Gordon Institute
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" Exploring the Influence of Indigenous Knowledge Systems on Entrepreneurial Innovation: An Emerging Market Perspectives in the context of South African Women Entrepreneurs."

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A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration.

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i. Abstract

Orientation: This study explores the intersection of indigenous knowledge systems (IKS) and entrepreneurial innovation, focusing on South African women entrepreneurs. It examines how indigenous knowledge serves as a strategic resource in fostering innovation in emerging market settings.

Research Purpose: The study investigates how women entrepreneurs in South Africa leverage indigenous knowledge to drive entrepreneurial innovation. It seeks to understand how these knowledge systems influence business practices, opportunity recognition, and innovation, particularly in environments where access to formal education and entrepreneurial resources is limited.

Motivation for the Study: While entrepreneurship is widely acknowledged as a driver of economic development, mainstream literature often marginalises indigenous knowledge as an informal or peripheral factor. This study challenges that perspective by positioning IKS as a valuable asset in entrepreneurial innovation. Additionally, women's entrepreneurial innovation remains underexplored in emerging markets, necessitating a deeper investigation into the mechanisms enabling their success.

Research Approach/Design and Method: The study employs a qualitative research design, using semi-structured interviews with South African women entrepreneurs. Thematic analysis is used to identify key themes in the application of indigenous knowledge to business innovation. Effectuation theory serves as the theoretical framework, highlighting the role of existing knowledge, social networks, and adaptive decision-making in entrepreneurial innovation.

Main Findings: Indigenous knowledge is a crucial enabler of innovation, providing women entrepreneurs with practical skills, market insights, and adaptive strategies that enhance business sustainability. The study identifies three key themes: (1) the role of inherited knowledge in shaping entrepreneurial practices, (2) adaptive business strategies and innovation driven by indigenous knowledge, and (3) the influence of socio-cultural dynamics on entrepreneurial decision-making.

Practical/Managerial Implications: Recognising indigenous knowledge as a formal entrepreneurial resource can enhance business support frameworks, policy interventions, and entrepreneurship educational curricula. Policymakers and business development organisations should integrate indigenous knowledge into entrepreneurial training, to drive innovation and support programmes in attempts to foster economic growth.

Contribution/Value-Add: The study contributes to entrepreneurial innovation literature by demonstrating how non-Western knowledge systems drive innovation in emerging markets. It expands effectuation theory by highlighting the role of indigenous knowledge in resource-limited entrepreneurial ecosystems. The findings offer practical insights for policymakers, educators, and business support institutions in fostering sustainable, locally driven innovation.

Keywords: Indigenous knowledge, entrepreneurial innovation, women entrepreneurs, emerging markets, effectuation theory

ii. Plagiarism Declaration

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

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The name of the student and the date should follow the declaration.

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Chapter 1: Introduction to the Research Problem

1.1. Background

Entrepreneurship and innovation are recognised as key drivers of economic growth and social progress (Content et al., 2020; Kraus et al., 2021; Pfotenhauer et al., 2019) . Their relationship has been widely studied, with early contributions from Joseph Schumpeter forming the basis of modern entrepreneurship theories (Guerrero & Siegel, 2024). Entrepreneurial innovation not only contributes to economic change (Pindado et al., 2023) and business growth (Guerrero & Siegel, 2024) but also plays a crucial role in reducing poverty, particularly in developing economies where formal employment opportunities are limited (Foss et al., 2019).

However, even though Southern African forms part of the emerging economies (Zhao et al., 2022), its context contrasts the above statement. Many medium-sized enterprises (MSMEs)struggle to survive, with two-thirds failing within five years (United Nations, 2023). Youth unemployment remains high (Statistics South Africa, 2025), and approximately 70% of entrepreneurs operate in the informal sector (United Nations, 2023). The latest Global Entrepreneurship Monitor (GEM) report on South Africa highlights a worrying decline in entrepreneurial activity, driven by economic instability and low business confidence, further reinforcing the need for innovation-driven solutions (Global Entrepreneurship Monitor, 2024a).

This study explores the entrepreneurial innovation within an emerging economy context of South African Women Entrepreneurs. It explores how innovation can support entrepreneurship in challenging environments, focusing on antecedents that drive entrepreneurial innovation in such contexts. Given the importance of knowledge in the innovation and entrepreneurship process (Kraus et al., 2021), the study examines the role of indigenous knowledge systems, which remain an underexplored yet valuable resource for innovation in developing economies (Morales et al., 2023; Salmon et al., 2023). In South Africa, entrepreneurship inspired by indigenous methods can tackle youth unemployment while promoting sustainability and culture (University of the Western Cape, 2023). A practical example is Dr Tapiwa Guzha's Cape Town ice cream venture, which supports farmers, attracts eco-tourists, and preserves heritage (University of the Western Cape, 2023).

Additionally, the study considers the context of women entrepreneurs. The GEM 2024 Women's Entrepreneurship Report highlights that Countries such as China, Colombia, Ecuador, Lithuania, and Thailand have achieved gender parity or exceeded male entrepreneurship rates (Global Entrepreneurship Monitor, 2024b). These countries have further demonstrated demonstrating the potential impact of women-led businesses (Global Entrepreneurship Monitor, 2024b). Applying this perspective to South Africa offers insights into the opportunities and barriers women entrepreneurs face in driving innovation.

1.2. Purpose Statement

The purpose of this qualitative study is to explore entrepreneurial innovation in an emerging market context, exploring methods that are used to innovate in such contexts. Even though women's entrepreneurship has been widely recognised as a critical driver of economic development, persistent challenges such as limited access to formal education hinder their ability to innovate (Guerrero & Siegel, 2024). The study further seeks to understand how other knowledge sources, such as indigenous knowledge, can be used as a strategic resource in driving entrepreneurial innovation for women entrepreneurs in resource-constrained settings, particularly in South Africa. The study secondly study seeks to investigate how women entrepreneurs leverage indigenous knowledge to develop innovative business solutions in an environment where traditional Western entrepreneurial models often fail to address localised economic and social conditions.

Indigenous knowledge, which has historically been marginalised in mainstream entrepreneurship research, plays a crucial role in various economies where women operate within alternative knowledge systems (Padilla-Meléndez, Ciruela-Lorenzo, et al., 2022; Padilla-Meléndez, Plaza-Angulo, et al., 2022). The study looks to effectuation theory by Sarasvathy (2001), which challenges the traditional causation-based view of entrepreneurship by arguing that entrepreneurs often act under conditions of uncertainty using available means, partnerships, and iterative learning. Applying this theory to women entrepreneurs in developing contexts, the study will explore how indigenous knowledge interacts with entrepreneurial decision-making and opportunity recognition.

According to recent studies, women's entrepreneurship contributes significantly to economic development, but barriers such as limited access to formal education and funding still exist (Guerrero & Siegel, 2024). The study thus explores how women entrepreneurs leverage other forms of knowledge such as traditional knowledge, what conditions enable the translation of this knowledge into viable business ventures, and how these practices contribute to broader economic inclusion. Further, the study seeks to understand how indigenous knowledge-driven innovation can be integrated into formal entrepreneurial ecosystems to enhance competitiveness, and scalability. An additional aim is to explore policies and support mechanisms that can empower entrepreneurs to thrive within both traditional and modern entrepreneurial and economic frameworks.

1.3. Research Problem

One of the key resources leading to entrepreneurial innovation is knowledge (Kraus et al., 2021). Despite the importance of knowledge, access to educational resources remains highly uneven, creating significant barriers for women entrepreneurs seeking to innovate (Bruton et al., 2023). In South Africa, where there is persistent inequality and poverty, with a majority of the population lacking access to quality education and formal skills (Mlachila & Moeletsi, 2019). This imposes a challenge on acquiring a key aspect required in the entrepreneurial innovation process (Pindado et al., 2023).

Interventions that have been perceived to close this gap, are based on Westernised principles (Bhatt et al., 2024; Bruton et al., 2023), often failing to provide sustainable solutions, as they are costly, assumption-based, and lack operational relevance in addressing the specific needs of marginalised communities (Li et al., 2019). Gaps in policy frameworks for supporting innovative entrepreneurship remain unresolved, raising questions about the conditions necessary for fostering a thriving innovation ecosystem (Bradley et al., 2021). This presents a need on how those with barriers to access to quality education and have limited access to knowledge resources, can still innovate (Allard & Williams, 2020). Additionally, the failure of these interventions highlights the need for more context-specific approaches that leverage existing local knowledge as a foundation for economic development.

Studies have indicated that particularly within the Western (Bruton et al., 2023) and African context there is no direct link between formal education and the growth of entrepreneurial innovation (Allard & Williams, 2020).Shepherd et al. (2019) calls for a focus on learning processes, content, and how these manifest into entrepreneurial actions in uncertain and dynamic environments. (Shepherd et al., 2019).

Despite the increasing acknowledgment of alternative forms of innovation, mainstream entrepreneurship literature still marginalises indigenous knowledge and indigenous entrepreneurial strategies, treating them as informal, peripheral, or survivalist (Morales et al., 2023). While innovation is often associated with technological advancements and formal research institutions, emerging evidence suggests that indigenous knowledge and community-driven innovation play a significant role in shaping entrepreneurial ecosystems in developing countries (Zhang et al., 2023).

With the focus on women entrepreneurs, the lack of research on women's entrepreneurship processes in resource-constrained environments is particularly concerning (Atarah et al., 2023). Women play a significant role in informal economies, yet their contributions to entrepreneurial innovation are often overlooked or undervalued (Brush et al., 2022). Existing studies have highlighted several structural barriers that limit women's ability to scale their businesses (Foss et al., 2019; Foss & Klein, 2020; Guerrero & Siegel, 2024). Despite these constraints, many women entrepreneurs have developed resilient, adaptive strategies to sustain their businesses, drawing on various resources (Kakeesh, 2024). Shepherd et al. (2019) calls for Entrepreneurial innovation frameworks in Africa remain largely modelled on Western paradigms (Williams et al., 2022), often failing to acknowledge how women in resource-constrained environments drive innovation through non-traditional pathways (Atarah et al., 2023).

1.4. Research Aim

The primary aim of this study is to explore how women entrepreneurs in South Africa leverage indigenous knowledge to drive entrepreneurial innovation. The study aims to further understand the role and use of indigenous knowledge in entrepreneurial innovation and how it manifests into entrepreneurial ventures. The study also delivers into understanding the unique challenges and opportunities faced by women entrepreneurs in South Africa when applying indigenous knowledge to their entrepreneurial innovative practices. Further, the study aims to contribute to an inclusive understanding of entrepreneurial innovation by highlighting non-Western perspectives and practices and aims to develop insights that can inform policy and practice in supporting women entrepreneurs and fostering innovation in developing economies. The study also aims to address the gaps in literature, related to the innovative practices of women entrepreneurs in emerging markets, particularly relating to the concepts and learning processes that drive such innovation.

1.5. Significance of study

1.5.1. Academic

This study makes a critical academic contribution by examining alternative sources of innovation beyond conventional Western paradigms. It challenges the prevailing view that often categorises non-Western entrepreneurial ecosystems as informal, peripheral, or survivalist (Banerjee, 2022; Bruton et al., 2022). Drawing from entrepreneurship literature, the study highlights how cultural values and traditional knowledge systems actively shape entrepreneurial activities (Murphy et al., 2020). Specifically, it explores how women entrepreneurs mobilise indigenous knowledge as a strategic resource for innovation in contexts where access to formal business training is limited.

This research also engages with broader debates on knowledge hierarchies and the decolonisation of business theories (Banerjee, 2022). While mainstream scholarship often treats indigenous knowledge as secondary, this study positions it as one of the fundamental drivers of innovation and business strategy in emerging markets (Doucette et al., 2021; Zhang et al., 2023). By offering an alternative to Western-centric models, the research contributes to an inclusive theoretical framework that integrates diverse epistemologies, ensuring that entrepreneurship scholarship reflects the realities of multiple economic and cultural contexts (Banerjee, 2022). This study further examines the insights that can emerge from this context and their potential to reshape Western entrepreneurial practices, theories and entrepreneurship scholarship more broadly (Bruton et al., 2024). Rather than perpetuating a one-directional flow of knowledge consumption, the study critically explores what the West can learn from these perspectives (Bruton et al., 2024; McDonald & Eisenhardt, 2020).

Further, to entrepreneurship theory, this study addresses a significant gender gap in entrepreneurship research. Women's contributions to innovation entrepreneurship are often undervalued (Foss et al., 2019). Much of the existing research on women's entrepreneurship focuses on structural barriers such as funding constraints and social norms but provides limited insight into how women innovate and the processes involved (Atarah et al., 2023; Brush et al., 2022). This explores such processes and innovations, especially in understudied contexts

This study extends the application of effectuation theory to the context of women-led entrepreneurship. Effectuation theory challenges traditional causation-based models that assume predictable markets and structured business planning (Sarasvathy, 2001).

Instead it proposes that entrepreneurs create opportunities by leveraging available resources, building strategic partnerships, and adapting flexibly to uncertainty (Sarasvathy, 2001). While effectuation has been widely studied in Western entrepreneurship contexts, its relevance to women entrepreneurs using indigenous knowledge to drive innovation remains underexplored. This study examines how indigenous knowledge serves as an entrepreneurial resource within effectuation's bird-in-hand principle, illustrating how women entrepreneurs use inherited knowledge, cultural wisdom, and local expertise to build and sustain their businesses.

The study also builds upon and extends the literature on entrepreneurial effectuation, to explore how highlights how indigenous resources and values can be both leveraged and reclaimed throughout this process. It further illustrates how existing resources and capabilities can be used for various purposes and also how unrecognised, dispossessed or dormant resources may be reclaimed and revitalised to support emerging entrepreneurial opportunities. Lastly, within the effectuation studies, Grégoire and Cherchem (2020) call for more studies that assess how entrepreneurs imagine and create new opportunities based on their starting resources. Grégoire and Cherchem (2020) also call for structured interviews and formal inventory techniques are required to map out what specific means and knowledge entrepreneurs mobilise. This study hereby answers this call by using semi-structured interviews in exploring how a specified pre-existing resource such as indigenous knowledge can be used in creating new opportunities.

1.5.2. Practical

Aligning with Sustainable Development Goal (SDG) 5, the advances the discourse on women's leadership and economic empowerment (Kara et al., 2021). By demonstrating how indigenous knowledge serves as a catalyst for innovation, it centres the discourse around how women entrepreneurs develop competitive enterprises without reliance on extensive formal education.

Indigenous knowledge systems offer alternative pathways to economic development by enabling entrepreneurs to leverage locally available materials, skills, and techniques (Padilla-Meléndez, Ciruela-Lorenzo, et al., 2022). This approach not only reduces dependency on external resources but also strengthens business sustainability and market resilience. The recognition of such practices can be formally recognised leading to scalable business solutions, driving inclusive growth and ensuring that innovation remains contextually relevant.

With the high unemployment rate in South Africa (Statistics South Africa, 2025), entrepreneurship fuelled by traditional and locally available knowledge systems can foster job creation, particularly in marginalised communities where formal employment opportunities are scarce. Mobilising local talent and traditional skills leads to microenterprise growth, reducing poverty and promoting economic self-sufficiency (University of the Western Cape, 2023). This hereby presents an opportunity to enhance social mobility in the country.

Higher education institutions play a pivotal role in shaping the entrepreneurial landscape by embedding indigenous knowledge into learning frameworks (University of the Western Cape, 2023). By integrating indigenous knowledge into modern entrepreneurial frameworks, businesses can drive sustainable economic growth while preserving cultural identity. This synergy between heritage and innovation lays the foundation for resilient, community-driven enterprises that contribute to long-term socio-economic progress (University of the Western Cape, 2023). Such educational initiatives not only develop business acumen but also instil social responsibility, enabling entrepreneurs to address economic and social challenges with innovative, locally grounded solutions (University of the Western Cape, 2023).

Policy interventions are essential in fostering an enabling environment for indigenous entrepreneurial innovation. Governments can support this ecosystem by offering tax incentives, funding opportunities, training programmes, and regulatory protections for indigenous knowledge and resources. In South Africa, such policies are crucial in promoting inclusive economic participation, particularly for women, empowering them to achieve financial independence and contribute to broader national development strategies.

1.6. Research Delimitations

The research delimitations include confining the comprehension of indigenous knowledge systems and entrepreneurial innovation activities within Southern Africa. The study focuses specifically on South Africa, with an emphasis on women entrepreneurs. The South African regional context may provide significant insight into indigenous knowledge-based entrepreneurship due to the intersection of cultural heritage, socio-economic factors, and institutional frameworks that shape women's entrepreneurial activities.

1.7. Structure of the Research Report

The research report is structured as follows:

Chapter Two (Literature Review) includes a review of the literature related to indigenous knowledge, entrepreneurial innovation, the contextual setting of women entrepreneurship and the relevant theory being effectuation theory which are relevant for the research question.

Chapter Three (Research Question) outlines the study's key research question which underpins the foundation of this study.

Chapter Four (Research Methodology) details the qualitative approach used to explore participants' lived experiences. It describes data collection methods in the form of semi-structured interviews. Ethical considerations, reliability, and validity measures conducted in the report are also discussed in this chapter.

Chapter Five (Presentation of Results) presents the findings from the research and highlights knowledge transmission methods, adaptive strategies, and business challenges. Findings are supported by participant quotations and thematic analysis.

Chapter Six (Discussion of Results) interprets findings within the broader academic discourse and critically evaluates the results in comparison to existing theories and studies.

Chapter 7 (Conclusion and Recommendations) summarises the key findings from the study and acknowledges the study's limitations and recommends areas and directions for future research. A reflection of key recommendations for academic and business policy reforms are also featured here.

Chapter 2: Literature Review

2.1 Introduction

This chapter reviews and discusses the relevant literature on entrepreneurial innovation, particularly in relation to indigenous knowledge systems (IKS) and women entrepreneurs. The literature review draws on recent, peer-reviewed, and high-quality sources to establish the motivation for this study, outlining how indigenous knowledge systems contribute to entrepreneurial innovation and how they influence business success in emerging economies.

The discussion explores the intersection of indigenous knowledge, entrepreneurial innovation, and gender, identifying how knowledge systems rooted in cultural heritage influence business strategies, market adaptation, and innovation practices. This chapter also highlights the barriers and enablers of entrepreneurial innovation, particularly for women entrepreneurs, who often face institutional, financial, and social constraints in accessing resources and scaling their ventures.

Effectuation theory and entrepreneurial opportunity identification are used to expose the underlying mechanisms through which indigenous knowledge is leveraged as a resource for innovation. The review also assesses how women entrepreneurs utilise their networks, existing knowledge, and contextual insights to drive their business practices.

2.2 Entrepreneurial Innovation

While entrepreneurship is defined as the capability to transform ideas into tangible products or services and introduce them to the market (Szerb et al., 2019), the concept of entrepreneurial innovation remains a subject of ongoing debate among scholars, with no universally accepted framework (Autio et al., 2014; Guerrero & Siegel, 2024). Williams et al. (2022) however, defines entrepreneurial innovation as a phenomenon that involves business leaders launching new products, services, processes, and organisational models to address challenges or capitalise on opportunities in the market. It refers to the process through which entrepreneurs establish and develop new ventures that diverge from conventional growth paths (Williams et al., 2022). This innovation plays a crucial role in overall firm performance (Szerb et al., 2019)

Traditional entrepreneurship often follows well-established business models that replicate existing methods, focusing on efficiency and market penetration (Snihur & Zott, 2020). In contrast, innovative entrepreneurship is driven by creativity, risk-taking, and the introduction of novel products, services, or operational methods (Bradley et al., 2021). According to Henrekson and Sanandaji (2020), entrepreneurial innovation is broad in its definition as it covers the spectrum of both transformative and replicative entrepreneurship. From an institutional perspective, entrepreneurial innovation is frequently confined to high technology and radical innovations as studied in developed economies (Williams et al., 2022). This view can be restrictive, as it excludes market-driven and operational innovations that are more prevalent in emerging markets (Williams et al., 2022). This rigidly dictates the constraints and hurdles that stifle entrepreneurial innovation while selectively favouring certain catalysts. (Williams et al., 2022). It further limits the view of innovation including a wider range of entrepreneurial activities (Onwuegbuzie & Mafimisebi, 2021; Williams et al., 2022).

Innovation serves as a fundamental catalyst for the growth and competitive performance of entrepreneurial firms (Bahl et al., 2021). The influence of entrepreneurs in driving innovation and structural transformation has prompted many countries to actively encourage high-impact entrepreneurship (Henrekson & Sanandaji, 2020). In Kenya's woodworking industry, local machinery producers have developed hybrid technologies by combining Chinese and European machinery to enhance functionality (Kaplinsky & Kraemer-Mbula, 2022). Similarly, in Tanzania, the frequent breakdown of Chinese rice tillers compared to their Japanese counterparts has led to the expansion of rural repair shops, catering to a wider range of users (Kaplinsky & Kraemer-Mbula, 2022). This leads a foreign trade opportunity, where the benefits of the South-South trade can fully be capitalised benefitting national innovation systems and fostering indigenous technological advancement (Kaplinsky & Kraemer-Mbula, 2022).

When assessing the forms of individuals represented in entrepreneurial innovation, assessing the individuals at the centre of the study as a gap identified by Brush et al. (2022), entrepreneurial innovative entrepreneurs are categorised into three different groups. The first is assessed as innovation arising from intrapreneurship which consists of individuals employed within established organisations who take commercial initiatives and drive innovation within large firms (Henrekson & Sanandaji, 2020). The second category, involves managerial business owners, comprises self-employed individuals engaged in routine economic activities, representing the majority of small firms (Henrekson & Sanandaji, 2020). However, their engagement with innovation is largely centred on maintaining existing business models rather than driving disruptive innovation (Henrekson & Sanandaji, 2020). The third category, known as Schumpeterian entrepreneurs, who represents the primary agents of innovation and creative destruction (Henrekson & Sanandaji, 2020; Williams et al., 2022). This third category further reinforces the conventional Western stereotype associated with entrepreneurial innovation (Woods et al., 2022). Research often focuses on the discover, exploitation and consequences aspects of entrepreneurial opportunities with no attribution to the nature and source of the opportunity itself (Foss & Klein, 2020).

Earlier scholars identified the types of innovations occurring in business as market, process, organisational and product innovation (Tavassoli & Karlsson, 2015). Recent scholars have adapted the innovation types to by refining the four types of innovation into product, process, service and business model innovation (Stornelli et al., 2021). Tavassoli and Karlsson (2015) explored how various contextual factors influence the persistence of different types of innovation, identifying key elements such as knowledge dynamics, R&D sunk costs, market orientation, disruptive technologies, and resistance to change. Their study highlighted the significant role of knowledge dynamics in sustaining innovation over time, emphasising that the accumulation and effective use of knowledge are essential for continuous innovation (Tavassoli & Karlsson, 2015). More recent research has examined both enablers and barriers to innovation, recognising knowledge as a crucial capability for fostering innovation (Stornelli et al., 2021).

