller & Friesen, 1984): Cronbach alpha of 0.72 (Zahra, 1991)		
To determine whether an enabling entrepreneurial organisational architecture moderates the degree of influence employee-level antecedents have on corporate entrepreneurship levels within the South African banking industry	Bandura (2001) Reuber & Fischer (1999) Ireland et al. (2009) Kuratko, Hornsby et al. (2004)	An enabling entrepreneurial organisational architecture moderates the degree of influence employee-level antecedents have on corporate entrepreneurship levels within the South African banking industry		Individual level antecedents: Aggregate scale Organisational level antecedents: Aggregate scale **Corporate Entrepreneurship (CE):** CE Index (Miller & Friesen, 1982): Cronbach alpha of 0.75 (Zahra & Covin, 1995)	Continuous	Moderation analysis: PLS-SEM Analysis (Lowry & Gaskin, 2014)

Determinants of intrapreneurial performance within the banking industry in South Africa						
Aims of research	**Literature Review**	**Primary Hypotheses**	**Secondary Hypotheses**	**Research Scale**	**Type of Data**	**Analysis**
To determine whether the entrepreneurial momentum of a firm moderates the degree of positive influence environmental antecedents have on corporate entrepreneurship levels within the South African banking industry	Zahra 1993 Zahra 1991 Ireland et al. (2009) Kuratko, Hornsby et al. (2004)	The entrepreneurial momentum of a firm moderates the degree of positive influence environmental antecedents have on corporate entrepreneurship levels within the South African banking industry		**Corporate Entrepreneurship (CE):** CE Index (Miller & Friesen, 1982): Cronbach alpha of 0.75 (Zahra & Covin, 1995) **Environmental Dynamism:** Scale (Miller & Friesen, 1983): Cronbach alpha of 0.72 (Heavey et al., 2009) **Environmental Hostility:** Scale (Miller & Friesen, 1984): Cronbach alpha of 0.72 (Zahra, 1991) **Growth Orientation:** Stevenson scale (Brown et al., 2001): Cronbach alpha of 0.71 (Brown et al., 2001)	Continuous	Moderation analysis: PLS-SEM Analysis (Lowry & Gaskin, 2014)

Determinants of intrapreneurial performance within the banking industry in South Africa						
Aims of research	**Literature Review**	**Primary Hypotheses**	**Secondary Hypotheses**	**Research Scale**	**Type of Data**	**Analysis**
To determine whether environmental dynamics and hostility moderate the degree of influence organisational-level antecedents have on corporate entrepreneurship levels within the South African banking industry	Covin & Slevin, (1991); Zahra, (1993); Kuratko & Hornsby, (1998); Guth & Ginsberg, (1990); Kuratko, Hornsby et al., (2004); Ireland et al., (2009); Covin & Slevin, (1991); Ling et al. (2008); Urban & Govender, (2018).]	Environmental dynamics and hostility moderate the degree of influence that organisational-level antecedents have on levels of corporate entrepreneurial behaviour within the South African banking industry due to the precipitating effect of environmental forces acting upon an intrapreneurial ecosystem.		**Environmental Dynamism:** Scale (Miller & Friesen, 1983): Cronbach alpha of 0.72 (Heavey et al., 2009) Environmental Hostility: Scale (Miller & Friesen, 1984): Cronbach alpha of 0.72 (Zahra, 1991) **Corporate Entrepreneurship (CE):** CE Index (Miller & Friesen, 1982): Cronbach alpha of 0.75 (Zahra & Covin, 1995) Organisational level antecedents: Aggregate scale	Continuous	Moderation analysis: PLS-SEM Analysis (Lowry & Gaskin, 2014)