A key point in entrepreneurship is its influence on economic growth (Kraus et al., 2021). Schumpeter emphasised the critical link of innovation and entrepreneurial activity to economic development (Kraus et al., 2021). The US model of entrepreneurship, although beneficial to the US, is not universally applicable (Bruton et al., 2018). Research has highlighted the critical role of enterprises in driving economic development by generating employment, fostering innovation, and creating wealth (Nair, 2020). Furthermore, numerous studies highlight the significance of institutional intervention in leveraging entrepreneurship as a tool for social advancement and reducing inequalities (Padilla-Meléndez, Plaza-Angulo, et al., 2022). Entrepreneurship is also widely regarded as a means of empowerment, enabling individuals and communities to achieve greater economic and social inclusion (Padilla-Meléndez, Plaza-Angulo, et al., 2022). While entrepreneurship research has historically focused less on developing economies, recent studies have highlighted the prevalence of innovative firms in these regions and their role in job creation, a crucial driver of economic growth (Williams et al., 2022). In Africa, product innovation has been linked to employment generation, fostering broader economic development (Williams et al., 2022).

In Latin America, environmental factors influence the relationship between personality traits and entrepreneurial behaviour, challenging assumptions derived from advanced economies (Williams et al., 2022). Meanwhile, in Asia, where poverty remains widespread, entrepreneurial innovation has been recognised as a more effective tool for poverty alleviation than traditional approaches such as capital accumulation, public sector employment, or infrastructure investment (Williams et al., 2022).

Innovation enhances economic resilience by driving adaptability, productivity, and long-term growth (Wang & Wei, 2021). It enables businesses and economies to respond effectively to external shocks, creating new industries, improving efficiency, and fostering competitiveness (Wang & Wei, 2021). Innovation helps diversify economies and encourages the reduction of the dependency on traditional sectors (Wang & Wei, 2021). Additionally, investing in innovation research coupled with investment in research and development further strengthens human capital and industrial capacity, ensuring economies can recover more quickly from disruptions and maintain stability in the face of global uncertainties (Wang & Wei, 2021).

Economically disadvantaged countries often exhibit higher rates of new business start-ups compared to wealthier nations, partly due to limited access to quality employment opportunities (Williams et al., 2022). Poor and developing nations often have limited access to regional and national innovation systems or intellectual property regimes (Williams et al., 2022). However, individuals in these countries seek opportunities and apply their innovations in diverse ways (Williams et al., 2022). A comprehensive framework that emphasises the distinctive characteristics of innovations in emerging markets is currently lacking, including the unique drivers thereof in comparison to developed markets (Shankar & Narang, 2020). In emerging economies, businesses often face unique challenges in both radical and incremental innovation processes due to resource constraints and the absence of established internal routines that facilitate organisational change (Bruton et al., 2023; Guerrero & Siegel, 2024). Knowledge spillovers in innovation also weaken incentives for young innovative companies due to inadequate protection of R&D efforts (Giraudo et al., 2019). Capital market inefficiencies disproportionately affect innovative high-risk startups, limiting their access to funding (Giraudo et al., 2019). While successful innovations are often celebrated, less attention is given to the numerous failed attempts to launch innovative ventures, despite the significant financial resources (Salmon et al., 2023) they consume (Bradley et al., 2021). Entrepreneurs in resource-constrained environments face significant challenges, including high search costs and unreliable infrastructure, which limit their ability to adopt innovative solutions (Bruton et al., 2024). As a result, both entrepreneurs and consumers tend to rely on familiar offerings, leading to market homogeneity (Bruton et al., 2024). Additionally, inadequate educational infrastructure further restricts entrepreneurs' ability to identify and assess new opportunities (Bruton et al., 2024). Due to financial pressures, these entrepreneurs often prioritise immediate revenue generation over exploring opportunities (Bruton et al., 2024). Interestingly, their necessity-driven approach mirrors lean start-up principles, which some Western entrepreneurs may misunderstand or apply excessively (Bruton et al., 2024). This suggests that entrepreneurship in developed markets could benefit from emphasising early revenue generation similar to developing markets, as a key component of the start-up process (Bruton et al., 2024).

A lack of exposure to entrepreneurial innovation as a career pathway diminishes the probability that individuals will engage in innovation consistently across various levels of productivity (Shankar & Narang, 2020). From a social construct perspective, the perception that economic development is the sole responsibility of the government and key policymakers within marginalised communities, such as tribal groups, fosters a mindset that inhibits entrepreneurial engagement among private citizens (Doucette et al., 2021). Moreover, several nations facing significant unemployment have promoted Schumpeterian entrepreneurship, despite a more pressing need for innovative small and medium-sized enterprises (SMEs) in underdeveloped industries (Henrekson & Sanandaji, 2020). In emerging markets, consumers are predominantly from low- and middle-income groups with limited access to goods and services (Shankar & Narang, 2020). This creates a contrast in the innovation landscape compared to developed markets (Shankar & Narang, 2020). These economies present unique challenges for entrepreneurial innovation (Shankar & Narang, 2020). Cultural and social attitudes discourage risk-taking due to business conservatism, resistance to change, and a lack of entrepreneurial role models (Arza & López, 2021).

In practice, regulations are sometimes structured in a way that restricts market entry for innovative entrepreneurs, which can inadvertently hinder competition and reduce overall public welfare (Paik et al., 2019). Institutional and regulatory challenges arise from unstable policies, bureaucratic red tape, and restrictive intellectual property laws form part of these(Arza & López, 2021). Market barriers including uncertain demand, market concentration favouring large firms, and challenges in securing market entry are also key when assessing the barriers associated with entrepreneurial innovation (Arza & López, 2021). The authors clearly state that entrepreneurial opportunity arises from an entrepreneur who is knowledgeable or highly attuned to their environment. Foss and

Klein (2020) however, note that early-stage entrepreneurs who partake in entrepreneurial innovation face knowledge and human capital deficiencies, often stemming from shortages of skilled professionals, weak academia-industry collaboration, and limited technical training (Arza & López, 2021). Lastly, risk aversion hinders entrepreneurship due to fear of failure, lack of safety nets, and legal and financial consequences of business closure (Arza & López, 2021).

This overall presents a gap in assessing what antecedents of innovation in various emerging market contexts as well as how this differs throughout various firms (small, medium and large) (Shankar & Narang, 2020). Further to this, an alternative approach to western-influenced business practices is key (Doucette et al., 2021), in order to further discover what policies, institutions and social conditions would influence and advance entrepreneurial innovation in non-Western, emerging markets and developing nations (Allard & Williams, 2020; Brush et al., 2022; Williams et al., 2022).

2.3 Indigenous Knowledge Systems

Indigenous knowledge, is defined as the knowledge possessed by Indigenous Peoples or local knowledge specific to a particular society (Salmon et al., 2023). Scholars debate the broader application of "Indigenous" to any group residing in a specific location with a local focus (Banerjee, 2022). For the context of this study, the overarching definition of “indigenous” embraces inclusivity, recognising diverse interpretations of ethnic indigeneity (Banerjee, 2022).

Indigenous knowledge systems validate knowledge derived from direct experiences within local contexts, often transmitted through oral histories and storytelling (Salmon et al., 2023). In contrast, Western knowledge systems prioritise verifiable evidence, analysed quantitatively or qualitatively and shared through written records (Salmon et al., 2023). These fundamental ontological and epistemological differences create challenges for Indigenous knowledge scholars attempting to navigate both systems.

Also referred to as “Traditional knowledge systems”, indigenous knowledge systems have historically played a central role in shaping economic and social structures within indigenous communities (Morales et al., 2023). Confraria et al. (2024) note that addressing issues such as the Sustainable Development Goals (SDGs), which are considered "wicked problems" requires a more nuanced approach and research aimed at solving specific SDG targets must be context-sensitive and may necessitate the integration of diverse knowledge systems, including indigenous knowledge.

Indigenous values shape knowledge, while heritage influences the identification of entrepreneurial opportunities (Murphy et al., 2020). Indigenous knowledge continues to drive innovation in various sectors, particularly in rural economies where formal business infrastructure remains underdeveloped (Padilla-Meléndez, Ciruela-Lorenzo, et al., 2022). Entrepreneurs from developing nations frequently leverage traditional knowledge to create solutions that address pressing social and economic issues (Padilla-Meléndez, Ciruela-Lorenzo, et al., 2022).

Beyond it often being positioned by a survival tool (Padilla-Meléndez, Ciruela-Lorenzo, et al., 2022), indigenous knowledge is often framed as an alternative perspective on business practices and social responsibility, particularly in response to increasing calls in literature for economic systems that are more community- and sustainability-focused (Banerjee, 2022; Doucette et al., 2021). Often identified to be suitable within a particular context, the outcomes of entrepreneurial activity based on indigenous knowledge may benefit stakeholders beyond the indigenous community (Murphy et al., 2020). This further extends the transfer and application of indigenous knowledge to be identified to benefit non-indigenous people, and hereby amplifying its global application (Salmon et al., 2023). We identify this in the study by Bruton et al. (2024), where variations of the lean startup theory were applied to various businesses in local contexts, and hereby added learnings from these businesses that could advantage Western businesses. The article suggests that Western entrepreneurs can learn from resource-constrained settings by prioritising revenue generation over excessive pivoting, ensuring their ideas are validated through sales rather than repeated changes (Bruton et al., 2024). It also highlights the value of bricolage, where entrepreneurs creatively use available resources instead of relying on external funding changes (Bruton et al., 2024). Additionally, low-risk market testing through real-time customer interactions in informal settings offers a practical approach that Western entrepreneurs could adopt to refine products efficiently changes (Bruton et al., 2024). Bruton et al. (2018) points to the case of China, where there is significant success in entrepreneurial activity leading to economic growth. This has led to the understanding of non-Western knowledge and ideologies such as Taoism, Confucianism (Bruton et al., 2018) can provide a perspective on cooperation and competition as interdependent forces, rooted in the concept of yin and yang. Unlike Western models, which often frame these elements as opposing forces, this approach provides deeper insights into entrepreneurial decision-making in China. This further explores and provides an alternative sophisticated understanding of resource allocation, opportunity exploitation, and the interplay between collaboration and competition (Bruton et al., 2018).

Where Indigenous knowledge has been interpreted as an old and inferior form of knowledge, with challenges to be incorporated into mainstream entrepreneurship studies (Banerjee, 2022). Abubakre et al. (2021) highlight the role of Ubuntu in digital entrepreneurship, emphasising indigenous values over market competition. This digital Ubuntu fosters a collective, platform-based ecosystem where entrepreneurship is shaped by cultural values and community networks (Abubakre et al., 2021). The focus on barriers often overlooks Indigenous beliefs and values, leading to distorted conclusions (Salmon et al., 2023). For instance, studies on Indigenous economic development frequently ignore that success may be defined differently within Indigenous communities (Salmon et al., 2023). Indigenous knowledge and methodologies are also often assessed as lacking rigor (Salmon et al., 2023), backward, underdeveloped and primitive (Banerjee, 2022), lacking generalisability (Bruton et al., 2022). This is contrasted by the evolution of knowledge surrounding rooibos in T, which in South Africa highlights the development dynamics of Indigenous knowledge, commercialisation, and legal recognition (Meyer & Naicker, 2023). Indigenous knowledge of rooibos was originally passed down orally by the San and Khoi people for its medicinal and nutritional benefits and was later documented by colonial botanists and commercialised globally (Meyer & Naicker, 2023). Over time, legal frameworks evolved to acknowledge its origins, with the National Environmental Management: Biodiversity Act (2004) and Bioprospecting, Access, and Benefit-Sharing (BABS) Regulations (2015) ensuring that Indigenous communities benefit from its commercial use (Meyer & Naicker, 2023).

However, diversification within the field is required further research is needed that explores Indigenous enterprises that do not explicitly pursue social missions and also promote the evolution of indigenous knowledge (Salmon et al., 2023). Banerjee (2022) further argues that there is a gap in decolonising the production of such knowledge instead of contextualising indigenous theory to meet Western perspectives. This further calls for research that note the contributions of indigenous knowledge in complex, unsustainable practices and its application and integration in non-indigenous systems (Salmon et al., 2023). We further reference the case of Korea’s indigenous innovation that progressed its economy from a shift from foreign dependence to self-reliance (Kwak & Yoon, 2020). From initially importing turnkey nuclear technology, Korea transitioned non-turnkey imports, enabling domestic expertise in engineering and system integration

(Kwak & Yoon, 2020). By the late 1990s, it achieved a fully indigenous design meeting international standards, establishing Korea as a global nuclear technology exporter (Kwak & Yoon, 2020).

Although various forms of knowledge, such as codified and tacit or science-based and experience-based, are widely recognised as essential for innovation, the role of traditional knowledge and its associated learning processes is rarely considered (Morales et al., 2023). Traditional knowledge significantly influences social and local behaviours and serves as a foundation for innovation, as it is transmitted across generations, often orally, and preserved as a shared knowledge base that can be enriched through interactions with external actors (Morales et al., 2023). However, despite its potential contribution to innovation, traditional knowledge remains largely absent from academic discussions on the subject (Morales et al., 2023). Addressing this gap is crucial for advancing the study of inclusive innovation in developing countries (Morales et al., 2023).

Due to its lack of documentation (Salmon et al., 2023), indigenous knowledge has often been ignored (Doucette et al., 2021) leading to the use and reliance of management theories are largely shaped by Western perspectives being used and applied in contexts that do not align with their foundational assumptions (Banerjee, 2022). Critical management studies (CMS) reveal how colonial narratives shape leadership, and entrepreneurship theories, sidelining Indigenous perspectives (Banerjee, 2022). Despite growing awareness, Indigenous knowledge remains undervalued, with Western frameworks often misapplied in diverse contexts (Banerjee, 2022). A particular case emerged where a Chinese PhD in management student obtained unexpected survey results using Hofstede’s dimensions of culture, where she assumed an error in the sample rather than questioning the theory itself (Banerjee, 2022). This reflects the dominance of Western knowledge structures that classify indigenous cultures through rigid, externally imposed frameworks; instead of leveraging on indigenous knowledge to find an explanation (Banerjee, 2022). Recognising Indigenous knowledge as a legitimate source of theorisation allows for the emergence of alternative models of leadership, entrepreneurship, and organisational behaviour that reflect diverse worldviews and lived experiences (Banerjee, 2022).

Another challenge arising with the modernisation and incorporation of indigenous knowledge into current practices is the complex intellectual property matters concerning the subject (Meyer & Naicker, 2023). In the case of rooibos commercialisation in South Africa, colonial botanists often exploited Indigenous knowledge, ignoring customary laws (Meyer & Naicker, 2023). The challenges of Intellectual Property Rights (IPRs) in relation to indigenous knowledge, leads to global patent and trademark systems misappropriating the essence traditional knowledge (Castaldi et al., 2024). Indigenous innovations are often patented by foreign corporations without fair recognition or compensation (Castaldi et al., 2024). A common instance of this is within the concept of bioprospecting, where companies seek out indigenous knowledge for commercial gain (Castaldi et al., 2024). This practice has been criticised for its unfair outcomes, as local communities receive little benefit despite being the original custodians of this knowledge (Castaldi et al., 2024).

Even though various attempts have arisen through international agreements attempt to protect indigenous intellectual property knowledge (Castaldi et al., 2024). The effectiveness of such policies remains questionable knowledge (Castaldi et al., 2024) as benefit-sharing agreements often fail to deliver meaningful economic returns to communities (Castaldi et al., 2024). Additionally, only in Indigenous knowledge benefit-sharing agreements a clash is often recognised in due to legal frameworks favouring formal entities. Only legally recognised groups can negotiate, excluding many knowledge holders, leading to the original holders not being financially compensated for their knowledge (Wynberg, 2023). This reinforces a hierarchy where politically connected groups gain legitimacy, while others are overlooked (Wynberg, 2023). Such exclusions perpetuate the perception of Indigenous knowledge as inferior to scientific and corporate frameworks (Wynberg, 2023). Further to this, questions on legitimate ownership arise and case of rooibos tea exemplifies these tensions (Wynberg, 2023). The historical displacement of the San and Khoi people due to colonialism and apartheid complicates the question of rightful knowledge ownership and legitimate claims (Wynberg, 2023). Odziemkowska and Dorobantu (2021) also add on to the views related to Indigenous communities' property rights as they are often determined by historic treaties, which may grant them full property rights or only use rights, and these rights however are not always recognised or enforced consistently. Some communities have obtained full rights through modern treaties, but others remain without clear legal claims to their ancestral lands (Odziemkowska & Dorobantu, 2021). A key issue that also arises is the knowledge base arising from indigenous knowledge often leads to the lack of these communities in possessing the appropriate modern economic resources and legal expertise to effectively negotiate with multinational corporations (Odziemkowska & Dorobantu, 2021).

A key issue highlighted in the literature is the gradual decline of Indigenous knowledge worldwide, driven by long-term global changes that impact local, peasant, and indigenous communities (Kaplinsky & Kraemer-Mbula, 2022). The clash between modernisation and indigenous knowledge is assessed in various settings, where incubation institutions such as such as Harambee in Kenya exemplify how indigenous knowledge is mobilised to sustain interdependent relationships, enabling mutual aid and economic self-sufficiency despite prevailing conditions of mistrust and severe income scarcity (Weiss et al., 2024). However, the transition to urban settings presents challenges, as indigenous systems struggle to retain their collectivist ethos in environments shaped by competition, economic precarity, and ethnic diversity (Weiss et al., 2024). This also leads to the decline of the actual content of this knowledge (Weiss et al., 2024), while external interventions often seek to restructure or replace indigenous institutions, such approaches risk undermining the deeply embedded in indigenous knowledge (Weiss et al., 2024). In the grander scheme of things, Kaplinsky and Kraemer-Mbula (2022) identify that local knowledge systems demonstrate adaptability and alignment with local markets and from a business perspective encounter barriers to formalisation, including restricted access to finance, technology, and structured knowledge-sharing networks. A comparison is made to South-North trade, where knowledge transfer and technological advancements are more systematically organised, South-South trade often lacks robust mechanisms for skills development and innovation diffusion (Kaplinsky & Kraemer-Mbula, 2022).

A clash in views been indigenous knowledge and other theories, particularly in business, arose from fundamental worldview differences (Slavova & Metiu, 2022). This was demonstrated in a study based on the Ghanaian relational work and knowledge transfer process indicated that while development organisations promote agriculture as a business, focusing on profitability, risk management, and scientific advancements, rural farmers perceive it as an intrinsic aspect of their identity, deeply rooted in ancestral traditions and community cohesion (Slavova & Metiu, 2022). This fundamental epistemological divergence often leads to resistance against modern agronomic techniques, as farmers tend to view them as misaligned with their established knowledge systems (Slavova & Metiu, 2022). Another significant challenge arises from contrasting interpretations of farmer-based organisations: development agencies regard them as managerial structures designed to enhance efficiency and productivity, whereas farmers consider them as social support networks built upon indigenous practices of collective labour and mutual financial assistance (Slavova & Metiu, 2022).

2.4 Indigenous Knowledge, Entrepreneurial Innovation, and Women Entrepreneurs

2.4.1 Indigenous Knowledge and Entrepreneurial Innovation

There is less attention directed towards understanding how certain features and influences of indigenous knowledge influence the scaling of organisations for value creation (Hedberg & Lounsbury, 2021). Entrepreneurship fuelled by cultural knowledge can influence how businesses can bridge institutional voids, enabling local businesses to scale within industrial markets (Hedberg & Lounsbury, 2021). Hedberg and Lounsbury (2021) illustrate how entrepreneurs gained legitimacy within established organisations by initially separating local food values from rigid procurement systems, later reintegrating them through storytelling and cultural narratives once institutional barriers diminished. This process facilitated the growth of local food markets, demonstrating how cultural entrepreneurship can align tradition with innovative commercial scalability models (Hedberg & Lounsbury, 2021). Another aspect of innovation within indigenous knowledge arose from entrepreneurs' model innovation where they fused commercial success with their awareness of societal challenges, leading to a moral drive to innovate business models that integrate both social and economic benefits (Saebi et al., 2019; Sydow et al., 2022). In Africa, the success of business model innovation using indigenous knowledge can be particularly studied through the case of M-PESA in Kenya. Initially developed as a means for repaying microfinance loans, M-PESA evolved into a widely adopted mobile money system by integrating into informal economies and addressing societal challenges, hereby solving for a greater societal challenge to facilitate financial inclusion (McBride & Liyala, 2023). The success of M-PESA stemmed from its ability to operate outside formal banking structures, leveraging local community-based networks and observing cultural practices (McBride & Liyala, 2023). A comparative study of Tokyo and Bangalore highlights the diversity and success of entrepreneurial ecosystems (EEs) in non-Western contexts, showing how both cities have evolved uniquely rather than following traditional Western models (Kapturkiewicz, 2022). Despite Tokyo being a developed economy and Bangalore a developing one, both represent the most advanced EEs within their respective national economies, sharing a strong ICT startup sector, significant funding levels (Kapturkiewicz, 2022). These countries leveraged unique local strengths shaped by their institutional structures and market dynamics, rather than infusing routine Silicon Valley principles, which serves as a dominant benchmark (Kapturkiewicz, 2022).

2.4.2 Women Entrepreneurship

The context of the study is based on women entrepreneurship. The significance behind this motive is to answer the call on due to women entrepreneurs forming part of the group of the fastest growing entrepreneurial populations (Bakker & McMullen, 2023). Women worldwide own and manage fewer businesses than men due to lower entrepreneurial participation influenced by preferences, gender norms, and discrimination, while research on women entrepreneurs remains scarce, making gender a key factor distinguishing unconventional from conventional entrepreneurs (Bakker & McMullen, 2023). Further to this, knowledge of women and innovation is overwhelmingly based on evidence from developed markets (Madison et al., 2022), which further motivated the selection of understanding with a consideration from developing nations such as South Africa (Madison et al., 2022). Despite this, even in more developed economies such as the US, male entrepreneurs are seen as more conventional, while women-led startups receive only 2–3% of venture capital funding (Bakker & McMullen, 2023).

Despite the critical role of entrepreneurial women in social and economic development, much of the literature has concentrated on their activities (Foss et al., 2019) and the influence of soft obstacles on their ventures (Nair, 2020) on their rather than their innovative potential particularly in developing countries (Azeem et al., 2022). Conflicting views in the innovative capacity of women by Smulowitz et al. (2025) is an ongoing debated issue, coupled with conflicting theoretical views. Some argue that women's higher risk aversion may lead to more cautious decision-making, reducing firm risk and potentially limiting innovation (Smulowitz et al., 2025). Others contend that gender diversity enhances cognitive variety, improves decision-making dynamics, and provides valuable resources, ultimately fostering greater innovation (Smulowitz et al., 2025). The success of women's entrepreneurship is significantly linked to their continuous innovation (Nair, 2020). Prior studies have referred to the impact of women entrepreneurship on society and its contribution to economic growth with some indicating that it enhances women's empowerment, acting as a catalyst for further innovation (Avnimelech & Rechter, 2023). In addition to women entrepreneurs' attitudes toward innovation, their motivation to implement new ideas, and their ability to inspire subordinates play a crucial role in business success (Nair, 2020).

These innovation efforts are often driven by the need to adapt to changing external environments (Nair, 2020), and this is often coupled with a lack of documented strategies that integrate gender equality into entrepreneurship and innovation agendas (Nair, 2020). This could bring about the need to rather understand the differences in the innovative process of women and men, as Brush et al. (2022) argues for a shift in focus towards understanding the entrepreneurial innovation processes among women and the factors influencing these processes globally. Studies have further indicated that there were no found no significant difference in innovativeness between men and women entrepreneurs from a gender perspective and suggested more attention be paid towards correcting the prevailing gender bias in innovation studies (Nair, 2020). Pertaining to the possibility of education being a direct influence to the innovation of women, Avnimelech and Rechter (2023) noted the significant increase in the higher attainment higher education by women which still does not translate into increasing the propensity of driving women into entrepreneurship. Madison et al. (2022) explore how women influence innovation in small and medium enterprises (SMEs) revealing that female-led SMEs tend to employ more women, which enhances knowledge-sharing and innovation. This study does not explore in depth antecedents of the knowledge leveraged in the knowledge-sharing methods innovation and limits the views to formal SMEs rather than focusing on women entrepreneurs in the domain of various businesses to assess for comparability (Madison et al., 2022). Regardless of attempts to address this gap, the academic theory does not drive innovation by women entrepreneurs in their ventures as core of its inquiry (Brush et al., 2022).

2.4.3 Indigenous Knowledge, Entrepreneurial Innovation and Women Entrepreneurs

Brush et al. (2022) call for research that explores on how innovative capacity is constructed, embodied, and resisted within the entrepreneurial space for women. In their study, Madison et al. (2022) theorise the capabilities information-processing abilities and relational communication skills are shared, activated and leveraged for innovation in SMEs by women. Allard and Williams (2020) emphasise the strong ties between formal education and innovation and the need for the role of government in investing in education to stimulate an entrepreneurial, knowledge-based economy. Knowledge and education, particularly in the form of formal and informal education can be seen as a positive contribution to entrepreneurial innovation (Madison et al., 2022). However, Madison et al. (2022) contextualise the setting in emerging markets, where women entrepreneurs facilitate women's participation in entrepreneurial activities by equipping them with the skills needed to navigate business environments (Madison et al., 2022).

Policies that encourage collaboration among women entrepreneurs in regions such as South Asia also emphasise the importance of shared learning and knowledge exchange (Madison et al., 2022; Ratten & Rashid, 2020).

Acquiring resources is essential for the success of any venture (Dutta & Packard, 2024). Guerrero and Siegel (2024) identify various resources and capabilities that shape innovation in entrepreneurial systems and knowledge infrastructures in the form if universities, human development through education, and support systems. Bahl et al. (2021) relates innovation is to the acquisition of new knowledge, highlighting knowledge as a strategic driver of innovation.

The role of knowledge being a major driver for entrepreneurial innovation presents various key issues. Firstly, issues of accessibility arise with disparities in resource distribution being most pronounced in the education of entrepreneurs (Bruton et al., 2023). In many cases, women have limited access to knowledge through formal education (Ghouse et al., 2021) and this is perceived to limit their ability to develop innovative solutions in their entrepreneurial activities (Bahl et al., 2021). Developing nations, of which the South African context forms a part of, are also associated with the issue of limited access to education which normally affects women more (International Monetary Fund, 2023). Barriers to knowledge access, both internal and external, stem from the lack of availability of or restricted access to essential knowledge sources (Jaureguy et al., 2023). These barriers are therefore critical constraints on innovation at both the firm and industry levels (Jaureguy et al., 2023).

Secondly, formalised education and knowledge isolate the critical cultural influences on entrepreneurial knowledge such as language (Bruton et al., 2023) and on a deeper analysis, recognition of metaphors in theory development (Lundmark et al., 2019). Given these constraints, women entrepreneurs in resource-limited settings often rely on other knowledge sources, such as community-based learning and indigenous expertise, to drive their entrepreneurial activities (Padilla-Meléndez, Ciruela-Lorenzo, et al., 2022). These knowledge systems represent an underexplored yet critical component of entrepreneurial innovation in developing economies (Morales et al., 2023; Salmon et al., 2023)

Various forms of knowledge are often underrepresented in entrepreneurial ecosystems, even various internal resources within SMEs such as internal knowledge passed through a diverse group of individuals (Madison et al., 2022). Guerrero and Siegel (2024) also note that depending on the industry and public support, some knowledge

infrastructures will be more conducive to entrepreneurial innovations than others. To achieve this, individuals on the margins must have access to knowledge systems that align with their unique cultural contexts (Woods et al., 2022). A practical example of this is the reliance of the Māori nations on indigenous metaphors to illustrate entrepreneurship phenomena (Jaureguy et al., 2023).
The advantages of using various sources of knowledge in enhancing business competitiveness through innovation is also underexplored (Zhang et al., 2023). While innovation is often associated with technological advancements and formal research institutions, emerging evidence suggests that indigenous knowledge plays a significant role in shaping entrepreneurial ecosystems in developing countries (Zhang et al., 2023). As traditional Western frameworks may not be fully applicable or effective in these contexts, often marginalising local innovations (Banerjee, 2022). Harrington (2024) provides findings that highlight the significance of informal, interconnected networks that link rural areas' physical and social landscapes with technical and local knowledge sources, helping to compensate for deficiencies in formal institutions.

The social structures within a market significantly influence innovation, particularly in rural and semi-urban areas, as well as among low-income communities (Shankar & Narang, 2020). These segments often have distinct needs that drive the demand for innovative solutions and often exist within close-knit communities that facilitate social learning (Shankar & Narang, 2020). While some argue that a high proportion of rural consumers might reduce innovation due to similar preferences, the opposite may be true in emerging markets, where untapped rural regions present new opportunities for firms (Shankar & Narang, 2020), with an example, in India, rural areas contribute 60% of GDP but remain largely underdeveloped (Shankar & Narang, 2020).

Little credit is granted to microentrepreneurs serving very poor customers and how they may still charge for services due to the dysfunctionality of existing solutions, leading to a willingness to pay for effective alternatives (Lazarow, 2020). By solving basic, real problems, these businesses tap into previously underserved markets (Lazarow, 2020). but making their services a “sticky” necessity for customers. Abubakre et al. (2021) adapted Indigenous cultural values that shape entrepreneurs' perceptions of their role within local and broader societal contexts, using Ubuntu as an indigenous value system that influenced digital innovation.

2.4.4 South African context

Despite being a major African economy, entrepreneurship research in South Africa remains underexplored (Nachum et al., 2022), often relying on Western theories that may not fully capture local dynamics (Williams et al., 2022). Encouraging dialogue between local and global scholars is essential for contextual relevance (Williams et al., 2022). South Africa's historical inequalities and complex socio-economic transition create a unique testing ground for various entrepreneurship theories, particularly in understanding the dynamics between entrepreneurial innovation and indigenous knowledge (Adams & Luiz, 2022).

2.5 Theoretical Framework

2.5.1 Effectuation Theory

This study therefore adopts effectuation theory as its primary theoretical framework to examine the role of indigenous knowledge in shaping entrepreneurial innovation among South African women entrepreneurs. Our review of the intersection of indigenous knowledge and entrepreneurial innovation women suggests that identification and evaluation of entrepreneurial opportunities in Indigenous contexts is more often akin to an effectual logic than a causal one (Murphy et al., 2020).

While entrepreneurship remains an emerging field and requires further theoretical development and refinement are essential to enhance the understanding of entrepreneurial phenomena (Shepherd & Williams, 2023), effectuation is a more recent theory and began to take shape around the turn of the millennium (Galkina et al., 2022). In their study of effectuation theory in opportunity identification and pursuit, findings in the study Zhu et al. (2021) suggest that a means-oriented approach, which focuses on leveraging existing resources, is more effective in identifying and pursuing business opportunities. The further noted that effectuation training leads to a greater number of identified and pursued business opportunities, reinforcing its relevance in entrepreneurship education (Zhu et al., 2021).

This contributes to evidence-based entrepreneurship, providing support for effectuation as a practical and applicable entrepreneurial method. The theory aimed to introduce a means-driven, non-predictive approach to entrepreneurial reasoning in contrast to the goal-driven logic of causation (Galkina et al., 2022). Effectuation theory explains aims to rather broaden the understanding of rationality by outlining non-predictive and non-adaptive modes of decision-making in business settings (Galkina et al., 2022). This process sheds light on entrepreneurial innovation in resource-constrained contexts (Dutta & Packard, 2024) leading to the conversion of forming new firms, processes and markets (Van Mumford & Zettinig, 2022).

There are different approaches in which entrepreneurs can acquire knowledge resources. Kimjeon and Davidsson (2022) point to opportunities arising from external changes and note that limited research explores how entrepreneurs identify and act on less obvious enablers, particularly regarding the characteristics of mechanisms such as opacity and agency intensity, despite their strategic importance (Kimjeon & Davidsson, 2022). Existing research primarily focuses on predictable outcomes, such as regulatory changes facilitating new venture creation (Kimjeon & Davidsson, 2022).

Leveraging indigenous knowledge as an enabler and resource that can be used by women entrepreneurs in their entrepreneurial innovation is therefore key. Scholars have thus argued for a broader understanding of individual antecedents, including the role of tacit knowledge and path dependence, though the fragmented nature of effectuation research continues to hinder the development of a more holistic understanding of its underlying mechanisms (Scazziota et al., 2023). Entrepreneurial research has primarily examined resource acquisition through the causal ask, were entrepreneurs secure substantial backing from institutional investors in exchange for offering the prospect of significant returns in exchange for the resources required to develop their ideas (Dutta & Packard, 2024). This paper explores how entrepreneurs innovate and create opportunities using available resources. Pointing to effectuation theory, which presents an alternative perspective; advocating for the early accumulation of diverse resource pre-commitments prior to the formation of a concrete idea (Dutta & Packard, 2024). These pre-commitments, which may take intellectual and knowledge forms, establish a flexible foundation for the venture (Dutta & Packard, 2024). Instead of aligning resources to fit a predetermined vision, entrepreneurs adapt their goals and strategies based on the resources available and insights gained through market engagement (Dutta & Packard, 2024).

Despite its potential to foster innovation, this approach to effectual resource mobilisation has received limited theoretical attention (Dutta & Packard, 2024). In addition to this, situated within the broader discourse on entrepreneurial opportunity recognition, many of its foundational principles and mechanisms remain underdeveloped (Dutta & Packard, 2024). These principles include bird in hand, affordable loss, lemonade, patchwork quilt and pilot in the plane (Grégoire & Cherchem, 2020). There is a growing scholarly interest in examining innovation across diverse contexts, with particular emphasis on understanding the fundamental attitudes, orientations, and preferences that shape and drive these effects (Grégoire & Cherchem, 2020). These insights underscore the need for a more systematic examination of the underlying mechanisms that drive effectuation's efficacy in various contexts.

To complement these advancements and reinforce the conceptualisation of effectuation as a distinct mode of action, scholars are encouraged to focus more empirical documentation of the tangible manifestations of effectuation's core principles, with particular emphasis on the behavioural consequences that arise from these principles (Grégoire & Cherchem, 2020).. Given the unpredictability of contingencies and emergent surprises within the entrepreneurial process, scholars advocate for the application of

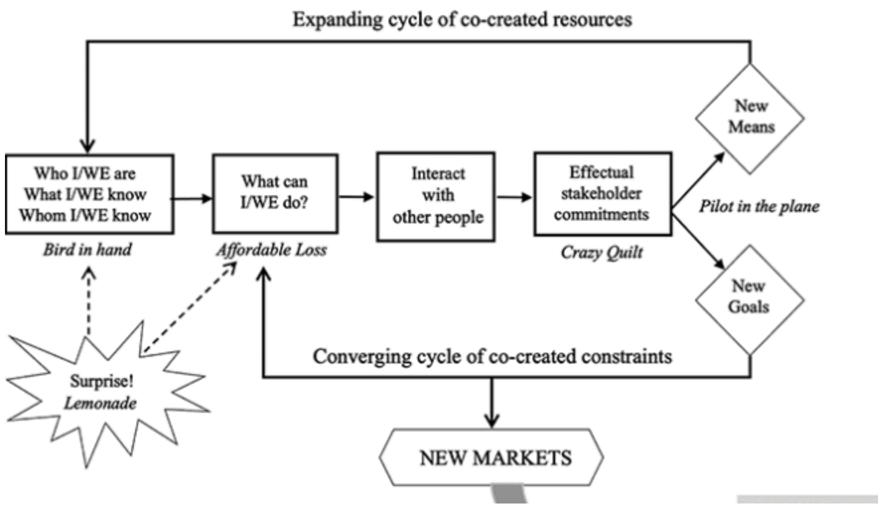

Figure 1 : Effectuation Conceptual model by Sarasvathy (2001).

Source: Sarasvathy (2024)

systematic retrospective techniques such as structured interviews (Grégoire & Cherchem, 2020). This approach is encouraged to would allow researchers to map critical decision points and strategic pivots that shape venture development (Grégoire & Cherchem, 2020).

Although a gap in literature arises in the application of all the principles of effectuation, this stance of this study aims to address the gap in effectuation's foundational bird in hand principles as the study's core objective is within the domain of knowledge and entrepreneurial innovation. The bird in hand principle assesses the orientation of pre-existing resources with the following questions: "who I am," "what I know," and "whom I know" (Murphy et al., 2020). As identified by Grégoire and Cherchem (2020) , this principle requires more rigorous structured measurement and understanding of entrepreneurial experience, knowledge, and network ties. For instance, the "who I am" dimension could be assessed through an entrepreneur's prior experience and expertise relative to the industry or domain of the venture (Grégoire & Cherchem, 2020). The "what I know" dimension could be measured by evaluating an entrepreneur's pre-existing knowledge of the relevant business, technical, or market landscape (Grégoire & Cherchem, 2020). The "whom I know" dimension could involve documenting the number and quality of network ties leveraged during the venture's formative stages, as well as assessing the strength and contributions of these connections (Grégoire & Cherchem, 2020).

By integrating insights from effectuation and indigenous knowledge systems, the research seeks to illuminate how non-traditional, contextually embedded resources influence opportunity identification and venture creation in emerging markets. Secondly, the research is contextualised in a resource-constrained setting for a marginalised group. Thirdly, in exploring the intersection of indigenous knowledge as a knowledge resource influencing entrepreneurial innovation, the research aims to add more theory to the "bird in hand principle" by entrepreneurs and their background "who I am" (Murphy et al., 2020) , linking the knowledge as the "what I know" (Murphy et al., 2020) and the stakeholders involved in passing this type of knowledge (Salmon et al., 2023) as the "whom I know" (Salmon et al., 2023). Using entrepreneurial effectuation to understand the process by which entrepreneurial innovation plays out in various contexts by leveraging indigenous resources and values is key as this consideration may enrich existing theories and highlight complexities. We also enhance the theory by leveraging on how dispossessed or dormant resources (Bruton et al., 2022; Doucette et al., 2021; Woods et al., 2022) can be reclaimed and revitalised in pursuing entrepreneurial opportunities.

Demonstration of practical settings of the intersection of indigenous knowledge and entrepreneurial ecosystems is key. Grégoire and Cherchem (2020) also call for more practical demonstrations of how effectuation plays out in entrepreneurship. In various areas where English proficiency is limited, understanding wild plant behaviour has been vital for predicting weather conditions, further highlighting the importance of indigenous knowledge in resource management (Apraku et al., 2021). Murphy et al. (2020) applies effectuation theory to demonstrate how indigenous community-based enterprises in the Toquaht context, use knowledge arising from indigenous values and resources influence entrepreneurial innovation. The author applies effectuation theory to the Toquaht Nation's ICBEs by framing entrepreneurship as a collective process for the principles of effectuation (Murphy et al., 2020). Opportunity recognition is shaped by shared existing knowledge resources and cultural identity (bird-in-hand), focusing on what they afford to lose rather than prediction of possible gains (affordable loss), and rely on community stakeholder commitments (patchwork quilt), including reclaiming dispossessed resources such as language, territories and culture - and acquiring new ones to strengthen control over their future and align with their evolving goals (pilot in the plane) (Murphy et al., 2020).These findings illustrate the evolving nature of indigenous entrepreneurial innovation in emerging markets, where resourcefulness from the Global South plays a significant role (Williams et al., 2022).

Alternative sources of theory that could have been applied to the study include bricolage. A comparative study between bricolage and effectuation theory indicates that both effectuation and bricolage conceptualise entrepreneurship in uncertain and resource-constrained environments (Scazziota et al., 2023). Although both theories emphasise entrepreneurial action in uncertain or constrained environments, they diverge in their treatment of uncertainty, resource constraints, and entrepreneurial agency (Scazziota et al., 2023).

Effectuation looks at what you have and how can use it to drive entrepreneurial innovation (Zhu et al., 2021) while bricolage mainly focuses on constraints and alternatives to replace (Steffens et al., 2023). Effectuation emphasises the idea that entrepreneurs do not wait for ideal resources but instead take action with what is available and resonates strongly with the study, where entrepreneurs work with knowledge that is inherited, tacit, and often informal, rather than acquired through conventional markets (Scazziota et al., 2023). Unlike bricolage, which also highlights resource constraints, effectuation does not frame resources as static limitations but rather as means for action (Scazziota et al., 2023).

This study further highlights the nature of indigenous knowledge is shared, often in oral and communal exchanges (Salmon et al., 2023), indicating that the resource is there and exists but is not being referred to as a key resource in entrepreneurial innovation

(Doucette et al., 2021). Bricolage emphasises resource scarcity and starting from a point of resource constraints (Scazziota et al., 2023). Effectuation assumes that uncertainty is radical and pervasive, requiring entrepreneurs to continually act on available means while adjusting their goals dynamically (Galkina et al., 2022) . In contrast, bricolage suggests that resource constraints rather than uncertainty itself drive entrepreneurial action, with the focus placed on overcoming limitations through creative recombination (Williams et al., 2022). Effectuation does not view resource constraints as the primary challenge; rather, it focuses on how entrepreneurs interact with their surroundings and other social agents to create opportunities (Galkina et al., 2022). Bricolage, by contrast, centres on working within scarcity, prioritising recombination over seeking external partnerships or expanding the resource base (Williams et al., 2022). Additionally, effectuation considers decision-making as an evolving process shaped by entrepreneurial agency (Dutta & Packard, 2024), whereas bricolage is primarily concerned with immediate problem-solving and adaptation (Busch & Barkema, 2021) .

As the study is contextualised to explore the constructs within the sphere of women entrepreneurs, women entrepreneurs engage more intensively in interdependent learning and are often more willing to seek knowledge from their communities without facing perceived societal penalties (Marvel et al., 2025). This further adds broadens the scope of effectuation to being more than defined by resource scarcity; but rather, also involving an element of community and institutional instability (Murphy et al., 2020).

While discussions in literature assess indigenous knowledge as an alternate source of knowledge, it should be emphasised that the focus thereof is not seeking to explain the use of indigenous knowledge in entrepreneurial ecosystems as the “other” (Woods et al., 2022) or a replacement resource (Steffens et al., 2023). Indigenous knowledge should not be explored in this study merely as a supplementary asset but rather as a fundamental enabler of entrepreneurial innovation (Banerjee, 2022; Bruton et al., 2022).

Chapter 3: Research Question

3.1 Introduction

This chapter presents the research question that will guide the study, formulated following a review of literature on entrepreneurial innovation, indigenous knowledge, and women’s entrepreneurship in South Africa. The study also integrates effectuation theory, particularly the "Bird-in-Hand" principle, to examine how women entrepreneurs utilise existing resources and knowledge to foster innovation.

3.2 Research Sub questions

Before arriving at the main research question, themes that are positioned below as several preliminary questions emerged from the literature review. These questions helped shape the focus of the study and are outlined below to illustrate the process leading to the main research question.

3.2.1 To what extent do women entrepreneurs in South Africa rely on indigenous knowledge in their business operations?

This question seeks to determine whether indigenous knowledge is consciously used as a business tool or whether it emerges informally through cultural and social influences. However, it only examines the presence of indigenous knowledge in business operations without addressing how it is actively applied in innovation processes.

3.2.2 How does effectuation theory explain the use of indigenous knowledge as a resource for entrepreneurial innovation?

This question investigates whether effectuation theory, particularly the "Bird-in-Hand" principle, explains how women entrepreneurs create opportunities using indigenous knowledge. This question however emphasises and relies mainly on theoretical perspective and does not fully address the broader entrepreneurial innovation process or external factors influencing it.

3.2.3 What are the barriers and enablers of indigenous knowledge-based innovation among women entrepreneurs?

This question identifies financial, institutional, and socio-cultural factors that either support or hinder the integration of indigenous knowledge in business innovation. While it highlights key challenges, it does not explain the full mechanism of how indigenous knowledge is leveraged to drive innovation.

3.2.4 How does the "Bird-in-Hand" principle apply to indigenous knowledge in entrepreneurial innovation?

This question assesses how women entrepreneurs use personal identity, pre-existing knowledge, and networks to innovate. This question also focuses on a specific theoretical perspective but does not capture the broader dynamics of indigenous knowledge within entrepreneurship.

3.3 Main Research Question

How does the indigenous knowledge of South African women entrepreneurs influence their entrepreneurial innovation approaches?

This question seeks to explore the role of indigenous knowledge in shaping the innovation strategies of women entrepreneurs in South Africa. The aim of the question is to understand how indigenous knowledge systems (IKS) contributes to innovation. It also examines whether indigenous knowledge provides a competitive advantage and how it interacts with modern business practices. From a theory perspective, this study examines indigenous knowledge through the lens of effectuation theory, particularly the "Bird-in-Hand" principle, which emphasises the use of existing resources in opportunity creation. Additionally, through this, the study supports the argument that indigenous knowledge explores the use of such knowledge as a strategic resource that drives innovation.