Determinants of intrapreneurial performance within the banking industry in South Africa						
Aims of research	**Literature Review**	**Primary Hypotheses**	**Secondary Hypotheses**	**Research Scale**	**Type of Data**	**Analysis**
To determine whether environmental dynamics and hostility moderate the degree of influence individual-level antecedents have on corporate entrepreneurship levels within the South African banking industry	Covin & Slevin, (1991); Zahra, (1993); Kuratko & Hornsby, (1998); Shane et al. (2003); Ardichvili et al., (2003); Adler & Kwon, (2002); Urban & Wood, (2015); Urban & Govender, (2018).]	Environmental dynamics and hostility moderate the degree of influence that individual-level antecedents have on levels of corporate entrepreneurial behaviour within the South African Banking industry due to the precipitating effect of environmental forces acting upon an intrapreneurial ecosystem		**Environmental Dynamism:** Scale (Miller & Friesen, 1983): Cronbach alpha of 0.72 (Heavey et al., 2009) Environmental Hostility: Scale (Miller & Friesen, 1984): Cronbach alpha of 0.72 (Zahra, 1991) **Corporate Entrepreneurship (CE):** CE Index (Miller & Friesen, 1982): Cronbach alpha of 0.75 (Zahra & Covin, 1995) Individual level antecedents: Aggregate scale	Continuous	Moderation analysis: PLS-SEM Analysis (Lowry & Gaskin, 2014)

APPENDIX B: RESEARCH SURVEY

2020 PhD Research Survey: Wits Business School Survey Questionnaire



University of the Witwatersrand,
Wits Business School
011 717 3000

Dear Sir/Madam

My name is Thanusha Govender and I am currently a PhD scholar at the University of the Witwatersrand Business School in Johannesburg.

As part of my doctoral studies, I must undertake a research project that enriches and significantly contributes to the development of new knowledge. I have chosen to focus my studies in the domain of corporate entrepreneurship, which I have untaken under the supervision of Professor Boris Urban, an acclaimed key opinion leader in this field of study. The study aims to develop a holistic and comprehensive appreciation of the dynamic nature of corporate entrepreneurship within Banking Groups in South Africa and looks to narrow the research participants to managerial employees due to the influence various levels of leadership have on the ability for corporate entrepreneurial performance to thrive.

As part of this research project, I would like to invite you to take part in answering a survey and thank you in advance for your time. The survey will take you approximately 20-30 minutes to complete.

It is completely voluntary and please be assured that all respondent information and their corresponding responses will remain confidential and anonymous. There will be no personal costs to you if you participate in this project and you will not receive any direct benefits from participation but there are equally, no

disadvantages or penalties if you do not choose to participate. Please note that you can chose to withdraw from the study at any stage during the research process, free of any obligations.

This research survey is a quantitative questionnaire, and all insights and deductions will be derived through the mining and modelling of the data collected from all the surveys that have been completed.

The data insights will be utilised to determine the influencing power of a range of antecedents on corporate entrepreneurial performance within banking incumbents in South Africa. Equally the study further aims to create a predictive implementation model for entrepreneurial transformation of financial service incumbents.

The data collected from this research project will be stored securely and will be kept for 5 years. All findings at the conclusion of this study will be distributed to all interested parties and the full thesis will be available on wiredspace.wits.ac.za.

If you have any questions while completing the survey or afterwards regarding the research project, please free to contact me directly @ 515210@students.wits.ac.za or my supervisor @ boris.urban@wits.ac.za. If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za.

Please note that by clicking on the submit button, you agree to participate in this research survey.

Kind Regards

Thanusha Govender

Section 1

1. Entrepreneurial Mindset							
Thinking of yourself, how likely or unlikely are you to do the following:	***Very untrue of me***	***Untrue of me***	***Somewhat untrue of me***	***Neutral***	***Somewhat true of me***	***True of me***	***Very true of me***
1.1. Goal Orientation							
1.1.1. I often define goals for myself							
1.1.2. I understand how the accomplishment of a task relates to my goals							
1.1.3. I set specific goals before I begin a task							
1.1.4. I ask myself how well I have accomplished my goals once I have finished							
1.1.5. When performing a task, I frequently assess my progress against my objectives							