By adopting the focus of this research question, the study also moves beyond theoretical abstraction and engages with the real-world experiences of women entrepreneurs. It acknowledges the practical challenges they face while demonstrating how indigenous knowledge contributes to resilient and adaptive business models. This research question hereby informs all themes that emerged from literature.

3.4 Conclusion

This chapter presented the background that informed the formulation of the main research question and how it links back to theory. The research question provides further and deeper understanding of the study, which contributes to the understanding of the influence of IKS on entrepreneurial innovation.

Chapter 4: Research Methodology and Design

4.1 Introduction

This chapter delineates the research design adopted to address the research question articulated in Chapter 3. The study employed a qualitative research approach to examine the entrepreneurial innovation of South African women entrepreneurs and its influence on indigenous knowledge systems. Saunders and Lewis (2018) recommend that an exploratory approach in this case as the study seeks to investigate these underserved and relatively uncharted territories. An exploratory approach is particularly suited to research areas where limited knowledge exists, or where current understanding is fragmented and insufficient (Saunders & Lewis, 2018). Further to this, qualitative research offers several advantages, including the ability to investigate phenomena within their natural contexts, thereby capturing rich, contextual insights (Basias & Pollalis, 2018).. It also facilitates an in-depth exploration of the complexity inherent in the subject matter and enables the examination of phenomena within unfamiliar theoretical frameworks (Basias & Pollalis, 2018).

The data was gathered through semi-structured interviews conducted with participants from the selected sample. Following data collection, the responses were systematically coded and categorised into themes, enabling comparative analysis against the existing literature in the discussion section. This section also details the processes undertaken to ensure data validation, reliability, and ethical integrity, while acknowledging the study's limitations.

4.2 Purpose of research design

Exploratory research was particularly valuable in this study, as it allowed for an open-ended investigation of indigenous knowledge's role in entrepreneurial innovation, rather than testing pre-established hypotheses. The study explored the relationship between various constructs that influence the phenomenon of entrepreneurial innovation and therefore exploratory research was suitable for use in the study (Saunders & Lewis, 2018). The also study emphasised the gap in literature regarding the topic as well as the current development of effectuation theory. An exploratory approach was suited in this cases as it addresses areas of research where there is gaps in the knowledge and current knowledge is insufficient (Saunders & Lewis, 2018).

The study further investigated a context-specific, being South African women entrepreneurs and sought to uncover nuances and insights within throughout the research. Qualitative research is an appropriate methodological choice in investigating such a topic (Basias & Pollalis, 2018). This study aimed to investigate both the processes (the 'how') and the underlying reasons (the 'why') behind the ways in which South African women entrepreneurs integrate indigenous knowledge into entrepreneurial innovation (Tenny et al., 2017). Given the complexity of capturing experiences, perceptions, and adaptive strategies through quantitative methods, a qualitative and exploratory approach was chosen (Tenny et al., 2017). This methodology allowed participants to articulate their thoughts, emotions, and lived experiences in their own words, providing deeper insights into how they apply indigenous knowledge in business practices, navigate challenges, and develop innovative solutions within their unique socio-economic contexts (Tenny et al., 2017). By facilitating a more flexible and open discussion through semi-structured interviews, this approach ensured a richer, more nuanced understanding of how indigenous knowledge shapes entrepreneurial decision-making.

4.2.1 Philosophy

This study adopted an interpretivist research philosophy, which was well-suited to examining the subjective experiences and interpretations of women entrepreneurs. Rooted in the epistemological assumption that reality is socially constructed, interpretivism sought to understand human behaviour through the lens of individuals' lived experiences rather than through objective measurements (Carminati, 2018; Saunders & Lewis, 2018). Unlike positivist approaches, which focused on establishing causal relationships and predicting outcomes (Tomaszewski et al., 2020), this paradigm facilitated an in-depth exploration of the ways in which women entrepreneurs constructed and ascribed meaning to their entrepreneurial activities within the framework of indigenous knowledge systems.

The decision to employ an interpretivist approach was underpinned by the study's objective to capture the complexity and contextual specificity of entrepreneurial innovation among South African women. Given that indigenous knowledge was inherently dynamic, fluid, and deeply embedded in cultural practices, it was best examined through qualitative methodologies that prioritised depth over breadth. Consequently, this study relied on semi-structured interviews, allowing participants to articulate their experiences, challenges, and insights in a manner that reflected their lived realities. This methodological choice ensured that the data collection process remained flexible and responsive, enabling the researcher to probe deeper into emergent themes that may not have been initially anticipated.

In terms of data analysis, the interpretivist lens allowed for a nuanced and contextually embedded interpretation of findings. The thematic analysis of interview data facilitated the identification of recurring patterns while remaining sensitive to the distinctiveness of individual narratives.

4.2.2 Approach

The study aimed at constructing patterns, categories, and themes from using a "bottom-up" approach (Saunders & Lewis, 2018, p. 113) and therefore followed an inductive approach (Creswell & Creswell, 2017). This inductive approach allowed for the emergence of insights from specific observations, which can then be developed into broader, more generalisable theories (Saunders & Lewis, 2018). Inductive reasoning is frequently associated with qualitative research, as it entails deriving theories from the data (Hsieh & Shannon, 2005). The process was not about testing pre-existing hypotheses but about allowing the data to guide the development of theoretical frameworks, thereby contributing to existing theory.

The bottom-up approach advocated by Strauss and Glaser involves a systematic process of coding and categorisation, where patterns and themes are identified as they emerge from the data (Grodal et al., 2021). Understanding that the study required to frame new insights to theory from the participants' responses as data, the research required a method that could fully capture the complexity of the study, and the data collected. This study represents an intersection on various constructs, with an interplay between technical and social dimensions. An inductive approach is particularly well-suited for research in areas where existing theories may not fully capture the complexity of the problem and the specificity of the context, as is the case with the study of indigenous knowledge among South African women entrepreneurs (Eisenhardt et al., 2016)

4.2.3 Methodological choices

The study aspired to generate "deeper and richer data than may result from the use of a single method" (Saunders & Lewis, 2018, p. 128) by employing a multifaceted approach to data collection. The study relied on a mono qualitative method. Although this method often critiqued for its potential limitations in capturing the full complexity of the research subject, this study leveraged the strength of a primary method research approach to enhance the depth of understanding. The primary method for obtaining data consisted of semi-structured interviews. These semi-structured interviews were designed to provide flexibility while allowing for in-depth exploration of the participants' experiences and insights. Furthermore, additional data was gathered from the entrepreneurs' brochures, press coverage, artefacts, - through photographic evidence. These additional sources offered valuable contextual information and helped in to triangulating the findings from the interviews.

4.2.4 Strategy

The research explored and described the individual’s stories about their entrepreneurial experiences (Tomaszewski et al., 2020), hereby making narrative inquiry a suitable approach for this research (Saunders & Lewis, 2018). The study allowed for a deep understanding of how individuals construct and convey their personal stories, and how these narratives relate to and reflect their lived experiences (Saunders & Lewis, 2018).

The study involved examining a cultural element within their stories and how it shapes their entrepreneurial practices, hereby seeking to investigate the purpose of what indigenous knowledge serves in the participants stories and often, a narrative inquiry is suitable for such instances (Saunders & Lewis, 2018). The study further explored the ways in which the participants interpreted and made sense of their personal narratives regarding the topic and assesses how these stories intertwined with the realities of their lives (Crawford et al., 2021). The study focused on the subjective and often complex nature of personal storytelling with regard to the research topic, and narrative inquiry provided a rich and nuanced perspective on how individuals understood and articulated their experiences.

Given the study's focus, particularly in relation to indigenous knowledge and entrepreneurial innovation, the researcher considered narrative inquiry to be the most appropriate research strategy. This method not only corresponded with the research objectives but also guaranteed that the participants' perspectives and experiences which were key in line with the research approach as well.

4.2.5 Time Horizon

The research used cross-sectional research design due to time constraints. Even though this allowed the capturing of data at one period of time, the research strategy allowed the data being collected to represent the past, present and the future. The data was collected from one period of time for entrepreneur women of different backgrounds within South Africa and captured the phenomenon at a particular point in time (Saunders & Lewis, 2018).

4.3 Research Methods

4.3.1 Population

The population under study consisted of women entrepreneurs in South Africa who have run their own businesses. These women represented various industries, business sizes, enterprise stages.

4.3.2 Unit of Analysis

The unit analysis was the individual South African women entrepreneurs and their life experiences, as interpreted by (Dieumegard et al., 2021). The focus was on their background, entrepreneurial activities and innovative practices.

4.3.3 Sampling Method and Size

This study employed a non-probability, purposive sampling approach, enabling the selection of participants most likely to provide meaningful insights into entrepreneurial innovation and the integration of indigenous knowledge among South African women entrepreneurs (Hsieh & Shannon, 2005). This method was particularly suited for this study research, where the goal was to obtain an in-depth, contextual understanding rather than broad generalisations.

The sample was purposively chosen to highlight contrasting perspectives. Participants were selected to reflect diverse perspectives across age, cultural background, socio-economic status, educational attainment, and industry sector. The study included women aged 18 and older to capture generational differences in entrepreneurial innovation and indigenous knowledge transmission. These variations helped illustrate how practices evolve over time, influenced by different life stages and experiences. Given Gauteng's socio-economic diversity—ranging from rural to urban environments—the sample included entrepreneurs operating in different economic landscapes. By incorporating participants from various business sizes and impact levels, the study ensured representation from grassroots ventures to larger enterprises.

The selection process prioritised diversity in several key areas. Cultural backgrounds were considered to explore how indigenous knowledge is influenced by heritage. Business sectors covered both service-oriented (B2B and B2C) and product-based enterprises. Enterprise size was considered, representing small-scale initiatives to established businesses with larger economic reach. Indigenous knowledge integration was another crucial criterion, with a focus on those actively preserving, adapting, and applying indigenous knowledge within their business models. This deliberate sampling strategy enabled a holistic understanding of women's entrepreneurial experiences, avoiding a one-sided narrative. By engaging with women from varied backgrounds, the study captured different applications of indigenous knowledge in entrepreneurship.

The approach in this study differed from a similar investigation by Williams et al. (2022) who explored entrepreneurial innovation in Ethiopia. In this study participants were primarily identified through business incubators in Addis Ababa and personal networking. This method inherently limited the participant pool to those affiliated with formal entrepreneurship networks. In contrast, this study expanded its scope to a broader spectrum of entrepreneurs, including those operating in market settings, informal street-side ventures, and self-initiated enterprises. A snowball sampling technique was used, where initial participants referred additional entrepreneurs, ensuring a more diverse and representative sample.

Despite these efforts, some challenges arose during the sampling process. Participant availability was a significant issue, as some women initially expressed interest but ultimately did not engage. Time constraints also played a role, with many interviews rushed due to participants prioritising their business operations. Additionally, some potential participants opted out when they realised that product purchases would not be made in exchange for their interview participation.

Qualitative research prioritises deep insights into participants' cultural categories, assumptions, and lived experiences rather than quantifying how many people share such beliefs (Varpio et al., 2021). The emphasis is on obtaining the right profile of participants rather than reaching an arbitrary number of interviews. Research suggests that eight high-quality interviews can be sufficient to generate meaningful insights (McCracken &

McCracken, 1988). However, a common benchmark for data saturation is at least twelve interviews, where no new themes or findings emerge from additional data collection (Boddy, 2016). In this study, the guide by Varpio et al. (2021) was followed where the number of interviews exceeded twelve and were guided by the variety and heterogeneity of the sample.

Given the diversity of participants—spanning different ages, business models, and industries—a slightly larger sample was employed to ensure all relevant themes and variations were adequately explored. After 29 interviews, new codes became negligible and the adequacy of the sample size capturing key insights was sufficient. Throughout the research, theoretical saturation (Vasileiou et al., 2018) was assessed, ensuring a balance between depth of insight and sample diversity. The interviews were open-ended and consisted of the shortest interview being eight minutes and the longest one being 60 minutes.

Several challenges emerged during the sampling process, requiring adaptations. Language barriers posed a difficulty, as certain business terminologies were difficult to convey in indigenous languages such as isiZulu and Sepedi, despite the researchers'' ability of being able to translate and understand this language. Many participants naturally reverted to "vernacular" when discussing complex concepts, requiring careful interpretation to retain meaning. Interview dynamics also varied, with some participants preferring a conversational, anecdotal approach rather than structured questioning that formed part of the semi-structured interview guide. This, however, often-provided richer insights than rigidly following the interview guide.

4.3.4 Measuring Instrument

A semi-structured interview guide was designed to maintain consistency in questioning while allowing room for further exploration of unanticipated or insightful responses. This approach ensured that all participants responded to a standard set of open-ended questions while enabling deeper inquiry into emerging themes. The interviews centred on understanding the type of knowledge and its role in the participants' ventures, how they use such knowledge in their milestones and challenges in the order to innovate.

The semi-structured interview was also selected for its flexibility in capturing the lived experiences of South African women entrepreneurs and their application of indigenous knowledge in entrepreneurial innovation. This method facilitated a conversational flow, allowing participants to articulate their insights while enabling the researcher to probe deeper into emerging themes. Given the deeply embedded nature of indigenous knowledge within cultural and entrepreneurial practices, this approach ensured that participants could share narratives, experiences, and perceptions in their own words, offering rich qualitative data that might not be captured through rigid, structured formats (Garrels et al., 2022).

Semi-structured interviews are sometimes criticised for subjectivity and validity concerns, this study employed triangulation to enhance data reliability and credibility. In addition to interviews, secondary data sources such as brochures, press coverage, and photographic evidence of artifacts were examined to contextualise findings and corroborate participants' responses (Basias & Pollalis, 2018). This format however also helped maintain researcher neutrality, as the interviewer deliberately maintained an interpretive distance from participants' perspectives while encouraging them to express their authentic experiences without researcher bias (McCracken & McCracken, 1988).
The semi-structured interviews also resembled a study by Murphy et al. (2020), semi-structured interviews were used to explore community-engaged Indigenous entrepreneurship research. Similarly to the measuring instrument in that study, semi-structured interview topics in this study were framed to explore both short- and long-term entrepreneurial opportunities and challenges while also investigating coping mechanisms and strategies used to sustain business success. Another case in use of semi-structured interviews as measuring instruments a study by Živojinović et al. (2020), where the researchers successfully applied in semi-structured interviews examining rural entrepreneurship, innovation systems, and traditional knowledge integration. In their study on forest-based rural entrepreneurs, they found that this method facilitated the understanding of how innovation emerges through experiential knowledge-sharing and traditional skills adaptation, similar to how indigenous knowledge shapes business innovation in this study.

Despite the structured outline of the interview guide and protocol, some participants adopted a more "freestyle" approach. These instances allowed for a more reflective approach and oftentimes, in these instances, the initial question regarding their business history, motivations, and sector involvement often set the tone for the entire conversation. Such interviews frequently yielded deeper insights, allowing the discussion to evolve organically. In many cases, respondents sought to illustrate their answers with examples and real-world applications, effectively reframing the original question. Others incorporated personal anecdotes, revealing nuanced perspectives and emotions that might not have surfaced through a rigid questioning format.

4.3.5 Data Collection

In the semi-structured interviews, data was collected through narratives from participants in response to open-ended questions, aligned with key topics covered in the discussions. The study followed an interpretive approach to examine the entrepreneurial innovation processes and activities of women within the Gauteng region, South Africa.

Initially, the study aimed to conduct interviews across various all nine provinces in South Africa to ensure a broad and representative range of entrepreneurial experiences. However, due to time, financial, and logistical constraints, an alternative strategy was adopted to ensure inclusivity without over-representing any single region.

Gauteng was chosen as the primary research location because of its economic significance, diverse business landscape, and socio-economic variety, making it an ideal setting for studying entrepreneurial innovation. As the economic hub of South Africa, contributing 30% of the country's GDP(Meyer, 2023), Gauteng is home to high levels of entrepreneurial activity and business development (Ndweni et al., 2019). The province also offers a diverse mix of rural, peri-urban, suburban, and urban communities, socio-economic diversity, encompassing individuals and businesses from rural, peri-urban, suburban, and urban environments (Howe, 2018). This ensured that both disadvantaged and affluent entrepreneurial communities were represented, contributing to a well-balanced and inclusive study. The presence of diversified business industries (Meyer, 2023) also represented and insights gained from Gauteng are likely to be applicable to other provinces and contribute to broader discussions on the research topic. By selecting Gauteng, the study ensured a well-rounded analysis of entrepreneurial experiences, offering findings that are both relevant and scalable.

One of the primary challenges encountered was ensuring that all interviews were conducted in person. While some participants were available for face-to-face discussions, others had conflicting schedules and personal commitments that made physical meetings difficult. Consequently, a hybrid approach was implemented, combining both in-person and online interviews. Some interviews were conducted via

Microsoft Teams and Google Meets, particularly for participants who were unavailable for extended in-person discussions.

Another challenge related to notetaking and recording interviews. During online interviews, manual notes were easily taken on a spreadsheet to support the transcription process. However, in-person interviews presented additional difficulties, particularly when conducted in dynamic environments such as streets or business locations. In one instance, an interview took place on the street, and the recording was done using the interviewer's smartwatch to ensure the security of larger electronic devices such as laptops and phones. Additionally, when interviews were conducted at business premises, brief photographs of the participants' stand were taken to provide supplementary context and validation of the data.

To ensure the study's credibility, participants were given an Informed Consent form (Appendix 3) before the interviews commenced. This clarified the voluntary nature of their participation and guaranteed their anonymity. Ethical approval for the research was secured prior to conducting any interviews.

Several measures were implemented to uphold data reliability and validity. Semi-structured interviews provided consistency across respondents while allowing them to share their perspectives in detail. An interview guide was utilised to maintain a structured approach in accordance to recommendations of Kothari (2004). To ensure accuracy, all interviews were digitally recorded and later transcribed, with the data stored in compliance with research protocols. Additionally, triangulation methods, including direct observations, field notes, and photographic evidence where relevant, were employed to enhance the study's credibility and minimise researcher bias (Glinyanova et al., 2021).

It was of importance to ensure that study strived for inconspicuousness and that throughout the interviews, participants feel comfortable and unaffected by the researcher's presence (Ruslin et al., 2022). In line with this, interviews were primarily participant-led, with minimal intervention from the researcher to maintain focus on the study's objectives. Participants were encouraged to continue sharing insights until data saturation was reached, ensuring all emerging themes were fully examined.

4.3.6 Data Analysis Approach

This study applied a thematic analysis approach with an inductive coding method to systematically explore emerging concepts. To manage and organise qualitative data effectively, ATLAS.ti was utilised. Since some of the interviews were conducted in languages other than English, an additional translation process was required before transcription and analysis. The step was crucial in maintaining the authenticity of participants' expressions while allowing for a consistent coding framework. Once transcriptions were complete, the data was cleaned, removing irrelevant filler words while retaining the participants' intended meaning.

The study adopted the thematic analysis guidance and frameworks from Braun and Clarke (2006, 2021); Byrne (2022) to identifying, refining, and interpreting patterns within the data. Analysis commenced at the end of the data collection allowing for a holistic approach in theme identification and relationship identification between the themes.

The next step involved coding, where significant portions of the data were labelled with descriptive terms to facilitate thematic categorisation. The the study identified first-order concepts, second-order themes, and aggregate dimensions (Gioia et al., 2013). The first phase involved familiarisation with the data, where the translated and transcribed interviews were reviewed multiple times to develop a deep understanding of the content. This was followed by the initial coding phase, where key data segments were assigned codes based on their relevance to the research focus. These codes were systematically organised to ensure consistency.

The third phase focused on identifying themes, where similar codes were grouped together into broader categories. This required a detailed review to eliminate redundancies and establish connections between related ideas. Once themes were identified, the next phase involved refining and reviewing them to ensure clarity, coherence, and alignment with the research objectives. The themes were then defined and named, ensuring that each had a clear conceptual distinction. The final phase of the analysis involved interpreting and presenting the themes in Chapter 5, where key findings were structured in a way that highlighted their significance. The study also includes a visual representation of the coding process in Appendix 2, in the form of a thematic maps to illustrate relationships between the codes and themes.

4.3.7 Quality Controls

Quality controls in qualitative research are essential for ensuring that the findings are meaningful, credible, and applicable (Stiles, 1993). Biases related to the research participants may exist and can therefore influence data collection and interpretation (Stiles, 1993). It is therefore key for the research to engage in reflexivity, which plays a crucial role by allowing researchers to recognise and mitigate their biases (Stiles, 1993).

4.3.7.1 Data Construction: Selection

Respondents were selected from various socio-economic settings, including rural, peri-urban, suburban, and urban areas, to capture a broad-spectrum voice. To accommodate logistical constraints, methodological adjustments were made to maintain balanced representation. Throughout the interviews, participants were encouraged to lead discussions, while interview reflections and reiterative coding processes were used to deepen data interpretation. The study further employed a "covering all bases approach" to enhance transferability of results by ensuring a diverse representation of participants.

4.3.7.2 Data Transcription

All interviews were fully transcribed to ensure comprehensive data documentation. Online interviews were supplemented with detailed notes, whereas in-person interviews were enriched with photographic evidence of various artefacts related to business operations.

4.3.7.3 Rigour / Transparency

To uphold rigour and transparency, the study incorporated direct quotations from participants in the findings section *(see Chapter 5),* aligning responses with emergent themes (Johnson et al., 2020). An inductive qualitative approach was applied, allowing themes to emerge naturally from the data, rather than imposing themes through predefined frameworks (Saunders & Lewis, 2018). This approach ensured that findings remained grounded in participants' lived experiences, prioritising an emic perspective (insider view).

4.3.7.4 Dependability

A rough schedule was maintained, documenting all interview schedules, participant details, and business information. This included information on various industries represented in the sample, business sizes, socio-cultural and economic factors of participants, notes and emerging codes from the data analysis. The audit trail also recorded how frequently themes appeared and noted the point of saturation, ensuring reliability and consistency in the data collection process.

4.3.7.5 Ethicality

The study adhered strictly to ethical considerations. Informed consent was obtained from all participants, and voluntary participation was emphasised. Participants declined interviews in cases where they expected payment or product purchases in exchange for their time. In some instances, interviews were rushed due to business commitments, and in other cases, entrepreneurs declined participation entirely. The study ensured that no undue influence was applied to obtain data, reinforcing ethical integrity.

4.3.7.6 Transferability

The study adopted a purposive sampling approach, selecting women entrepreneurs from age 18-30 in the South African context. By focusing on Gauteng, the study aimed to diversify insights and produce findings applicable to other emerging market contexts, particularly those where women entrepreneurs leverage indigenous knowledge in their business activities. The study also compared its findings with similar research conducted in Ethiopia (Williams et al., 2022) and indigenous entrepreneurship studies in Toquaht Nation (Murphy et al., 2020) where similar constructs and theories were used, ensuring broader applicability of the results.