Thinking of yourself, how likely or unlikely are you to do the following:	***Very untrue of me***	***Untrue of me***	***Somewhat untrue of me***	***Neutral***	***Somewhat true of me***	***True of me***	***Very true of me***
1.2. Metacognitive Knowledge							
1.2.1. I think of several ways to solve a problem and choose the best one							
1.2.2. I challenge my own assumptions about a task before I begin							
1.2.3. I think about how others may react to my actions							
1.2.4. I perform best when I already have knowledge of the task							
1.2.5. I create my own examples to make information more meaningful							
1.2.6. I try to use strategies that have worked in the past							
1.2.7. I ask myself questions about the task before I begin							
1.2.8. I try to translate new information into my own words							

Thinking of yourself, how likely or unlikely are you to do the following:	***Very untrue of me***	***Untrue of me***	***Somewhat untrue of me***	***Neutral***	***Somewhat true of me***	***True of me***	***Very true of me***
1.2.9. I try to break my problems down into small components							
1.2.10. I focus on the meaning and significance of new information							

Thinking of yourself, how likely or unlikely are you to do the following:	***Very untrue of me***	***Untrue of me***	***Somewhat untrue of me***	***Neutral***	***Somewhat true of me***	***True of me***	***Very true of me***
1.3. Metacognitive Experience							
1.3.1. I use different strategies depending on the situation							
1.3.2. I organise my time to best accomplish my goals							
1.3.3. I am good at organising information							
1.3.4. I know what kind of information is most important to consider when faced with a problem							
1.3.5. I consciously focus my attention on important information							
1.3.6. I depend on my intuition to help me formulate strategies							

Thinking of yourself, how likely or unlikely are you to do the following:	***Very untrue of me***	***Untrue of me***	***Somewhat untrue of me***	***Neutral***	***Somewhat true of me***	***True of me***	***Very true of me***
1.4. Metacognitive Choice							
1.4.1. I ask myself if I have considered all the options when solving a problem							
1.4.2. I ask myself if there was an easier way to do things after I finished a task							
1.4.3. I ask myself if I have considered all the options after I solve a problem							
1.4.4. I re-evaluate my assumptions when I get confused							
1.4.5. I ask myself if I have learned as much as I could have when I finished the task							

Thinking of yourself, how likely or unlikely are you to do the following:	***Very untrue of me***	***Untrue of me***	***Somewhat untrue of me***	***Neutral***	***Somewhat true of me***	***True of me***	***Very true of me***
1.5. Monitoring							
1.5.1. I periodically review to help me understand important relationships							
1.5.2. I stop and go back over information that is not clear							
1.5.3. I am aware of what strategies I use when engaged in a given task							
1.5.4. I find myself analysing the usefulness of a given strategy while engaged in a given task							
1.5.5. I find myself pausing regularly to check my comprehension of the problem or situation at hand							
1.5.6. I ask myself questions about how well I am doing while I am performing a novel task							

Section 2

2. Corporate Entrepreneurship							
Thinking of your company, how true or untrue are the following statements	***Very untrue***	***Untrue***	***Slightly untrue***	***Neutral***	***Slightly true***	***True***	***Very true***
2.1. Our company has introduced many new products and services over the past three years							
2.2. Our company has made many dramatic changes in the mix of its products and services over the last three years							
2.3. Our company has emphasised creating major innovations in its products and services over the last three years							
2.4. Over the past three years, our company has shown a strong proclivity for high-risk projects (with chances of very high return)							
2.5. Our company has emphasised taking bold, wide-ranging actions in positioning itself and its products (service) over the past three years							
2.6. Our company has shown a strong commitment to research and development (R&D), technological leadership and innovation							
2.7. Our company has followed strategies that allow it to exploit opportunities in its external environment							

Section 3

3. Leadership							
Thinking of your manager, how frequently does the following statement occur	***Never***	***Rarely***	***Occasion-ally***	***Sometimes***	***Frequently***	***Usually***	***Every time***
3.1. Inspirational							
3.1.1. Feel proud of him/her							
3.1.2. Goes beyond self-interest							
3.1.3. Has my respect							
3.1.4. Displays power and confidence							
3.1.5. Talks about values							
3.1.6. Models ethical standards							
3.1.7. Emphasises the collective mission							
3.1.8. Talks optimistically							
3.1.9. Expresses confidence							
3.1.10. Arouses awareness about important issues							

Thinking of your manager, how frequently does the following statement occur	***Never***	***Rarely***	***Occasion-ally***	***Sometimes***	***Frequently***	***Usually***	***Every time***
3.2. Intellectual Stimulation							
3.2.1. Re-examines assumptions							
3.2.2. Seeks different / alternative views							
3.2.3. Suggests new ways							
3.2.4. Suggest different angles							

Thinking of your manager, how frequently does the following statement occur	***Never***	***Rarely***	***Occasion-ally***	***Sometimes***	***Frequently***	***Usually***	***Every time***
3.3. Individual Consideration							
3.3.1. Individualises attention							
3.3.2. Focuses on your strengths							
3.3.3. Teaches and coaches							

Section 4

4. Creativity							
Thinking of yourself, how likely or unlikely is it for you to:	***Very untrue of me***	***Untrue of me***	***Somewhat untrue of me***	***Neutral***	***Somewhat true of me***	***True of me***	***Very true of me***
4.1. Suggest new ways to achieve goals and objectives							
4.2. Develop new and practical ideas to improve performance							
4.3. Seek out new technologies, processes, techniques and/or product ideas							
4.4. Suggest new ways to increase quality							
4.5. Develop creative solutions to problems							
4.6. To not be afraid to take risks							
4.7. Promote and champion ideas to others							
4.8. Exhibit creativity on the job when given the opportunity to							
4.9. Develop adequate plans and schedules for the implementation of new ideas							
4.10. Frequently develop new and innovative ideas							

Section 5

5. General Self-Efficacy							
How true are the following statements about yourself	***Very untrue of me***	***Untrue of me***	***Somewhat untrue of me***	***Neutral***	***Somewhat true of me***	***True of me***	***Very true of me***
5.1. I can always manage to solve difficult problems if I try hard enough							
5.2. It is easy for me to stick to my aims and accomplish my goals							
5.3. I am confident that I could deal efficiently with unexpected events							
5.4. Thanks to my resourcefulness, I know how to handle unforeseen situations							
5.5. I can solve most problems if I invest the necessary effort							
5.6. I can remain calm when facing my difficulties because I can rely on my coping abilities							
5.7. When I am confronted with a problem, I can usually find several solutions							
5.8. I can usually handle whatever comes my way							

Section 6

6. Locus of Control							
How much do you agree with the following statements relating to yourself?	***Strongly Disagree***	***Disagree***	***Slightly Disagree***	***Neither Agree nor Disagree***	***Slightly Agree***	***Agree***	***Strongly Agree***
6.1. To a great extent my life is controlled by accidental happenings							
6.2. Often there is no chance of protecting my personal interests from bad luck happenings							
6.3. When I get what I want, it is usually because I am lucky							
6.4. I have often found that what is going to happen will happen							
6.5. Whether or not I get into a car accident is mostly a matter of luck							
6.6. It's not always wise for me to plan too far ahead because many things turn out to be a matter of good and bad fortune							
6.7. Whether or not I get to be a leader depends on whether I am lucky enough to be in the right place at the right time							
6.8. It's mainly a matter of fate whether or not I have a few friends or many friends							

Section 7

7. Motives							
Do you agree/disagree with the following statements relating to yourself	***Strongly Disagree***	***Disagree***	***Slightly Disagree***	***Neither Agree nor Disagree***	***Slightly Agree***	***Agree***	***Strongly Agree***
7.1. I often set goals that are very difficult to reach							
7.2. I feel any job done should be done thoroughly, if you do it at all							
7.3. Even when I feel ill, I will continue working if it is important							
7.4. I enjoy challenging work							
7.5. I continuously look for ways of doing things better and faster							
7.6. I am somewhat of a perfectionist and like to have things done just right							
7.7. It is important to me to seek feedback on how well I am performing							
7.8. I would work just as hard whether or not I had to earn a living							
7.9. I will not be satisfied until I am the best in my field of work							
7.10. I enjoy competing with others							

Section 8

8. Social Models							
In relation to your close social circles, do you agree or disagree with the following statements?	***Strongly Disagree***	***Disagree***	***Slightly Disagree***	***Neither Agree nor Disagree***	***Slightly Agree***	***Agree***	***Strongly Agree***
8.1. Do you have an immediate family member who has started a business?							
8.2. Do you have an immediate family member who is a successful entrepreneur?							
8.3. Do you have a close friend that has started a business?							
8.4. Do you have a close friend who is a successful entrepreneur?							
8.5. Do you know many people whom have started their own business?							