4.3.7.7 Credibility, Validation, and Confirmability

The coding process ensured data saturation, meaning no additional themes, insights, or codes emerged beyond a certain point. To enhance validation and credibility, the study employed data triangulation by cross-referencing interview findings with social media sources (LinkedIn, Facebook, Instagram) to verify participant-reported milestones, product sales, and service offerings. Throughout the interviews, participant responses were repeated back to them to confirm accuracy and interpretation.

Additionally, reflexivity was maintained by encouraging participants to elaborate further on specific responses. The interview guide was consulted throughout to ensure consistency in questioning and probing. The additional artefacts and photos which formed part of the data collection process also enhanced the credibility of the study. The use of direct participant quotations in *Chapter 5* of the study also further strengthened credibility by ensuring that participant voices were accurately represented, and interpretations remained grounded in authentic narratives.

To ensure confirmability, the study followed an inductive approach, allowing findings to emerge naturally from the data rather than being influenced by researcher bias. Furthermore, a rough and detailed audit trail was maintained throughout the research process.

4.3.8 Limitations

As a qualitative inquiry, the research was inherently subjective, given that data collection and interpretation were influenced by the researcher's perspectives, prior experiences, and potential biases (Lim, 2024). The researcher, who served as the primary instrument in data collection, lacked professional training in conducting interviews, which may have had implications for the accuracy and consistency of the findings. Furthermore, qualitative research typically involved small sample sizes, which inherently limited the generalisability of results to broader populations (Williams et al., 2022).

A further limitation concerned the geographical scope of the study. The research was conducted within a particular region in South Africa, potentially introducing geographical bias and limiting the applicability of findings to other areas with distinct socio-economic and cultural conditions (Williams et al., 2022). Additionally, time and resource constraints influenced the study's design and execution. Qualitative research was inherently time-intensive, requiring extensive engagement with participants through in-depth interviews, observations, and rigorous data analysis. These constraints may have restricted the breadth and depth of data collection, potentially affecting the comprehensiveness of the study. Moreover, qualitative data analysis was inherently open to interpretation, raising concerns regarding the reliability and consistency of results. The subjectivity inherent in qualitative research, while valuable for deep contextual understanding, also presented the risk of interpretative variability, which could have influenced the study's conclusions.

Another limitation of the study was its reliance on a cross-sectional research design, which captured data at a single point in time. While this approach allowed for a snapshot analysis of Indigenous knowledge and entrepreneurial innovation, it did not account for changes over time. A longitudinal study would have provided deeper insights into the evolving nature of Indigenous knowledge-based entrepreneurship and the ways in which these businesses adapted to shifting economic and market conditions. Additionally, the methodological approach employed in the study, which prioritised qualitative data collection, may have restricted the scope of insights that could have been obtained through a mixed-methods approach.

The theoretical framework adopted in this research, effectuation theory, also presented certain constraints. Effectuation theory, which emphasised leveraging existing resources for entrepreneurial innovation, was particularly relevant to this study; however, it may not have fully accounted for alternative entrepreneurial strategies that emerged in Indigenous knowledge-driven enterprises. Other frameworks, such as bricolage theory, which focused on overcoming resource constraints through creative adaptation, could have provided complementary insights into how Indigenous entrepreneurs navigated economic and institutional limitations. The study’s theoretical scope was therefore somewhat constrained by its singular focus on effectuation, potentially overlooking other perspectives that might have enriched the analysis of Indigenous knowledge-based entrepreneurial innovation.

Chapter 5: Findings and Results

5.1 Introduction

This chapter presents the findings of the research conducted with South African women entrepreneurs, focusing on the role of Indigenous Knowledge Systems (IKS) in shaping entrepreneurial innovation. The study investigates how these entrepreneurs leverage traditional knowledge as a resource for business. The sample consists of 29 women business owners from diverse sectors, ensuring a comprehensive exploration of the interaction between indigenous knowledge and modern business practices.

The key findings are structured around the research questions outlined in Chapter Three and are further informed by the semi-structured interview guide detailed in Appendix One**.** This approach ensures alignment with the study's objectives and thematic analysis framework. The results are presented according to the research questions, demonstrating how women entrepreneurs incorporate indigenous knowledge into their innovation strategies, the barriers and enablers influencing this process, and the broader implications for entrepreneurial ecosystems.

The chapter begins with a description of the study participants, followed by a chronological presentation of findings based on the themes. This structure ensures a clear and systematic analysis of how indigenous knowledge informs entrepreneurial innovation and business growth in South Africa.

5.2 Study of Participants

Table 1 presents a study of the research, indicating their respective business, business size, industry, clientele served and their age group. Table 1 contains a list of the participants who took part in the study. To protect their anonymity, each participant has been assigned a code, with "Participant" followed by a number denoting the sequence in which the interviews were conducted. For instance, Participant 1 was the first interviewee, while Participant 29 was the last. The demographic and business information presented here provides insights into the entrepreneurial characteristics of the participants, aligning with the study's focus on Indigenous Knowledge Systems (IKS) and their role in entrepreneurial innovation among South African women entrepreneurs.

The participant sample consists of a diverse group of women entrepreneurs operating in various industries, including professional services, health and wellness, agriculture, technology, manufacturing, fashion, hospitality, and food production. Business sizes range from small to large, with clientele spanning B2C, B2B, and mixed B2B/B2C models. A key aspect of the participant pool is the reliance on indigenous knowledge in different business areas.

The age distribution of the participants varies, with most falling between 25 to 50 years. A majority of these women entrepreneurs hold at least some tertiary education, while others have relied on experiential learning and indigenous knowledge transmission.

Two outliers were identified in this sample these parameters, reflecting larger business operations that successfully leverage indigenous knowledge for scalable enterprise growth. This diversity in business scale allows the study to assess the role of indigenous knowledge in both survivalist entrepreneurship and high-growth, innovation-driven businesses. Additionally, some businesses operate in highly competitive environments, requiring adaptive business models that integrate indigenous knowledge with modern entrepreneurial practices.

Table 1: Interview Participants Table:

Participant Number (Code)	Type of Business	Industry	Size of Business	Clientele	Age Group	Interview Length	Transcript: Number of Pages	Transcript: Number of words
Participant 1	Private Education	Professional Services	Small	B2C	25-30	28:13:00	6	3 674
Participant 2	Bush Camp / Lodge	Hospitality/Tourism/Agriculture	Small	B2B/B2C	35-40	60:12:47	14	11 286
Participant 3	E-hailing / Venture Capital	Technology	Medium	B2B/B2C	25-30	60:02:50	14	10 577
Participant 4	Business Consulting	Professional Services	Small	B2B/B2C	40-50	51:30:00	10	7 254
Participant 5	Personal Coaching	Professional Services	Small	B2B/B2C	40-50	42:22:00	9	7 004
Participant 6	Creative Music Agency	Professional Services	Small	B2C	30-35	42:53:00	8	6 371
Participant 7	Bakery	Food	Medium	B2B/B2C	40-50	29:51:00	6	4 857
Participant 8	Tea Manufacturer	Manufacturing/Food	Large	B2B/B2C	35-40	40:30:00	8	6 436

Participant 9	Specialist Psychiatrist (Neuropsychiatry)	Health and Wellness	Medium	B2C	40-50	50:16:00	10	7 271
Participant 10	Bakery and Farming	Agriculture/Food	Large	B2B/B2C	35-40	53:41:00	11	8 168
Participant 11	Clothing Designer A- Specialised Designs	Fashion	Small	B2C	30-35	54:01:00	11	8 381
Participant 12	Bakery	Food	Medium	B2B/B2C	30-35	27:49:00	3	2 152
Participant 13	Social Entrepreneurship: Tech-driven charitable giving and community empowerment.	Technology/ Social Entrepreneurship	Medium	B2B/B2C	30-35	31:07:00	5	3 550
Participant 14	Agribusiness Ecosystem App	Agriculture/Technology	Medium	B2B	30-35	45:40:00	10	7 233
Participant 15	Social Entrepreneur: Menstrual Products	Health and Wellness/Social Entrepreneurship	Medium	B2B/B2C	30-35	45:34:00	9	6 266

Participant 16	Clothing Designer B - Retail Boutique	Fashion	Small	B2B/B2C	40-50	36:52:00	7	5 117
Participant 17	Organic handcrafted Cosmeceuticals.	Health and Wellness/ Pharmaceuticals	Medium	B2C	30-35	60:10:54	14	11 004
Participant 18	Preserved Foodstuffs	Food	Small	B2C	40-50	7:56:00	2	1 324
Participant 19	Creative ceramic painting restaurant.	Food/Hospitality/Crafts	Large	B2B/B2C	30-35	17:41:00	4	3 003
Participant 20	Royal Beading and Crafts	Crafts	Small	B2B/B2C	30-35	25:03:00	5	3 578
Participant 21	Cooked Mielie Vendor	Food	Small	B2C	50-60	34:20:00	7	5 106
Participant 22	African Library and Bookstore	Professional Services	Small	B2B/B2C	40-50	22:53:00	5	3 665
Participant 23	Organic Hair Products	Health and Wellness/ Pharamaceuticals/ Manufacturing	Medium	B2B/B2C	25-30	33:32:00	7	5 094

Participant 24	Clothing Designer C - Specialised Designs and Retail	Fashion	Small	B2C	25-30	37:52:00	7	5 246
Participant 25	Yoga Studio	Health and Wellness	Small	B2B/B2C	30-35	50:31:00	8	6 021
Participant 26	ICT and Consulting	Technology/ Professional Services	Large	B2B	30-35	19:23:00	2	1 229
Participant 27	Indigenous Snacks and Foods	Indigenous Snacks and Foods	Small	B2B/B2C	35-40	51:53:00	9	7 013
Participant 28	Cosmeceuticals (Tech)	Technology/ Health and Wellness/ Pharmaceuticals	Small	B2C	30-35	60:04:11	14	10 072
Participant 29	HealthTech	Technology/Health and Wellness	Small	B2B/B2C	30-35	60:13:27	17	12 645

5.3 Analysis of Data

The method used an inductive coding approach for data analysis to identify and clarify the connections between emerging concepts. The interviews were listened to and transcriptions cleaned up for the coding process to commence. This included removing interjections and correcting various grammar and spelling errors. Through the semi-structured interviews, participants engaged openly and were therefore allowed to genuinely express their experiences to assist the study in understanding the role of indigenous knowledge on their entrepreneurial innovation (Gioia et al., 2013). For example, the study obtained more insights from asking participants various open-ended questions regarding opportuning milestones and overcoming challenges, rather than simply posing the question on "how they innovate". The study adopted a thematic analysis approach, and this process comprised of three stages being first-order concepts, second-order themes, and aggregate dimensions.

5.4 Coding Process and Theme Development

Table 3 indicates the emerging data structure along with the resulting aggregate dimensions. Appendix 2 shows the full codes (first order concepts), together with the second-order themes and aggregate dimensions. In alignment with our interview protocol and focus on respondents' narrative experiences throughout their journey, the aggregate dimensions exhibited a temporal nature. The study adopted an open coding process to ensure that themes emerged organically from the data, allowing for a data-driven rather than theory-driven interpretation. Codes were generated using Atlas.ti from participants' narratives, ensuring that the analytical process remained in line with their lived experiences. Through this process, patterns and recurring ideas were identified, reflecting the varying interpretations of key research questions by interviewees. This reflexive and organic approach led to the grouping of the initial codes into broader conceptual categories, encapsulating distinct but interrelated dimensions of indigenous knowledge and entrepreneurship.

The second order themes that emerged from this stage were as follows:

5.4.1 Knowledge and Learning

Entrepreneurs identified knowledge and learning in different forms as key input in solving challenges and harnessing milestones in their businesses. Key codes that arose within this category included and were not limited to "knowledge is out there", education and formal training, industry knowledge, knowledge from family and client learning.

5.4.2 **Entrepreneurial Adaptation and Business Growth Strategies**

Further to the knowledge inherited, participants applied different methods and strategies to adapt their knowledge and position it for business success. This category included codes such as “covid-19”, “digital/online/AI”, “internationalisation”, “pivot”,” trends”, “experiment”.

5.4.3 **Professional Experience**

Another key aspect of the interviews included the participants experience and this arose from the broader aspect of how they started their businesses, when they started and the motivation behind starting their own ventures. Key codes in this category included “general management”, “unemployable”, “previously employed”, “juggling”, “early exposure to business and “early exposure to business/entrepreneurship”.

5.4.4 **Financial and Economic Factors**

This category arose from the key milestones, challenges and other aspects of the success of the participants enterprises. This second order theme also arose as part of the key barriers in the success or failure of a business and acknowledgement of the participants ways of innovating – whether their methods led to funding milestones. The key codes under this category included “funding/investment”, “free natural resources”, “land rights/ownership”, “value”.

5.4.5 **Social & Community Influence on Business**

As the study commenced, one of the key points to address was the influence of socio-cultural norms and the importance of context in the entrepreneurial journey. This was also a key element within the study, particularly when addressing challenges. Key and emergent codes within this category included “Ancestors/Prior generations”, “merge of different cultures”, “upbringing”,” stokvels”, “gender”.

5.4.6 **Entrepreneurial Mindset & Business Leadership**

This code was informed by the participants' traits as well as their leadership qualities, which were presented through the data. From their stories, participants’ own analysis of their challenges, along with the qualities they demonstrated to achieve success, were all defined here. The recurring themes of innovation, decision-making, and problem-solving align with both leadership qualities and an entrepreneurial mindset. These traits reflect the ability to lead a business effectively while also identifying and capitalising on new opportunities, justifying the category 'business leadership and entrepreneurial mindset. This also included what emotions they experienced and certain nuances on how they expressed themselves throughout the interviews. Key codes within this category included “resilience and suffering”, “passion”,” visions and dreams”, “storytelling”, “inferiority/shy”.

5.4.7 **Systematic Barriers and Structural Challenges**

In the identification of challenges and milestones, these were the key challenges and milestones identified by the participant. This also added on to the contextual factors and setting that influenced the entrepreneurial activities of the participants and further highlighted the obstacles that they often face. Key codes in this category included “lack of women role models/platforms in business”, “barriers to entry”, “no desire to grow/scale”, “poor background”.

The approach of refining and consolidating categories into core themes, involved ensuring that the constructs were both robust and reflective of the nuances present within the data. A constant comparative analysis was employed throughout, coupled with iterative coding techniques that allowed for a systematic exploration of the data. This rigorous method provided the framework for understanding how disparate pieces of information converged into coherent, overarching themes. The analytical process not only identified the inherent structures within the data but also illustrated an interplay between an entrepreneur’s background and knowledge, their adaptive strategies, and the broader socio-economic context in which they operate.

5.5 The emergent themes identified from the second-order concepts were as follows:

5.5.1 “Inherited” knowledge and processes of learning are practical and key in business.

This theme captures the foundational resources entrepreneurs bring to their ventures, such as indigenous knowledge, family knowledge, local and industrial knowledge, and past professional experiences. This theme revealed that inherited or accumulated knowledge, whether acquired through family traditions, community interactions, or prior work engagements, serves as a vital asset in both guiding and triggering the innovation process. The focus was on the foundational elements of knowledge acquisition and transfer. Knowledge and Learning captured how entrepreneurs draw on formal education, industry expertise, and family/client insights. Professional Experience highlights personal career backgrounds, early exposure to business, and the motivation behind launching ventures. These two categories shared a common thread, indicating the motive on how the grouping occurred - they reveal how inherited knowledge (whether from family, community, or past work) guides and triggers the innovation process.

5.5.2 Adaptive Business Strategies and Innovation

Building on the foundational asset of inherited knowledge, the second theme of adaptive business strategies and innovation provides insight into the processes through which this knowledge is translated into practical action. This theme addresses the manner in which entrepreneurs utilise their pre-existing knowledge base to develop viable business strategies and foster innovative practices. The concept of entrepreneurial adaptation is central to this theme; it involves a range of activities designed to respond to market fluctuations, unexpected crises, and emerging trends. For instance, participants in the study often described how they pivoted their business models in response to economic challenges or leveraged digital technologies to stay competitive. The sub- themes of business growth strategies and financial as well as economic factors highlight the importance of resource allocation and funding in shaping adaptive responses. Where inherited knowledge would represent a noun, adaptive business strategies and innovation would represent the verb, the actual action that entrepreneurs partake in to leading to an output. Under this theme, the study explores the practical steps involved in the production of entrepreneurial innovation. Where the first theme explores the “what”, this one expands more on the “how”. This theme focuses on how entrepreneurs leverage their inherited knowledge (the asset) in real time to respond to changing markets, crises (e.g., COVID-19), or emerging trends (e.g., digital/AI) hereby activating the process of innovation.

5.5.3 Identity, Social Dynamics, and the Challenges of Entrepreneurship

This theme explores the broader structural and social factors that shape the entrepreneurial journey. This theme sets the environmental and personal backdrop against which the asset (inherited knowledge) is utilised, and the process (adaptive strategies) unfolds. It includes structural barriers, societal norms, gender considerations, and personal identity issues. The categories grouped under this theme consisted of contextual factors that either facilitate or impede the success that would result from the innovation process. The social environment, community influences, and personal identity either enable or limit how effectively inherited knowledge is used and how adaptive strategies are implemented. Systematic Barriers and Structural Challenges addresses the external obstacles—such as lack of role models, barriers to entry, and socioeconomic constraints—that entrepreneurs frequently encounter. Social & Community Influence on Business also plays a role here by revealing how cultural expectations, gender norms, and community networks can both support and hinder business development. Moreover, the interplay between an entrepreneurial mindset, leadership, and identity is also critical in this regard.

Overall, the themes above narrate a process where participants begin with a knowledge base (the asset).They translate that asset into business success through strategic adaptation (the process).Their success or struggles are mediated by external and personal factors (the context).This structure shows a logical flow—from what resources entrepreneurs have, to how they apply them, and finally where (under what conditions) this all takes place. In line with the interview guide, the questions interrogated the participants' context and motivations for starting their ventures and the challenges and milestones faced, this presented the background and context, the questions on how they harnessed their milestones and overcame challenges provided more context on their innovation process and adaptive strategies and questions on what knowledge was used and where they obtained the knowledge, provided the input towards the first theme.

5.6 Results

Evidence from the study suggests that indigenous knowledge is a fundamental resource that shapes entrepreneurial innovation in emerging markets, providing both strategic and operational advantages for business owners (Salmon et al., 2023). Moreover, this knowledge influenced not only the way entrepreneurs approached innovation but also how they structured and scaled their ventures in diverse and complex market environments. To the extent that indigenous knowledge embodies deeply rooted and experiential insights, it is hardly unpredicted that it permeates various aspects of entrepreneurial decision-making. This study, however, contributes to scholarship by examining how indigenous knowledge systems functions as a dynamic and evolving strategic asset, rather than a static or limiting force, within contemporary business ecosystems. The approach in line with our research objectives, indicated an integrated approach where knowledge was identified as an input in the activities of innovating and the context provided the nuances and conditions, that either enhanced or barred entrepreneurial innovation.

5.6.1 Theme 1: "Inherited" knowledge and processes of learning are practical and key in business.

The findings reveal a strong reliance on inherited knowledge, particularly indigenous and intergenerational knowledge, as a foundation for entrepreneurial success. Participants highlighted that indigenous knowledge, particularly from "BoKoko" (elder women in their communities), played an integral role in shaping their business processes. As Participant 27 articulates:

"*I believe that without the Indigenous knowledge of those women, my business is non-existence without them, I do not have a business because that they, you know, my business stands solely because of them. And now with the knowledge that I take from BoKoko, (grannies or aged community women) of how we do things and how we process certain things, how we get, especially with the plants, how we are supposed to cook it, how we are supposed to prepare it it's a certain way that we do it. I find that with the knowledge of BoKoko, that they pour into me to be able to process this thing, is the one that makes my business stand out." – Participant 27*

While there was common consensus among the responses confirm that many entrepreneurs actively incorporate indigenous knowledge into their business practices. However, an emerging trend shows that "inherited knowledge" extends beyond indigenous knowledge. Participants also referred to it as "local research," "learning from the client," "local knowledge," "kasi knowledge," "street knowledge," "being street smart," and "industry knowledge." This knowledge did not exist formally and was not immediately recognised, these terms were overarching terms used in the attempt of finding a suitable term to name this knowledge. Further to this, this knowledge was not only inherited but could be adapted depending on different settings and context "participant used the knowledge obtained from formal training in certain business settings and would use street knowledge when dealing with the government and in various tender processes.

"I've been exposed to both the streets and formal training, so it's crucial to understand what to take from each—and what to leave behind. After all, what's in the books

doesn't always apply on the streets, and vice versa. You have to be smart enough to know what to use, when to use it, and how to use it, depending on the circumstances. For example, imagine there's a tender worth a million rand on offer. I know I could get it, but my training tells me I shouldn't bribe anyone. As a human being trying to survive, what do you think a person is going to do?" – Participant 15

The study adopts this knowledge and terms it "inherited-adaptive knowledge" (IAK). Inherited knowledge suggests that it is knowledge that is consumed as it, whereas adaptive knowledge broadens the term and suggests its malleability, particularly as used by the participants as it is broad and is multifaceted. These various terminologies point to the dynamic and multifaceted nature of entrepreneurial learning.

Moreover, prior professional and corporate experience plays a crucial role in running a business. Participants who have worked in structured business environments benefitted from developed management skills, which provide them with knowledge they could easily transfer to their own business practices as it was already tried and tested to have worked. They are able to apply best practices in operations, budgeting, and leadership, allowing them to navigate the complexities of business ownership more effectively. Their ability to anticipate challenges, allocate resources wisely, and streamline business processes contributes to their long-term success.

"My transition into entrepreneurship stemmed from my corporate experience in business scaling and market expansion. I frequently led the launch of new products, services, and divisions, which later shaped my approach to entrepreneurship. Moving into consultancy, I worked closely with accomplished businessmen, gaining hands-on experience in building subsidiaries, business development, and strategy execution. I also became involved in capital raising, securing licenses, stakeholder management, and mergers and acquisitions. These experiences ultimately gave me the perspective and confidence to take the leap into entrepreneurship." – Participant 4

A recurring insight is the disconnect between formal education and real-world business application. Although most participants had received formal education, they did not directly apply their academic knowledge in their entrepreneurial pursuits. Instead, practical experience, mentorship, and intergenerational learning played a more substantial role. Interestingly, many mentors and key community figures within the participants' business networks had only basic education or vocational training, yet they excelled in business. This suggests that entrepreneurial success is influenced more by hands-on experience and mentorship rather than by academic qualifications alone.