Section 9

9. Entrepreneurial Strategy Making							
How much do you agree/ disagree with the following statements about your organisation's decision making	***Strongly Disagree***	***Disagree***	***Slightly Disagree***	***Neither Agree nor Disagree***	***Slightly Agree***	***Agree***	***Strongly Agree***
9.1. The top managers of my organisation favour experimentation and original approaches to problem solving							
9.2. The top managers of my organisation prefer to study a problem thoroughly before deploying resource to solve it							
9.3. My company prefers to design its own unique processes and services							
9.4. My firm is quick to seize opportunities that we think will give us a good payoff							
9.5. When confronting with decision-making situations involving uncertainty, my firm typically adopts a cautious, "wait-and-see" posture in order to minimise the probability of making costly decisions							

Section 10

10. External Context							
How much do you agree/ disagree with the following statements about your operating environment	***Strongly Disagree***	***Disagree***	***Slightly Disagree***	***Neither Agree nor Disagree***	***Slightly Agree***	***Agree***	***Strongly Agree***
10.1. Dynamism							
10.1.1. The rate of products obsolescence in our industry is high							
10.1.2. In our industry, processes and services change often and in major ways							
10.1.3. Our firm must change its marketing practices frequently							

How much do you agree/ disagree with the following statements about your operating environment	***Strongly Disagree***	***Disagree***	***Slightly Disagree***	***Neither Agree nor Disagree***	***Slightly Agree***	***Agree***	***Strongly Agree***
10.2. Hostility							
10.2.1. In our industry, actions of competitors are unpredictable							
10.2.2. In our industry, demand and customers tastes are unpredictable							
10.2.3. Declining demand of products are a major challenge in our industry							
10.2.4. Tough price competition is a major challenge in our industry							
10.2.5. Government interference is a major challenge in our industry							
10.2.6. Our business environment causes a great deal of threat to the survival of our company							

Section 11

11. Organisational Architecture											
Indicate your inclination to agree with either statement in relation to your organisation											
11.1. Resource Orientation											
11.1.1. Since we do not need resources to commence the pursuit of an opportunity, our commitment of resources may be in stages.	1	2	3	4	5	6	7	8	9	10	Since our objective is to use our resources, we will usually invest heavily and rapidly.
11.1.2. All we need from resources is the ability to use it.	1	2	3	4	5	6	7	8	9	10	We prefer to totally control and own the resources we use.
11.1.3. We like to employ resources that we borrow, partner or rent.	1	2	3	4	5	6	7	8	9	10	We prefer to only use our own resources in our ventures.
11.1.4. In exploiting opportunities, having the idea is more important than just having the money.	1	2	3	4	5	6	7	8	9	10	In exploiting opportunities, access to money is more important than just having the idea.

Indicate your inclination to agree with either statement in relation to your organisation											
11.2. Management Structure											
11.2.1. We prefer tight control of funds and operations by means of sophisticated control and information systems.	1	2	3	4	5	6	7	8	9	10	We prefer loose, informal control. There is a dependence on informal relationships.
11.2.2. We strongly emphasise getting things done by following formal processes and procedures.	1	2	3	4	5	6	7	8	9	10	We strongly emphasise getting things done even is this means disregarding formal procedure.
11.2.3. We strongly emphasise holding to tried and true management principles and industry norms.	1	2	3	4	5	6	7	8	9	10	We strongly emphasise adapting freely to changing circumstances without much concern for past practices.
11.2.4. There is a strong insistence on a uniform management style throughout the firm.	1	2	3	4	5	6	7	8	9	10	Managers' operating styles are allowed to range freely from very formal to very informal.
11.2.5. There is a strong emphasis on getting employees to adhere closely to their formal job descriptions.	1	2	3	4	5	6	7	8	9	10	There is a strong tendency to let the personality of the individual dictate proper job behaviour.

Indicate your inclination to agree with either statement in relation to your organisation											
11.3. Reward Philosophy											
11.3.1. Our employees are evaluated and compensated based on their responsibilities.	1	2	3	4	5	6	7	8	9	10	Our employees are evaluated and compensated based on the value they add to the firm.
11.3.2. Our employees are usually rewarded by promotion and annual raises.	1	2	3	4	5	6	7	8	9	10	We try to compensate our employees by devising ways so they can benefit from the increased value of the firm.
11.3.3. An employee's standing is based on the amount of responsibility he or she has.	1	2	3	4	5	6	7	8	9	10	An employee's standing is based on the value he or she adds.

Indicate your inclination to agree with either statement in relation to your organisation											
11.4. Entrepreneurial Culture											
11.4.1. We have many more promising ideas than we have time and the resources to pursue.	1	2	3	4	5	6	7	8	9	10	We find it difficult to find a sufficient number of promising ideas to utilise all our resources.
11.4.2. Changes in the society-at-large often give us ideas for new products and services.	1	2	3	4	5	6	7	8	9	10	Changes in the society-at-large seldom lead to commercially promising ideas for our firm.
11.4.3. We never experience a lack of ideas that we can convert into profitable products and services.	1	2	3	4	5	6	7	8	9	10	It is difficult for our firm to find ideas that can be converted into profitable products/services.

Indicate your inclination to agree with either statement in relation to your organisation											
11.5. Growth Orientation											
11.5.1. It is generally known throughout the firm that growth is our top objective.	1	2	3	4	5	6	7	8	9	10	Growth is not necessarily our top objective. Long term survival may be at least as important.
11.5.2. It is generally known throughout the firm that our intention is to grow as big and as fast as possible.	1	2	3	4	5	6	7	8	9	10	It is general known throughout the firm that steady and sure growth is the best way to expand.

Respondent Profile					
		Team Leader	***Management***	***Senior Management***	***Top Management***
1	What corporate grade are you in your organisation				
2	Gender				
3	Country of occupation				

APPENDIX C: ETHICS CLEARANCE LETTER

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 Govender

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER: H20/05/10**
PROJECT TITLE	Determinants of intrapreneurial performance within the banking industry in South Africa
INVESTIGATOR(S)	Mrs T Govender
SCHOOL/DEPARTMENT	Wits Business School/
DATE CONSIDERED	22 May 2020
DECISION OF THE COMMITTEE	Approved Risk Level: Minimal
EXPIRY DATE	28 September 2023

DATE 29 September 2020 **CHAIRPERSON** J Knight

(Professor J Knight)

cc: Supervisor : Professor B Urban

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 10th Floor, Senate House, University. Unreported changes to the application may invalidate the clearance given by the HREC (Non-Medical)

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to completion of a yearly progress report.**