Additionally, participants expressed that while formal education provided them with knowledge, those skills alone were insufficient in navigating the complexities of business operations. Entrepreneurship requires adaptability, risk-taking, and a problem-solving mindset—qualities that are often honed through real-life exposure rather than classroom instruction. Several respondents indicated that while they had degrees, the theories and models they studied did not fully align with the everyday demands of running a business. This directed to the need for updated pedagogy when approaching entrepreneurial education. The call was for education systems to integrate more practical, experience-based knowledge and learning opportunities into their curricula to better prepare individuals for entrepreneurial endeavours.

"I was tempted to go and register for a junior degree, but then I reminded myself that Tony Robbins doesn't have a psychology degree. If they can succeed, so can I. Lisa Nicole also doesn't have a psychology degree. So, I guess I needed to rework myself, reinvest in myself, and remind myself that many great people achieved success without traditional qualifications. I have an opportunity to do the same, even if I didn't take that academic path. I also recognise that I come from a generation where, before being acknowledged, you had to be academically qualified" – Participant 5

Intergenerational knowledge transfer was a key factor among participants, many of whom had prior exposure to entrepreneurship through their families. They observed their parents or grandparents engaging in business, often subconsciously absorbing entrepreneurial knowledge. Some participants admitted they did not initially recognise this knowledge as valuable, as it was inherently learned rather than formally taught. Notably, some struggled to name this form of learning, indicating a gap in how entrepreneurship terms are conceptualised and classified locally.

"I think some of the stuff, you see value in it as you grow older. My mother, though she had a government job as a payment clerk, was also an entrepreneur herself. She was selling clothes and detergents to supplement her income. She learned from her own mother, who, out of necessity, ran multiple small businesses while raising a large family as she married into a polygamist setting. Entrepreneurship was a survival skill, shaped by networks like stokvels, by women left to provide while men worked in the mines." – Participant 22

The mechanisms of this transfer varied. In some cases, knowledge was passed down through direct mentorship, where older family members actively taught younger generations about pricing, negotiation, and supply chain management. In other cases, knowledge transfer occurred informally—through observation, storytelling, or participation in daily business activities. This also underscores the importance of experiential learning in entrepreneurship and raises the question of whether modern business education programmes adequately capture these modes of learning.

Observations throughout the interview process consistently highlighted a discernible distinction between participants with differing levels of education. Those who had attained formal education exhibited greater confidence, assertiveness, and articulation in their engagements compared to those who had experienced gaps in their education. This difference was particularly evident in their approach to discussions, the clarity of their responses, and their ability to engage critically with complex concepts. The educated participants demonstrated a broader perspective, structured reasoning, and a more strategic approach to business-related decision-making.

“I've studied economics. I had to incorporate what I studied in the business, in relation to consumer behaviour. And just being a student and how students live. I can tell you now, those are our most loyal customers of all the customers that we have. This informs how we approach and retain them” – Participant 3 (formal business structure)

“I did not finish school and had to make a plan to make an income to make my kids go to school so I just started selling here by the side of the road…I just rely on the passerby clients to notice the stall and buy from me”- Participant 21 (informal business structure)

A similar pattern was observed in the nature of the businesses operated by these individuals. Participants engaged in informal and survivalist enterprises primarily focused on short-term subsistence rather than long-term growth and scalability. In contrast, those with formal education demonstrated a greater propensity for business diversification and were more likely to engage in multiple sectors.

Furthermore, a significant distinction emerged in how educated and less-educated entrepreneurs accessed and applied knowledge. While all participants had exposure to indigenous knowledge and inherited business practices, those with formal education exhibited a greater capacity to integrate this traditional wisdom with contemporary business methodologies. Their business models frequently reflected a synthesis underpinned by a nuanced understanding of both modern economic principles and culturally embedded entrepreneurial practices. Many educated entrepreneurs explicitly identified this integration of indigenous and formal knowledge as a key competitive advantage, enabling them to innovate while maintaining cultural relevance and community engagement.

"I studied biotechnology, and I have over 20 years of experience combined experience within the scientific software in the laboratory" – Participant 23

"And because I use herbs also, I do follow a lot of like herbal people, what do they call them herbologist people on social media. This helps me a lot as well."– Participant 23

Overall, this suggests that formal education and inherited knowledge plays a role in the ability to synthesise indigenous knowledge with contemporary business practices, which somehow further provides educated entrepreneurs with an inherent competitive edge.

An intriguing insight from the study is how participants use metaphors and unconventional sources of knowledge to drive innovation. Participants described business insights as "visions" and "dreams." One participant, for instance, recounted how her late grandmother, whom she had never met, visited her in a dream and revealed a key cultural artefact. This artefact later became a best-selling product during the 2010 World Cup. Other participants described their entrepreneurial abilities as "gifts," and even in some cases "spiritual gifts" attributing their capacity for innovation to inherent traits and not only knowledge, passed down through generations. This raises important questions about whether entrepreneurial innovation has a cognitive or intuitive dimension and whether it is inherited rather than taught and learned. It also suggests that in cultures where formal business terminology is underdeveloped, entrepreneurship may be conceptualised through spiritual or instinctual frameworks. Moreover, several participants expressed that their ideas often came to them in moments of reflection or during cultural practices, such as ceremonies, communal gatherings, or traditional rituals. They would often "see" (envision) things that other people could not see. Perhaps then business ideation is not merely a technical process but one deeply intertwined with cultural identity and collective memory.

"I only discovered this recently—early last year, in 2023. I found out that beadwork as a skill was practiced by my great-great-grandmother. She was deeply involved in beadwork, creating intricate designs, and she passed this talent down through the

family. It turns out runs in my bloodline. My aunt also has a strong creative streak, but she never pursued beadwork seriously. So, from my father's side, I had an ancestor who worked with beads as a craft. It's something that has been passed down, even though I didn't consciously know this I'm sure this tradition existed even before her. It's something that has likely been in my lineage for generations." – Participant 20

An essential aspect of knowledge transfer emerged in the form of cross-cultural knowledge exchange. Entrepreneurs who employed migrant workers observed and adapted their practices to innovate. This was a way of being more competitive within the South African market. The exchange of this knowledge between different background employees would lead to a melting pot of knowledge and free access of idea incubation that entrepreneurs could then use as innovative methods in their businesses. Contrary to the conventional association of indigenous knowledge with non-Western communities, some participants highlighted knowledge transmission dating back to the Anglo-Boer War. This knowledge has since been integrated into agricultural methods across racial and cultural groups. Understanding harvest and planting seasons using "Kruger's birthday" as an indicator has been used locally and scaled throughout various farming communities beyond the Afrikaner community.

"So, you'll be talking to your Afrikaans guys, and they'll tell you they measure it based on whether it has rained by Kruger's birthday or not—crazy, right? But that's how they predict the seasons. If it has rained by Kruger's birthday, then it's going to be a year of ample rain. If it hasn't, then it's likely to be a dry season. It's fascinating because they're busy tracking birthdays and predicting the weather with them." – Participant 10

Further to this, was in this context enabled knowledge pooling rather than knowledge transfer. The knowledge shared involved a reciprocal learning environment, where expertise was not confined to formal education or social hierarchy. Where other participants noted the knowledge shared was often from someone with more experience, older and involved power dynamics, this model of knowledge pooling challenged that assumption.

"Then you have your Malawian employees, when I was growing tomatoes, I learned that, according to indigenous knowledge, women don't handle tomato seeds. The planting, growing, and monitoring are strictly done by men. Women only get involved when it's time to harvest or cook them. So, I had to schedule everything around that tradition. I decided to respect the practice and adapt." - Participant 10

The study also indicated how inherited knowledge would be a prime or converted contribution to innovation. In some instances, the knowledge was used to innovate products, processes and business models in its raw form. This was mostly interlinked with participants who were active in preserving the knowledge in its usual form. While others, adapted the knowledge and would sometimes combine it with more modern methods, particularly in digital platforms for accessibility and also enhancing competitiveness. What was key, was in both cases, entrepreneurs would lead to successful innovations. This indicated that the market was receptive to the outcomes and products of the knowledge, seeing it as unique in its raw form and others were also open to the modified methods. Participants also acknowledged to learning from clients in their businesses. And due to the structure of business models, i.e. being more community – orientated and relying on values such as Ubuntu where customers would often be more willing to connect, give grace and vet ideas and innovations before the entrepreneurs scale a product.

"I wasn't sure what to expect, but I made cakes and took them to the taxis and taxi association Alex, where I connected with the community. When you offer people products, you naturally engage in conversations, and you get real answers when you ask the right questions. Over time, things started improving. I started supplying cakes for events, and some people even placed orders. I remember a summer when someone was selling eggs, and I began ordering from them regularly. That's how connections developed. Over time, I realised that the business was growing, and I was reaching more people, even those I hadn't initially expected to connect with." - Participant 7

With the effects of migration, inward migration and urbanisation, one key challenge with indigenous knowledge was how it could be preserved to its original form. Participants identified challenges with knowledge clashes between different tribes with South Africa, as well as tribes that migrated from other countries. Which knowledge is considered to be indigenous and which knowledge is not? Is it still considered indigenous knowledge even when it loses various parts of the knowledge? Challenges regarding indigeneity were also identified.

"And I've spent these years really living out my own teaching philosophy and building on an intuitive practice. My ancestors created this practice. And so, I say on my website, it's an indigenous practice" - Participant 25

Vetting this knowledge is also challenging as there is no single person who knows the correct application and use thereof. Participants also highlighted the challenges that come with innovating using this knowledge as innovation arising from such sources is often dismissed or adopted by institutions such as Universities and Government for the own use, without acknowledging the IP and use thereof, which then begs the question of who owns the knowledge and who is allowed to use this knowledge and in what forms.

"I grew up in Johannesburg, and generally, people from the city don't have a deep understanding of herbs. That kind of knowledge is more common among those from rural areas. In 2023, I took a course at UP on fire medicine, which was essentially herbal medicine. What struck me was that our lecturer was also learning about plants from a village. That was quite unsettling because she was using the villagers' knowledge to create her curriculum, essentially benefiting from their wisdom without necessarily crediting them." -Participant 23

The origins of knowledge played a key role in shaping its use and perception. To better understand where and how knowledge originated, participants were asked to trace it back to its source. An interesting insight emerged: the identified knowledge often had distinct origins based on its nature. For instance, knowledge passed down through family was frequently linked to ancestors, street knowledge was attributed to experiences gained from the streets, and industry knowledge was seen as originating within professional or trade environments. A pattern emerged, suggesting a strong relationship between the type of knowledge and its source. Knowledge appeared to follow a lineage, building upon existing wisdom from a particular origin.

However, a noteworthy observation was that participants rarely attributed this knowledge to a single individual. Even when someone had directly taught them or transferred the knowledge, their responses tended to frame its origins as communal rather than personal. Contrary to Western literature where a theory would be attributed to a scholar (Schumpeter on Entrepreneurship), this knowledge would often be attributed to a group. In Participant 27's observation above, the knowledge is attribute to BoKoko, which is a group of elderly women.

This presents a compelling perspective on intellectual property regarding inherited or indigenous knowledge in communal and informal contexts. In such settings, knowledge ownership appears to be inherently communal, shared among groups rather than attributed to a single individual. This raises critical questions about intellectual property rights, especially in societies where knowledge is informally passed down through generations. Key to this issue is how the monetary benefits of such knowledge should be distributed and to whom. Adding to this complexity is the paradox in participants' perceptions: while they expressed concerns about their intellectual property not being protected, they also did not credit a specific individual as the originator of the knowledge. In some cases, this could be because the origins of the knowledge are unknown, which raises further concerns about participants' understanding of intellectual property rights. Another possibility is that the consumption of such knowledge often overlooks its creator and source. However, when participants actively use and apply this knowledge in meaningful ways, they recognize its refinement and added value. Perhaps this type of knowledge in its raw form is not rendered valuable. In these cases, participants advocated for intellectual property rights based on their perceived contribution and enhancement of the knowledge, rather than its original creation.

5.6.2 Theme 2: Adaptive Business Strategies and Innovation

Following the theme of inherited knowledge above and with the consideration that participants do acknowledge its use in their entrepreneurial activities, this second theme explores how entrepreneurs innovate. It further expands on how entrepreneurs innovate, pivot, and scale businesses in response to opportunities and challenges. The study emphasised how many participants develop their businesses through trial and error, often without formal training or structured guidance. Instead, they rely on self-learning, personal networks, and iterative adjustments to refine their approaches.

Participants adopted diverse approaches when establishing and growing their businesses, often balancing innovation with industry replication. Some ventures emerged from entirely new processes of innovation, while others replicated existing models, and many integrated both approaches to remain competitive. This adaptability allows businesses to evolve, as some start with unique ideas but later incorporate industry standards to enhance scalability. The venture stage and size of a business also influenced these strategic shifts, as entrepreneurs leverage their knowledge to refine their business models in response to market trends. This was summarised by participant 13's entrepreneurial journey:

"It's applying innovation, it is not just about a new product. It's also about how you are using a concept sometimes taken from one place and putting it into another, just like

we're doing this registry, putting it into philanthropy. So, the process would be taking it from taking it from one environment to the next and adapting as quickly as possible."

This statement underscores the necessity of self-directed learning and flexibility in entrepreneurship. Rather than following a fixed business model, participants embraced a more fluid approach, adapting strategies as needed and pivoting as often as required.

According to the study, entrepreneurial growth was frequently characterised by trial and error, as entrepreneurs experiment with different approaches before finding suitable business models. Many rely on small-scale investments from family and personal networks, testing their ideas with minimal financial risk before scaling. Entrepreneurs frequently relied on financial support from close social networks—such as parents, siblings, or other individuals who believe in their vision. Rather than securing large-scale investments, they prioritise small, incremental funding to test their business ideas in a controlled manner.

One participant shared their personal experience with this approach:

"I guess milestones would be when my parents bought me my first sewing machine, which was in high school, but I did not utilise it extensively. It was only at university that I felt a strong conviction to pursue this path; I knew with absolute certainty that this was what I wanted to do. My sister subsequently bought me another sewing machine, which I used to create products for clients. Given that she was also a student, she financed this purchase using her pocket money. Entry-level sewing machines typically do not last beyond two years, yet mine functioned for approximately six years." - Participant 11

This account highlights the critical role of small-scale investment in the participants' businesses. The participant relied on familial support to fund their initial ventures, demonstrating the importance of grassroots financial backing in early-stage entrepreneurship. It also illustrates how initial constraints fostered resilience, as entrepreneurs maximised available resources before accessing larger capital.

Entrepreneurs frequently rely on self and family funding and reinvesting profits rather than seeking external investment. This approach enables greater control over business decisions and reduces dependency on external stakeholders. Many participants adopted self-financing strategies to mitigate risk, allowing them to scale their ventures without the pressure of external investors. This autonomy enabled them to experiment with multiple revenue models. One participant suggested that parents might achieve better financial outcomes by investing in their children's entrepreneurial ventures rather than solely funding university tuition, given the uncertain return on investment of formal education:

"Parents would save more money if they invested university fees on a sliding scale in their children's ventures rather than sending them to school, which is just as risky in terms of potential ROI." - Participant 19

This statement challenges traditional perspectives investment. It highlights how entrepreneurship can offer a viable alternative to conventional career pathways, particularly in contexts where formal university education does not guarantee employment or financial stability. Instead of the traditional backing of pursuing a degree to make a living, a new model arises, to reallocate financial resources toward business ventures. Families could potentially generate wealth from equipping young entrepreneurs with practical skills.

In the middle of crises and challenges, entrepreneurs must navigate the balance between inherited knowledge and modern business strategies. Some opt to leverage traditional practices, while others integrate technology and other modern approaches into their models. Participants often faced dilemmas about whether to retain traditional knowledge or transition to more contemporary business practices. While technology is increasingly emphasised, some entrepreneurs found value in indigenous knowledge systems. One participant described how the COVID-19 pandemic influenced their decision-making:

"Covid-19, which was a major disruptor for me, became a milestone when I decided to leverage indigenous plants in my business." – Participant 28

This statement illustrates how external disruptions can drive innovation. Rather than viewing the pandemic solely as a challenge, the participant identified an opportunity to integrate traditional knowledge into their business, ultimately turning adversity into a competitive advantage. This supported the observation that entrepreneurs who successfully blend traditional and modern business strategies can differentiate themselves in the market.

Pricing strategies also posted significant challenges for entrepreneurs, particularly in the early stages of business development. Understanding market dynamics and consumer expectations is crucial for setting competitive prices. Many participants struggled to determine appropriate price points for their products. However, strong client relationships and community trust often facilitated successful pricing adjustments. One participant highlighted the role of word-of-mouth marketing in relation to pricing:

"Word of mouth in the communities we operated in built trust, which could then be used as a stamp of approval to encourage sales even when prices were deemed to be high."
- Participant 23

Innovation arose in financial and economic adaptations from the participants. Although briefly discussed above, these were also a key discussion area. Participants had to adapt to and create innovative financing strategies to sustain and grow their businesses. Other than the usual bootstrapping and crowdfunding platforms, stokvels remerged as a new community-based model of funding that supports small businesses through the participants' parents and other key acquaintances. Stokvel money would be borrowed to acquire stock and pay for other incidentals in the business. As the participants themselves identified this as a very unconventional model of funding, but it was one that was tacit and influenced the growth of their businesses. Stokvels have now remerged as informal "venture capital" hubs that support small scale and other informal businesses in remote areas

"We have a group where we contribute money finances our transport to buy the mielies directly from the farm. It is cheaper for all of us to pitch in money and facilitate a car to take us there. We buy a lot of mielies, and we get a discount, when we are a group. If someone cannot afford, we still take them to buy and pay for them and they can pay us later once they have sold something. – Participant 21

These were some strategies that were deployed in cash and financial management. Lower production costs were often deployed and shifting of resources could occur if required, as alternatives could easily be identified and considered. This ties back to the adaptive strategies of entrepreneurial innovation of women as per theme. A key approach was reducing production costs, which allowed businesses to operate more flexibly. Additionally, resources could be reallocated as needed, given that viable alternatives were readily identified and considered. While this was not necessarily the participants' primary intent, their ability to recognise the advantages of their business location played a crucial role. By leveraging local resources, they were able to maximise profitability. Furthermore, adapting production processes to align with available resources ensured the creation of a feasible and cost-effective product. Innovation emerged as an essential component of this process, often driven by experimentation and iterative refinement. In the case of participant 2, through trial and error, building material were experimented with and outcome being a specific type of brick which could then be used to build a certain type of chalet in their bush camp.

"We have access to a lot of free natural resources. There's free water from the river, and sand is readily available. All we need to buy is cement. We employ local community workers to meld the bricks near the river, keeping costs low. Since we're based here, our building expenses are much lower compared to if we were elsewhere. In a nutshell, that's how we've managed so far." – Participant 2

Not only were the ideas clear in terms of product innovation, but business model innovation was also evident in the interviews. One observation is how values adopted from parents who were traditional leaders translated into a customer service model. In addition to this, gender roles which were stated by some participants as a cultural barrier, were in some cases used to develop business model innovations. One participant referred to being the only daughter and being given the responsibilities of running the household, as an advantage that led to her being more aware of run a business. The processes that she innovated and outlined in her business, as she had no prior exposure to business, resulted from how she ran the household. She reinvented business processes for her catering and events business resulting from how she was taught by her elders on how to run a household, particularly the chores related to the kitchen.

"Running a household helped with running a catering business. My mother taught me that and she learned this from her mom who was a maid. Managing a household includes planning, organising and structure, this applied to catering and events as well." – Participant 12

Similarly, process innovation is evident in the shift from manual operations to digitised systems. Rather than simply scaling up an inefficient model, these entrepreneurs identified the need for automation and partnered with IT specialists to develop solutions when required. This not only improved efficiency but also freed up time for business expansion. This strategic delegation demonstrates a key lesson in innovation: knowing when to pivot from hands-on management to systems-based growth.

"…but also, it's through the help of IT specialists. I could do it myself, but also, it's time consuming. You can get someone that's doing it full time, that's offering such services. So, to be able to create portals to archive the information, to make sure that all the systems are interacted for a person from purchasing a product, all the way to receiving it in your e-mail and getting access to the portals; that I had to get other people to be able to do that. And also making sure that the ICT system is working. The banking system is working such that I have a point of sale and all those things that I could have on a day that I'm out, selling my products or doing business." – Participant 5

Product development also showcases iterative innovation. Entrepreneurs working with scientists and manufacturers to perfect formulas encountered variability in results, forcing them to refine their processes until achieving consistency. Although there was reliance on herbs and other organic material, their approaches had to align with research and development best practices, where controlled experimentation would lead to superior outcomes. Rather than accepting flawed products or suboptimal manufacturing, these participants persisted through multiple iterations leading to the final outcome.

A notable challenge was the stigma that is often associated with traditional knowledge particularly in strategic branding. This would often lead to the incorrect market perceptions associated with the specific product or service being rendered. This was often also a perception that would be formed in the lenses of funders and potential donors.

"In Sekhukhune, they have their own tea, but it was associated with poverty. People who could afford shop-bought tea saw traditional tea as 'lesser.' But it's actually healthier. I had to rebrand it as premium." – Participant 8

This not only highlights existing biases associated with traditional knowledge, but the additional effort involved in ensuring that products with it, obtains as much coverage and exposure as your normal shelf products. This further indicates how local products may be labelled as "lesser" simply because they are associated with poverty or outdated methods, despite having genuine health benefits. Aligned with the dilemma surrounding intellectual property rights, the study revealed that, although there was a surplus of a particular product which could be monetised, it ultimately required an individual with the necessary entrepreneurial acumen to recognise its potential and transform it into a viable offering. In this context, the participant played a pivotal role in bridging the gap between raw abundance and market opportunity by utilising community knowledge and an understanding of intellectual property considerations. Without such initiative and awareness, valuable resources may remain untapped, despite their apparent availability. Thus, entrepreneurial agency emerges as a crucial factor in converting communal assets into marketable products.

What emerged across all industries regarding entrepreneurial motivation and business origins, was the blend of using personal experience, inherited knowledge and market gaps to identified opportunities. Throughout the interviews, the main innovation focus within an industry was a common trend and emerged throughout the participants' responses. In addition to this, inherited knowledge and how it was used to innovate was also a key area that was identified as this differed from various industries and within various businesses within the industries.