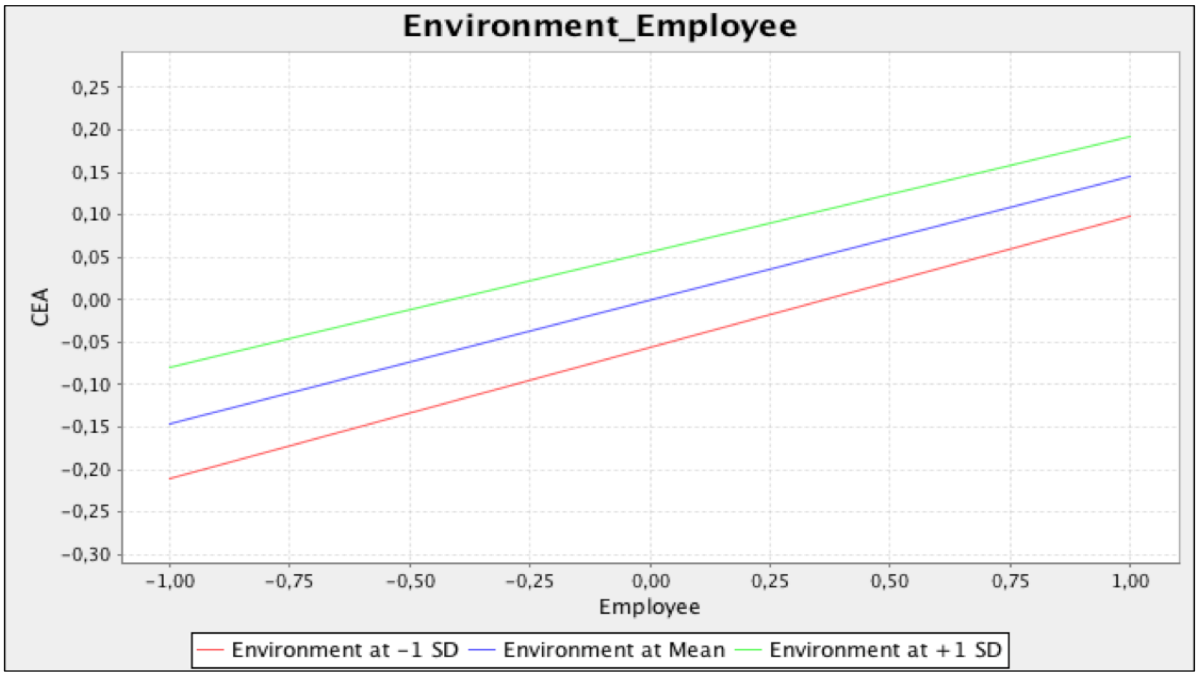
Thanusha Govender

Signature **Date** 30 / 09 / 20

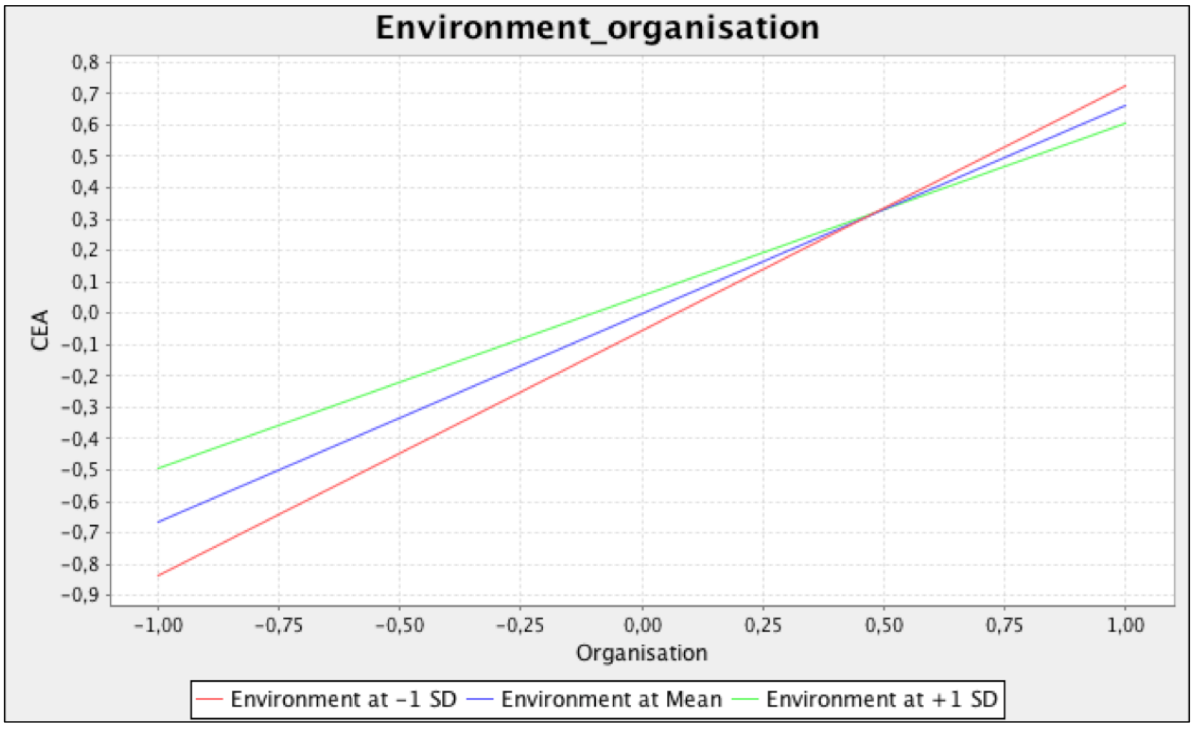
PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