In the technology sector, the emphasis was on solving a challenging and then scaling fast enough to make it accessible to the masses. What was key in this industry was these respondents were often encouraged to reach a massive client base with a high focus on scaling their product or service. The entrepreneurial activism often involved highlighting the technology advancement disparity across the country and pointing out the need for various industries to adopt more modern systems. Priority was granted to efficiency and business scalability, which then were the key outcomes that would shape how and why they innovate. Participants were often involved in replicative businesses but rather adapting them to suit the South African context. Participant 29 highlighted how the use of the Uber model informed their emergency services transporting system, even though various actors in the ecosystem could not identify this.

"Our transport system has improved, our telecommunications have improved, but when it comes to healthcare, we are still using outdated systems that put lives at risk." – Participant 29

The manufacturing-based participants often encountered challenges related to production costs, supply chain management, and maintaining product authenticity and their innovation practices would be directed towards resolving these issues. Milestones would also be directed with words related to products, scientific formulas, suppliers, etc. Various innovative measures in this sector involved the balance of these scientific formulas, finding cost effective production lines and refining supply chain management as well as preserving the authenticity of locally sourced materials.

"Some of the things that I do are things that I dream about. I wake up and think—this is what I ate in my dream, how do I make it real?" – Participant 27

In the services industry, customer experience was key. The trend observed through the interviews was the emphasis on client expectations, client feedback and aspects of storytelling. They often relied on these to carve out unique market positions. Customers would often buy into the value proposition, even if the service being offered was not that popular in the respective sectors.

“For a few of our clients we introduced digital marketing and broke into a new market, IT was not a thing then, but we managed to create value add from that” – Participant 26

However, in contrast to this, relying on client service and expectations to drive innovation also presented its own challenges. Unconventional methods could sway clients an unfavourable response from clients.

"One of the main challenges is finding a balance between traditional teaching methods and the expectations of clients who are used to a formal, structured education. Some clients may question the effectiveness of traditional methods like storytelling, games, and proverbs, as these may seem less academic." – Participant 1

Client-led innovation within the services industry also includes navigating the tension between client expectations and the introduction of unconventional methods as part of the innovation process. Clients often expect structured, formal approaches, believing them to be more reliable. This creates a challenge in demonstrating the value of such approaches without alienating clients. While these innovative methods may enhance engagement and creativity, they may be viewed sceptically by clients who prioritise conventional standards.

Participants in the health sector often innovated from their personal health challenges or observed personal challenges within their communities. In health and pharmaceuticals, participants outlined how they had to often rely on personal experiences to drive innovation. While this added a “personal touch” to their innovative practices, it also necessitated extensive testing and regulatory compliance.

“"Getting all the products tested in the lab has been great. You know, bringing someone that comes from the lab background and having your products tested and, you know, you see that, you know, everything is stable, they pass microbiology, they pass the chemistry. That's that makes me really, really proud because a lot of products on the market are not tested, right?"- Participant 23

This rigorous development process came with its own set of difficulties:

"Because of all the product testing, my skin was terrible. My legs had skin peeling from all the testing." – Participant 28

In the agriculture and food sectors, significant innovation was observed through the modernisation of traditional practices of food produce and the repositioning of indigenous foods in the marketplace. Certain methods and products were often which were often stigmatised as symbols of poverty. Participants therefore had to be innovative in either developing a niche market where these methods and products would be appreciated, this often added an additional burden of reshaping consumer perceptions.

"A lot of these indigenous fruits come with childhood trauma. People were forced to eat them because they had nothing else." "I had to present them in a way that people would enjoy, in a modern way." – Participant 27

5.6.3 Theme 3: Interplay of Identity, Social Dynamics, and Entrepreneurial Challenges

Furthermore, participants described how cultural customs influenced pricing strategies, marketing techniques, and financial management. Some entrepreneurs adopted community-based credit systems where payments were flexible and trust-based rather than strictly procedural, legislative and transactional. This informal financial system, rooted in communal values, allowed their businesses to expand. In this instance, customers would be urged to pay what they can afford opposed to what the actual price is. These findings suggest that alternative economic models exist, in line with indigenous and marginalised communities that challenge conventional capitalist approaches to business.

Entrepreneurship is deeply intertwined with identity and social dynamics. Personal and collective identities influence entrepreneurial journeys, examining the complexities of social interactions and the barriers that entrepreneurs face in different social contexts. Identity plays a crucial role in shaping an entrepreneur's motivations, decision-making processes, and overall business trajectory. Participants often aligned their ventures with personal values and societal roles.

"My passion is for isiXhosa and STEM subjects, particularly maths and science, and my desire to make a meaningful difference in the isiXhosa language space. I also aim to contribute to addressing the unemployment challenges that we face in our country by creating job opportunities within the private education sector. The tutoring company also focuses on making learning accessible and effective for people of all ages." – Participant 1

This alignment can either serve as a driving force for success.

"I still prefer an informal approach because we operate within a local community, and it's crucial they feel included. My vision is to host international tourists and provide an authentic Zulu cultural experience, and for that to work, the community must benefit too. Our area has a rich heritage, and we want to showcase local attractions, so everyone gains from the venture. Partnering with the community has indicated safety within our business and promoted employment of local staff who have contributed to the business" – Participant 2

or present obstacles due to pre-existing social structures and expectations

"The entertainment and creative space lacks structure. My calling seems to be bringing that structure, especially with my background in corporate and business. The problem is there are no contracts, debt, or clear resources, which leads to people losing out commercially and emotionally. Many interventions still don't change this reality." Participant 6.

Majority of the participants linked their ventures to eventually solving a community or societal issue. This was another aspect in which indigenous knowledge shaped the innovative ventures of women. The type of venture that they engaged in was driven an understanding and observation of the communities around them. Even in cases where there were no elements of social entrepreneurship, the nuances emphasised that the participants inherited some sense of duty within their families and communities and translated their ventures as a vehicle to carry this out. For these participants, entrepreneurial ventures do not exist in isolation to the community and context in which they operate in. Key to this is how a part of business model innovation was building an ecosystem that empowered your clients to acquire your services and hereby increasing the sales. This was reflected by Participant 3:

" Another thing that we've also done is that to help the young blacks South Africans and give them the biggest opportunities. Remember people don't know, and I realised that a lot of blacks South Africans don't know about this market. So what we do is that that every year we go and have a fundraising, where we go to places where we've had customers and then we'd fundraise for a couple of bikes, couple of phones and we give up for free and give it to young black South Africans to get on the e-hailing market and understand the market and make money for themselves. That's what we do." – Participant 3

Another Lense of assessing this duty is entrepreneurial activism, and how it plays a crucial role in reshaping business environments. There was a growing shift towards African-owned supply chains and reinvestment into local economies. Entrepreneurship was seen as a tool for economic liberation. For their ventures to be recognised and for the acknowledgement of such knowledge being used in their ventures, entrepreneurs engaged in activism to seek to challenge systemic barriers. They vied to promote inclusivity, and advocate for policy changes that benefit could benefit businesses such as theirs. A notable example is participant 29 who emphasised the importance of this:

"And I was telling her how the ICT cluster of the NHI was non- responsive, how they were so dismissive and yet, you know, NHI has been proposed. That was before it was enacted into law policy at the time. And on that spot, a friend gave me the minister's number." - Participant 29

It should be noted though that some entrepreneurs experienced government support in their ventures, particularly in the farming and biodiversity sectors. The Tech spaces were however overlooked and in professional services, more reliance was placed on network support than interacting with government. The nuances from the interviews were how some sectors, particularly farming and biodiversity, were supported by the government and commended them for their support whereas other sectors such as professional services did not even refer to them. However, there were issues in the tech sector where much dissatisfaction was experienced through interactions with the government.

Entrepreneurs exhibit various mindsets that drive their success. Factors such as resilience, creativity, motivation, and intuition contribute to their ability activate entrepreneurial action. In this, creativity was identified as a differentiator. Some entrepreneurs added that in addition to learning and knowledge they acquired, additional traits such as creativity allowed them to attract and serve a certain niche. *Participant 11 remarked:*

" My way was an interesting way to do it because no one never told me I can't do it. And so those mental areas never existed in my business because I've never had those mental constraints. And it has been to my benefit as a client before she officially became my client, she said every time I see a dress you've made on social media, I can immediately tell it's yours. There's just something about it's that is very you."

Entrepreneurs who integrate creativity into their business models often gain a competitive advantage by crafting unique products, marketing approaches, and customer experiences. More interesting highlights how creativity is more than just an extra skill—it becomes part of an entrepreneur's identity and brand and helps them stand out in a crowded market and build customer loyalty. Over and above knowledge and adaptive strategies, an element of creativity can provide a setting in which business success can be enhanced.

Cultural traditions and societal values play a significant role in shaping business development. While some entrepreneurs draw inspiration from their cultural heritage, others face challenges when traditional norms which further discourage risk-taking and innovation. Cultural beliefs about business ownership, wealth accumulation, and work ethics influence how entrepreneurs approach their ventures. Participant 9 stated that she is always "juggling" multiple priorities and outlined:

"I closed my practice in November to prioritise my health and family. I'm not sure when I'll reopen, but it will be on my terms. As female entrepreneurs, we often carry extra responsibilities—childcare and family care—that male entrepreneurs may not face in the same way, which can force us to step back sooner. They often have someone else managing things at home, giving them more freedom to keep going." – Participant 9

The level of encouragement for entrepreneurial activities varies across communities. In some, entrepreneurship is merely supported, while in others, it is highly valued and actively promoted. However, in certain communities, particularly for women, entrepreneurial pursuits are encouraged but often within the confines of traditional family and caregiving responsibilities. This dynamic can shape the extent to which women are able to engage in and benefit from entrepreneurial opportunities. In contrast to Participant 9, Participant 10 emphasised the encouragement into entrepreneurial activities from a young age:

“I decided to go into business was really through the encouragement of my father who is not an entrepreneur, very corporate person, but he figured that somebody in the family needs to be an entrepreneur. So, since I was a teenager, that's kind of like the encouragement that I've been getting. He always asked ‘How about, you know, you explore yourself, what do you want to do? ”

One of the most persistent challenges is gender stereotypes. Women entrepreneurs in many industries face gender-based scepticism where they struggle to secure funding, obtain mentorship, and access leadership roles. Gender norms often dictate the types of businesses that women are expected to run and how they should act. This is in turn can slow and limit opportunities for growth in sectors, particularly those where there is a prevalence of male domination:

"There were people, obviously, who thought, 'She's new here, what does she know?' There were cultural dynamics at play as well, with some men saying they wouldn’t be led by a girl—let alone one like me. So, there were all of those challenges. But in hindsight, I realised the importance of learning to articulate and communicate a vision effectively and gaining buy-in from people." – Participant 14

These societal perceptions can slow business growth, but they also push entrepreneurs to develop resilience and find alternative strategies for success. Moreover, cultural expectations can impact succession planning in businesses. In many societies, business leadership is traditionally passed down through males, limiting opportunities for women or younger family members who may have innovative ideas. Modern entrepreneurs are gradually challenging these norms, bringing new perspectives into traditionally structured enterprises.

How language proficiency intersects with both generational differences and formal education levels. Younger participants were generally more multilingual and comfortable switching between different languages. Their interviews included a mixture of slang, rich vernacular as well as English. In contrast, older participants, such as Participant 16 and 21, were more likely to rely on one or two languages (in this case, isiZulu and Sepedi). The choice to conduct interviews in their vernacular underscores not only their linguistic preferences but also the challenges that can arise in research settings. Conducting interviews in local languages yielded richer, more authentic insights, however, it introduced complexity in terms of translation and interpretation. Various words in vernacular did not have meaning in English and direct translation thereof was challenging. From a broader perspective, these linguistic nuances reveal how language skills can shape an entrepreneur's approach to networking, marketing, and overall business strategy. Younger, multilingual participants may find it easier to adopt digital tools or engage with a variety of stakeholders. These participants also emphasised their access internationalisation and travelling worldwide to market products:

"Another one is when a Korean supplier now decided that they wanted to import the body butter in Korea. So, we know that when it comes to skincare Korea's leading, so I have that one." -Participant 17 (Age 30-35)

While older participants preferred face-to-face interactions within their immediate community.

"My customers come and buy from me from here at the stall. I sit here all day and sell"- Participant 21 (Age 50-60).

The integration of digital platforms also influenced how different generations approached business. Younger, multilingual entrepreneurs were more inclined to place their businesses on social media, leveraging digital marketing to expand their reach. By contrast, older entrepreneurs often rely on more traditional, physical settings—like street vending or local markets—to reach their clientele.

The experiences of Participant 18 and Participant 21 were older in age and expressed that their ventures operate primarily as "survivalist" businesses: they focus on securing a stable income and meeting their immediate financial obligations, rather than pursuing rapid expansion or large-scale growth. Participant 18's remarks reveal a conscious decision to remain small, citing limited capacity and personal contentment as reasons for not seeking external investment or moving into supermarkets. For these entrepreneurs, success is measured by the ability to support their families and maintain a comfortable standard of living, rather than by traditional metrics of business scalability.

"I've had people wanting to invest and take the business into supermarkets, but I don't have the capacity for that. When you employ people, you need to pay salaries, and you need a bigger space to produce at a higher volume. I don't have that kind of capacity, but I'm very happy with what I have. I'm not doing badly at all. If you can take care of your family, pay the bond, make sure your child is clothed, goes to school, and is well-fed, that's already a success." – Participant 18 (Age 40-50)

An additional observation was the fact that the businesses of Participant 18 and participant 21 were food stalls, where you could taste and buy the food at hand. These participants relied on aspects such as taste and smell as well as nostalgia for the types of food being offered (i.e. preserved chutney and home-cooked mielies) to attract the type of customers that they needed to attract. Additionally, the purchasing process was also simple and did not require much though and communication. One could point to a product in their preference in order to buy what was required.

5.7 Conclusion

Chapter 5 does highlight the role that Indigenous Knowledge Systems (IKS) play in shaping entrepreneurial innovation among South African women entrepreneurs. Indigenous knowledge serves as both a strategic and operational asset, enabling entrepreneurs to develop unique business models that integrate traditional practices with modern innovations. Rather than being static or outdated, indigenous knowledge is dynamic and evolving giving rise to other forms of knowledge such as "Inherited adaptive knowledge (IAK)".

IAK is a broader scope of knowledge used in businesses to drive entrepreneurial innovation and indigenous knowledge forms part of this knowledge. which various participants identified as a key resource in driving their innovative strategies. digital platforms, and social media marketing to enhance their business competitiveness.

A key insight from the research is the critical role of inherited knowledge and experiential learning in business success. Many women entrepreneurs rely on mentorship, hands-on experience, and knowledge passed down from elders and community figures—often referred to as "BoKoko" (grandmothers)—rather than formal education. This non-formalised learning process contributes to business sustainability, product differentiation, and resilience in challenging economic environments. However, despite its value, the absence of a formal intellectual property framework for indigenous knowledge remains a major concern, leading to issues of ownership, exploitation, and the inability of knowledge originators to benefit financially from their contributions.

The study also highlights significant challenges that entrepreneurs face in scaling indigenous knowledge-based or rather, inherited knowledge-based businesses. Traditional financial systems often fail to recognise this knowledge as a legitimate business asset, making it difficult for entrepreneurs to secure funding and grow their ventures. Nonetheless, the research challenges the assumption that indigenous knowledge limits scalability. On the contrary, those who successfully blend traditional practices with modern business strategies are able to achieve growth, with some even expanding into international markets. The emergence of hybrid business models demonstrates that indigenous practices can complement and enhance contemporary business operations rather than hinder them.

Another key finding is the lack of adequate policy and institutional support for entrepreneurs leveraging indigenous knowledge. The study reveals an urgent need for government interventions such as financial incentives and targeted training programs to help formalise and scale businesses rooted in traditional knowledge. Overall, the findings confirm that indigenous knowledge is an active and valuable driver of entrepreneurial innovation. However, barriers such as the lack of formal recognition, continue to limit its full potential.

In summary, the key findings in Chapter 5 emphasise the strategic role of business resources in fostering entrepreneurial innovation, particularly within indigenous knowledge systems. Socio-cultural factors significantly shape the success of entrepreneurial ventures, influencing both replicative and transformative innovations. Knowledge transfer and pooling emerge as critical mechanisms for sustaining innovation, while networks and community support play a vital role in entrepreneurial success. Additionally, unintentional innovators challenge conventional definitions of entrepreneurship, highlighting organic and adaptive approaches. Intellectual property challenges persist in protecting indigenous knowledge, necessitating alternative funding methods for indigenous knowledge-based businesses. The disconnect between formal education and practical entrepreneurship underscores the need for new business knowledge frameworks, such as Inherited-Adapted Knowledge (IAK), which integrates traditional wisdom with modern business practices to enhance innovation.

Chapter 6 discusses these findings and further interprets them against existing theories and literature.

Chapter 6: Discussion of Findings

6.1 Introduction

This study aimed to build on the effectuation theory literature by examining the role of indigenous knowledge as a knowledge resource in entrepreneurial innovation. This chapter makes three key contributions to the discourse on effectual entrepreneurship in emerging markets. First, by offering an entrepreneur-centric perspective on knowledge systems, we demonstrate that indigenous knowledge is not a static or inferior resource but a dynamic and strategic asset that drives entrepreneurial innovation and adaptability. Moreover, we highlight how entrepreneurs integrate both traditional and modern knowledge to create competitive advantages. Second, we theorise the implications of socio-cultural and contextual influences on entrepreneurial success, challenging dominant narratives that position these factors solely as constraints rather than enablers of innovation. Finally, we illustrate how alternative financing models and knowledge-sharing mechanisms contribute to enhancing entrepreneurship in emerging market contexts, particularly in environments where formal institutional support is limited.

This chapter follows from the presentation of the semi-structured interview research results in Chapter five, providing a detailed discussion and comparison to the literature outlined in Chapter two. The format of this chapter aligns with the chronological order of the research questions presented in Chapter three and the results discussed in Chapter five. Each research question is examined based on the collected data, its relationship to existing literature, and the implications of the findings. This approach allows for a structured and critical evaluation, leading to a comprehensive conclusion based on the research question.

6.2 Indigenous Knowledge as a Strategic Business Resource

Confirmatory to literature, entrepreneurs relied on indigenous knowledge and other forms of traditional and local knowledge as a foundation for entrepreneurial innovation (Salmon et al., 2023). This knowledge was often used to seize milestones and assist them in overcoming entrepreneurial challenges. Participants described mentorship and other methods that were regarded “informal” learning to be more influential in their businesses decisions than formal education (Bruton et al., 2023) – this was particularly relevant determining entrepreneurial success. The disconnect between formal education and real-world business application was evident, as many entrepreneurs found practical experience, real life entrepreneurship observation and mentorship to be more useful in their innovation activities rather than entrepreneurial academic learning (Bruton et al., 2023). Findings therefore indicated the proposition that indigenous knowledge is a business resource and can be used in various forms to propel entrepreneurial innovation (Murphy et al., 2020; Padilla-Meléndez, Ciruela-Lorenzo, et al., 2022; Salmon et al., 2023). Formal education was identified as an antecedent in the entrepreneurial process but was not attributed to the overall success arising from an entrepreneurially innovative venture (Allard & Williams, 2020; Kraus et al., 2021) as much as practical experience and these other forms of knowledge were. This further extends to the findings of Bruton et al. (2023) and Shankar and Narang (2020), where most entrepreneurs were most likely to be entrepreneurs based on their practical observations of entrepreneurship in practice.

The study extended the application of indigenous knowledge applied to 93usinessses beyond only those that answered a societal call, hereby challenging the narrated stereotypes of only existing in the domains of social missions, medicine, and environmental conservation (Banerjee, 2022; Salmon et al., 2023). The insights of Henrekson and Sanandaji (2020), were also confirmed through entrepreneurs who engaged in entrepreneurial innovative activities filled the different categories of entrepreneurship, intrapreneurship being those of acquired this innovativeness from prior employment from large firms, managerial business owners and Schumpeterian entrepreneurs. Findings presented the application of indigenous and inherited to being applied in various business ventures including professional services and other modern profit-making entrepreneurs.

While prior studies have largely examined the role of indigenous knowledge in product and service innovation, this research extends the discussion to business model innovation. Entrepreneurs demonstrated that inherited knowledge played a pivotal role in structuring their organisations, formulating market expansion strategies, and designing operational processes. Another key insight was in the scope of personalised pricing, prices were charged based on what the customer could afford and not what entrepreneurs assume the market can afford. This insight broadens the scope of indigenous knowledge beyond functional applications, positioning it as a strategic resource that shapes entire business frameworks. Traditionally, scholars have argued that indigenous knowledge is inherently localised and, therefore, lacks scalability (Kaplinsky & Kraemer-Mbula, 2022). However, this study reveals that entrepreneurs are actively internationalising indigenous knowledge-based enterprises, testing their innovations in new markets.

Furthermore, this study challenges the prevailing assumption that indigenous knowledge inhibits business scalability (Kaplinsky & Kraemer-Mbula, 2022). Instead, it reframes indigenous knowledge as a strategic asset. The findings illustrate how entrepreneurs effectively integrate traditional knowledge with modern technologies, such as artificial intelligence and digital platforms, thereby enhancing their competitive positioning. This contradicts previous assertions that indigenous knowledge is static and incompatible with contemporary business models practices (Kaplinsky & Kraemer-Mbula, 2022; Slavova & Metiu, 2022; Weiss et al., 2024). Literature frequently presents indigenous and modern business practices as mutually exclusive (Slavova & Metiu, 2022); however, this study highlights an emerging hybrid entrepreneurial model wherein this knowledge is harmonised with contemporary tools to foster innovation.

The study reveals that indigenous knowledge is not merely preserved but actively adapted, refined, and integrated into modern business methodologies, resulting in entrepreneurial solutions. Contrary to indigenous knowledge deteriorating and declining, its continued use by participants indicated that it was still relevant and resourceful. Although this knowledge is being criticised to scale and hereby limiting the transferability thereof and various application in other contexts, participants identified how in their usage of the knowledge, they were transmitters thereof and also indicating the scale thereof. The competitions, internationalisation of their businesses as well as travel exposure, indicated that the knowledge was being transmitted beyond borders and others could test the viability of using such knowledge in their own markets. Further to this, noticing barriers to the formalisation to indigenous knowledge(Kaplinsky & Kraemer-Mbula, 2022) was also contradicted by various claims of formalisation and support of the usage of such knowledge particularly in the biodiversity and agricultural sectors.