APPENDIX D: MODERATION STATISTICAL ANALYSIS

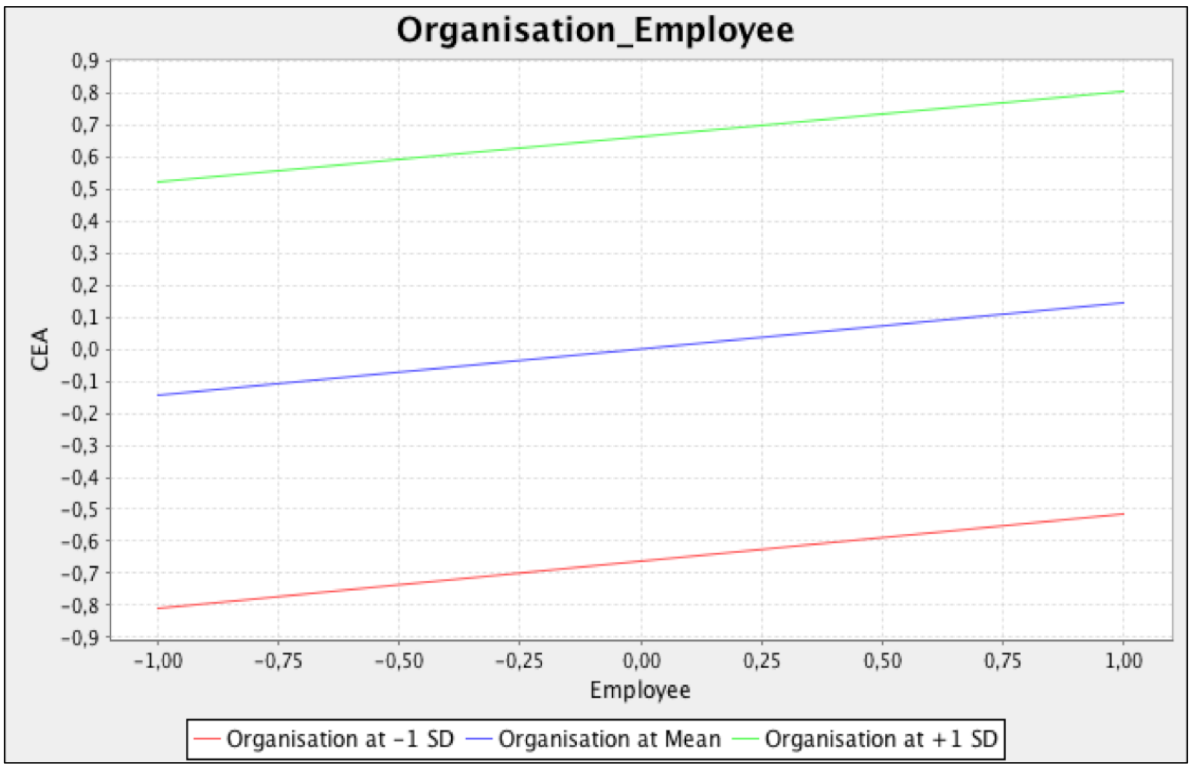
Graph 1: Moderation effect of environment on employee and corporate entrepreneurial activity



Graph 2: Moderation effect of environment on organisation and corporate entrepreneurial activity



Graph 3: Moderation effect of organisation on employee and corporate entrepreneurial activity



Graph 4: Moderation effect of growth on environment and corporate entrepreneurial activity