6.3 Socio-Cultural Factors Frame the Context for the Success of Entrepreneurial Innovation

Contextual factors often acted as a catalyst that could mould the success of the entrepreneurial innovation, even when influenced by indigenous knowledge. Confirmatory to Foss et al. (2019), cultural expectations and gender roles shape entrepreneurial experiences, with women often balancing family responsibilities. While the study indicated that indigenous knowledge hereby influenced entrepreneurial innovation, contextual factors would add onto how great this innovation would be a success. Notwithstanding the findings of Shankar and Narang (2020) and Arza and López (2021), socio-cultural influenced the scaling processes of the business especially in the context of married women entrepreneurs, however, there was community driven support in their ventures – most especially in funding models. Multilingual abilities influence business strategies—younger entrepreneurs are more likely to leverage digital sourced, while older entrepreneurs rely on traditional marketplaces. Kaplinsky and Kraemer-Mbula (2022) confirm that linguistic diversity in African markets influences business strategies, reinforcing the finding that younger entrepreneurs use digital marketing, while older entrepreneurs stick to traditional sales methods.

Previous research has predominantly framed socio-cultural factors, such as gender norms and community expectations, as constraints to entrepreneurship (Bakker & McMullen, 2023; Madison et al., 2022). However, this study finds that, in many cases, socio-cultural support systems actively enhance business success. Community-driven financing models, local market acceptance, and shared business networks create an enabling environment that fosters entrepreneurial growth. This finding challenges the prevailing assumption that socio-cultural influences serve only as impediments to entrepreneurship, instead demonstrating their potential to function as enablers that fortify business ecosystems. Contextual factors often acted as a catalyst that could mould the success of the entrepreneurial innovation, even when influenced by indigenous knowledge. While the study indicated that indigenous knowledge hereby influenced entrepreneurial innovation, contextual factors would add onto how great this innovation would be a success. Notwithstanding the findings of Shankar and Narang (2020) and Arza and López (2021), socio-cultural influenced the scaling processes of the business especially in the context of married women entrepreneurs, however, majority of the entrepreneurs emphasised the support of community driven support in their ventures – most especially in funding models.

6.4 Entrepreneurial Innovation: Replicative and Transformative Ventures

Within the study, the domain of entrepreneurial innovation was broad and covered various processes and activities within the scope of the topic. The study adopted a broad approach in the domain of entrepreneurial innovation and covered various processes and activities within entrepreneurial innovation (Henrekson & Sanandaji, 2020).The findings from the study confirmed the spectrum of entrepreneurial innovation to cover both replicative and transformative entrepreneurial ventures (Henrekson & Sanandaji, 2020). The study adopted a broad approach in the domain of entrepreneurial innovation and covered various processes and activities within entrepreneurial innovation entrepreneurial innovation to cover both replicative and transformative entrepreneurial ventures (Henrekson & Sanandaji, 2020).

6.5 Knowledge Transfer and Knowledge Pooling

Another significant insight emerging from this research concerns knowledge-sharing mechanisms. Scholarship on indigenous knowledge frequently emphasises the concept of knowledge transfer, which assumes a unidirectional flow of expertise from the more educated or experienced to the less privileged(Kaplinsky & Kraemer-Mbula, 2022; Slavova & Metiu, 2022; Weiss et al., 2024). However, this study identifies a knowledge-pooling system, wherein indigenous and “foreign” knowledge coexist and are exchanged Intergenerationally and across social strata. This challenges linear models of knowledge diffusion by presenting a multidirectional, collaborative learning process. Entrepreneurs do not simply deploy hierarchical models of learning acquired knowledge from external sources; instead, they engage in reciprocal learning within their firms, from various sources including employees. Not only is knowledge transferred (Kaplinsky & Kraemer-Mbula, 2022; Slavova & Metiu, 2022), but knowledge pooling systems occur where there is foreign indigenous knowledge co-existing with non-conventional Afrikaner methods of knowledge systems and across all hierarchical levels.

These further challenges the stereotype that comes with knowledge sharing particularly in this form, where it is referred to as being passed down from the more privileged, the more educated and more senior positions within ventures (Meyer & Naicker, 2023; Padilla-Meléndez, Ciruela-Lorenzo, et al., 2022; Slavova & Metiu, 2022). Rather, the study confirms that the knowledge pooling existing from sharing this knowledge is more liberated being intergenerational, transcending borders, race, age and social standing.

Literature emphasises the method of indigenous knowledge being transferred orally and from direct experiences within local contexts (Salmon et al., 2023). The study confirms this and further adds the effects of globalisation to such knowledge and its influence within the entrepreneurial domain. Not only is knowledge transferred (Kaplinsky & Kraemer-Mbula, 2022; Slavova & Metiu, 2022), but knowledge pooling systems occur where there is foreign indigenous knowledge co-existing with non-conventional Afrikaner methods of knowledge systems and across all hierarchical levels. These further challenges the stereotype that comes with knowledge sharing particularly in this form, where it is referred to as being passed down from the more privileged, the more educated and more senior positions within ventures (Meyer & Naicker, 2023; Padilla-Meléndez, Ciruela-Lorenzo, et al., 2022; Slavova & Metiu, 2022). Rather, the study confirms that the knowledge pooling existing from sharing this knowledge is more liberated being intergenerational, transcending borders, race, age and social standing.

Customers played an active role in vetting products and providing iterative feedback, shaping business strategies. The community-oriented nature of businesses allowed for real-time product refinement before scaling. Some participants noted that clients felt a sense of ownership over products, leading to stronger brand loyalty and innovation input. Trust-based relationships between businesses and customers made pricing more flexible and negotiable, showing a departure from conventional capitalist models. Williams et al. (2022) discuss client relationships in informal markets, but the literature does not fully explore how client engagement actively contributes to knowledge transfer and product refinement. This finding extends the “interactive learning” concept by showing that entrepreneurs in community-driven markets integrate client feedback as an organic part of innovation—an idea that is largely absent from Western entrepreneurial literature. The research suggests that effectuation theory (Grégoire & Cherchem, 2020) can be expanded to include customer-based knowledge as a strategic resource, reinforcing the “whom I know” principle.

6.6 Unintentional Innovators: Redefining Entrepreneurial Innovation

Confirmatory to Williams et al. (2022), the study confirmed that participants associated innovation with radical new inventions and limited their market-driven and operational innovations and other entrepreneurial activities as non-innovative. Majority of the respondents indicated resilience and adaptability as a key factor within their entrepreneurial journeys (Wang & Wei, 2021). As all of the entrepreneurs dedicated their business to solving societal challenges, it was clear that most of these innovations within their businesses were driven by external shocks (Wang & Wei, 2021).

The study further introduces the concept of entrepreneurs as unintentional innovators. While conventional discourse assumes that entrepreneurs are conscious agents of innovation, this research suggests that many do not initially recognise their activities as innovative. Instead, innovation is often realised retrospectively. This phenomenon is particularly pronounced among female entrepreneurs, who frequently undervalue their contributions to market-driven and operational innovation. While scholars have argued that innovation in non-Western contexts is often undervalued, this study reveals that entrepreneurs themselves frequently underestimate their own innovative contributions. Scholars indicate that there is less attention dedicated to non-Western theories and frameworks on their influence on value creation for ventures and in turn manifests into these entrepreneurs and other actors within these ecosystems acknowledging their sources of innovation as inferior and tacit (Banerjee, 2022). The common factor within these findings is that all entrepreneurs touched on aspects of knowledge that was inherited from their families and communities, and which was dispersed in various forms. None of these entrepreneurs acknowledged this as a superior form of knowledge and rather acknowledged it as intellectual property. Although these in most cases the typical Silicon Valley principles and frameworks of entrepreneurship were not implemented (Kapturkiewicz, 2022) and these businesses were scaling and prospering in the absence thereof, majority of the participants were not highlighting this fact. The realisation would often only appear towards the end of the interview.

Scholars have traditionally argued that entrepreneurship in emerging markets is primarily necessity-driven, leading to survivalist enterprises that emerge in response to economic hardship (Williams et al., 2022). However, this study introduces the concept of "unemployability", which posits that entrepreneurs initiate businesses not solely due to a lack of employment opportunities but because their identities or characteristics do not align with conventional employment structures. This perspective reframes entrepreneurship in Africa as a deliberate, career-oriented choice rather than a mere survival mechanism. Additionally, the study found that many entrepreneurs were primarily motivated by intrinsic drive and passion rather than economic distress, challenging dominant Western-centric paradigms that conceptualise entrepreneurship as a reaction to unemployment (Henrekson & Sanandaji, 2020). Participants described their entrepreneurial journeys as self-directed career pathways.

6.7 Intellectual Property Challenges on Indigenous Systems

A key and emerging challenge was the ownership of indigenous knowledge, its perseveration and usage in the future particularly in the entrepreneurial domain. Studies emphasised that knowledge was not protected and therefore the originators of the knowledge would not benefit from such hereby indicating a challenge in terms of intellectual property rights (Castaldi et al., 2024; Meyer & Naicker, 2023). Research findings were conflicted on this, some participants were for the ownership rights being protected, particularly in the sphere of entrepreneurship where this knowledge is used to drive ventures. However, various participants were more open to the beneficial and communal benefit of this knowledge, emphasising a free for all approach. Studies indicate that there were instances were indigenous knowledge was used in its raw form particularly in intangible forms of inputs such as values leading to business model innovation. There was emphasis on the lacking framework addressing the nature of entrepreneurship in emerging markets (Shankar & Narang, 2020) , not only for entrepreneurs themselves but for the awareness of various actors within the ecosystem, most importantly policymakers. Coupled with the protection rights of intellectual property within indigenous knowledge systems, various entrepreneurs highlighted the emergence of knowledge spillovers particularly in small businesses (Giraudo et al., 2019). If oftentimes, limiting the scalability and innovative efforts.

There was emphasis on the lacking framework addressing the nature of entrepreneurship in emerging markets (Shankar & Narang, 2020) , not only for entrepreneurs themselves but for the awareness of various actors within the ecosystem, most importantly policymakers. This was coupled with the protection rights of intellectual property within indigenous knowledge systems, various entrepreneurs highlighted the emergence of knowledge spillovers particularly in small businesses (Giraudo et al., 2019). These indicators were identified to limit scalability and innovative efforts. Entrepreneurs developed flexible business models through trial and error, adapting to market conditions (Henrekson & Sanandaji, 2020) and their entrepreneurial activities also emerge. Further to the point of Bruton et al. (2024), indicating limitations to innovation arising from the conditions in emerging markets, most participants indicated resilience and pivoting through the models to sustain their enterprises.

6.5 Alternative Methods of Funding for Indigenous knowledge based businesses

A further key finding relates to financing models for indigenous entrepreneurs. While existing literature has explored community-based crowdfunding as an alternative funding mechanism (Parhankangas & Colbourne, 2023), this study provides direct insight into informal financing structures within family businesses, including financial support from relatives in both cash and in-kind contributions. Additionally, the study highlights the significance of informal stokvel micro-loans as an accessible and flexible funding source, representing an alternative financing model that, while not yet formalised, is widely utilised. Entrepreneurs were found to actively leverage nonmainstream funding sources beyond conventional venture capital structures. Contrary to formal financing models that often impose stringent requirements, community-driven financial systems offer more adaptable and inclusive, alternate funding solutions that are often overlooked within emerging markets. This study also revealed that in many cases, parents and other family members assumed the role of principal borrowers, while entrepreneurs functioned as the primary beneficiaries of the funds. Consequently, rather than reinforcing the dominant narrative that access to capital constitutes a primary barrier to entrepreneurship, this study underscores the existence of alternative funding pathways that entrepreneurs strategically employ to sustain and expand their ventures.

6.5 The Disconnect between Formal Education and Practical Entrepreneurship

Observations throughout the interview indicated that participants who were educated, were more outspoken and confident in their engagements, in comparison to those who had a gap in education. The same could be indicated about informal and survival businesses in comparison to other businesses. While the less educated entrepreneurs operated more survivalist businesses, the educated entrepreneurs operated diverse range of businesses. Their businesses also engaged more formalised structures. Comparisons could also be drawn between educated and less educated entrepreneurs, where the educated ones could access indigenous knowledge and other forms of “inherited knowledge”, their business models included “modern” practices, and they listed their combination of indigenous knowledge and other forms of knowledge as a strength.

6.10 A new form of business knowledge: Inherited-Adapted Knowledge (IAK)

Although participants highlighted how the use of accumulated from various knowledge sources and how this would then be transferred into adaptive business strategies and innovation, the study has identified a new stream of knowledge that is not only indigenous but emerges in various forms. This knowledge incorporates multiple sources, extending beyond indigenous and local knowledge to encompass experiences from rural and urban settings, industrial practices, and personal life experiences and participants hereby struggled to define what counts as “indigenous knowledge” due to migration, urbanisation, and cultural blending.

While Chapter 5 categorises this knowledge as inherited, its adaptability across different contexts introduces further complexity to its conceptualisation. Additionally, this knowledge integrates spiritual dimensions, with certain elements of entrepreneurial innovation being referred to as “gifts”, “gifted”, or “visions”. Participants employed diverse terminologies to articulate this knowledge, yet it manifested in multiple forms under varying conditions, rendering it difficult for them to associate it with a single overarching term. A shared theme across participants’ accounts was the tacit nature of this knowledge within their entrepreneurial ventures, despite their consistent reliance on it to navigate and enhance their business practices.

The common factor within these findings is that all entrepreneurs touched on aspects of knowledge that was inherited from their families and communities, and which was dispersed in various forms. None of these entrepreneurs acknowledged this as a superior form of knowledge and rather acknowledged it as intellectual property. Although these in most cases the typical Silicon Valley principles and frameworks of entrepreneurship were not implemented (Kapturkiewicz, 2022) and these businesses were scaling and prospering in the absence thereof, majority of the participants were not highlighting this fact. The realisation would often only appear towards the end of the interview. Scholars indicated that there was less attention dedicated to non-Western theories and frameworks on their influence on value creation for ventures and in turn manifests into these entrepreneurs and other actors within these ecosystems acknowledging their sources of innovation as inferior and tacit (Banerjee, 2022).

Chapter 7: Conclusion and Recommendations

7.1 Introduction

This chapter provides a synthesis of the study's key findings and their implications for entrepreneurial innovation through indigenous knowledge systems (IKS) among South African women entrepreneurs. The discussion revisits the research objectives and major insights gained, highlighting their contributions to existing literature, entrepreneurial practice, and policymaking. The chapter further explores practical recommendations for entrepreneurs, policymakers, and business support institutions to enhance the economic role of indigenous knowledge-driven businesses. Finally, the study’s limitations are acknowledged, followed by suggested directions for future research.

The study aimed to further meet the research objectives by understanding how indigenous knowledge informs entrepreneurial innovation, to assess barriers and enablers for women entrepreneurs who utilise indigenous knowledge, to assess how indigenous knowledge interacts with modern business practices and to provide insights into policy and institutional support mechanisms that enhance entrepreneurial innovation through indigenous knowledge.

7.2 Principal Findings

7.2.1 Indigenous Knowledge as a Driver of Entrepreneurial Innovation

The findings of this research confirm that women entrepreneurs use their indigenous knowledge to innovate in their ventures. The study further provides a deeper understanding of the relationship between indigenous knowledge and entrepreneurial innovation. Women entrepreneurs, in various business industries, leverage indigenous knowledge to develop unique business solutions. The transmission of indigenous knowledge through oral traditions and community networks plays a crucial role in shaping business practices and decision-making. Additionally, the link between tenure and indigenous knowledge influences resource allocation and sustainability strategies at every stage of business development. While indigenous knowledge contributes significantly to both rural and urban entrepreneurship, urbanisation poses challenges to maintaining its authenticity. In male-dominated industries, it serves as an alternative pathway to market entry and innovation. Moreover, entrepreneurial innovation driven by indigenous knowledge thrives through co-creation and collaboration with various stakeholders, including community members, customers, and employees.

7.2.2 Barriers to Indigenous Knowledge-Based Innovation

Despite its benefits, several barriers hinder indigenous knowledge-based innovation. Limited institutional recognition prevents indigenous knowledge from being fully integrated into formal business frameworks, making it difficult for entrepreneurs to gain institutional support. The absence of clear legal protections on intellectual property leads to the exploitation of indigenous knowledge by commercial enterprises, often without benefiting local communities. Additionally, limited financial resources and restricted access to formal business training hinder the growth and scaling of ventures that rely on indigenous knowledge. Urbanisation contributes to the loss of indigenous identity, making it challenging for entrepreneurs to maintain the essence of their knowledge in business innovation. Women entrepreneurs face further obstacles in male-dominated industries, where indigenous knowledge is often undervalued or appropriated. Furthermore, evolving indigenous identities in urban settings affect knowledge transmission and business applications. The mobility of migrant labourers also impacts the retention and methods of transfer of indigenous knowledge across different regions and industries.

7.3.3 Enablers of Indigenous Knowledge-Based Innovation

Contrary to the above paragraph, there are several enablers support indigenous knowledge-based innovation. However, in this case, entrepreneurs have to adopt effectuation-driven strategies, leveraging adaptive, resource-based approaches and existing community networks to ensure the success of such innovations. Collaborative business models, including collective networks, knowledge-sharing platforms, and mentorship programmes, strengthen these ventures. Many entrepreneurs rely on informal financial systems such as stokvels and family contributions to sustain their businesses. Additionally, business model diversity, where family businesses interact with independently operated indigenous knowledge enterprises, highlights different innovation pathways. Co-creation and stakeholder engagement further enhance the value of indigenous knowledge-driven businesses by actively involving customers, employees, and community members.

7.4.4 The Role of Indigenous Knowledge in Women's Entrepreneurship

Indigenous knowledge plays a crucial role in women's entrepreneurship, serving as a means of economic empowerment. The study presents how businesses rooted in this knowledge often prioritise community well-being and sustainability over purely profitdriven motives. Additionally, prior education and work experience shape how indigenous knowledge is applied in entrepreneurship, with significant variations across industries and business structures. The application of indigenous knowledge also differs based on racial and cultural backgrounds, as seen in the distinct farming practices of Afrikaans and Black entrepreneurs.

In Summary, indigenous knowledge systems influence entrepreneurial innovation within the context of South Africa Women Entrepreneurs and this knowledge often emerges within the broader phenomenon of inherited-adaptive knowledge systems (IAK).

7.3 Theoretical Contributions

7.3.1 Broad Entrepreneurship Theory

Broadly with in entrepreneurship studies, this study contributes to entrepreneurship and innovation literature by offering a non-Western perspective on knowledge-based innovation. As knowledge is a key resource in entrepreneurial innovation, it challenges the conventional assumption that formal education and research-driven knowledge are the sole drivers of innovation.

The study further highlights the role of alternative learning systems in entrepreneurial success. By integrating indigenous knowledge systems into entrepreneurship discourse, the study expands theoretical frameworks to accommodate diverse epistemologies. The findings also suggest that entrepreneurship theories should acknowledge hybrid models of knowledge transmission, incorporating both indigenous and institutional learning.

7.3.2 Effectuation Theory

In extending Effectuation Theory by Sarasvathy (2001) the study's findings suggest that indigenous knowledge can be conceptualised as a core entrepreneurial resource, further strengthening the bird-in-hand principle.

The benefit of using an exploratory study was the emergence of insights that were unexpected from the findings. The first contribution the integrating indigenous knowledge as a means-driven approach to business creation. The findings from the study offers a more inclusive understanding of entrepreneurship in emerging economies and the most significant contributions is being the expansion of the Bird-in-

Hand principle, where indigenous knowledge is positioned as a core entrepreneurial resource, rather than being secondary to formal education, financial capital, or technical skills. This challenges traditional views that assume entrepreneurship starts with tangible assets, instead demonstrating that cultural heritage, intergenerational wisdom, and locally adapted practices are foundational to business creation.

Secondly, not only were the insights key to the “Bird-In-Hand” principle, but insights also arose as to how this knowledge applies to the other principles of effectuation theory.

In the affordable loss principle, participants applied knowledge experimentation and low risk learning, which was derived from inherited knowledge and indigenous knowledge. They often tested business ideas within trusted community networks before scaling operations. This expands the Affordable Loss principle by incorporating community-based learning cycles as a risk-mitigation strategy.

For the Patchwork Quilt Principle, participants the knowledge sharing and knowledge pooling instances highlighted how entrepreneurs co-create business opportunities by working with others rather than relying solely on their own skills. This principle emerged strong in the emphasis of knowledge sharing, where entrepreneurs learn collectively rather than individually.

The Lemonade principle was illustrated through adapting indigenous knowledge and inherited knowledge to new market demands. Lastly, the Pilot-in-the-Plane principle involved instanced where the participants took charge by using this knowledge as a tool for market creation rather than passively responding to demand.

7.4 Practical and Policy Implications

7.4.1 Recommendations for Entrepreneurs

Women entrepreneurs leveraging indigenous knowledge can enhance their business strategies through formalising indigenous knowledge and other alternate forms of knowledge that form part of the inherited knowledge phenomenon. Developing documentation and knowledge-sharing practices to strengthen business credibility. Identifying ways to commercialise indigenous products while maintaining cultural authenticity is key as it promotes exposure to this knowledge and how it is sued in business hereby providing a platform for various entrepreneurs to also enter the market given what they have and what they know.

7.4.2 Policy Recommendations

Policymakers should support indigenous knowledge-driven entrepreneurship through recognition and institutional support where they can create regulatory frameworks that acknowledge indigenous knowledge as a legitimate entrepreneurial resource. Provision of funding and financial Inclusion by establishing alternative financial instruments, such as micro-loans and grants, that are tailored for such businesses, other than completely refusing to fund them. Intellectual property protection was also a key issue, particularly in the adapted knowledge of entrepreneurs. Developing legal mechanisms to safeguard traditional knowledge from exploitation and ensure that indigenous communities benefit from commercialisation.

7.4.3 Recommendations for Business Support Institutions

Business incubators, universities, and industry associations can enhance support for indigenous knowledge-driven entrepreneurship through curriculum integration by including indigenous knowledge methodologies in business and entrepreneurship training. There can also be mentorship and capacity building of future entrepreneurs by connecting indigenous entrepreneurs with business mentors to bridge knowledge gaps. Knowledge exchange platforms are also key, and these can be established by allowing for dialogue between traditional knowledge holders and modern business stakeholders.

7.5 Study Limitations

While this study provides valuable insights, it is important to acknowledge its limitations. The study's findings are specific to South African women entrepreneurs, and future studies should explore comparative analyses across different regions. The qualitative nature of the research provides rich insights but limits generalisability. Future research could incorporate quantitative assessments of indigenous knowledge-driven innovation. The study identifies challenges in protecting indigenous knowledge but does not offer a detailed legal framework for intellectual property rights.

7.6 Future Research Directions

Longitudinal studies in examining the long-term impact of indigenous knowledge-based businesses on economic growth can be adapted. The study also calls for quantitative studies that can measure the number of businesses that exist that leverage on such knowledge systems. In addition to this, longitudinal studies can also be key in assessing how indigenous knowledge is used in various stages of a business i.e. formation stage, growth stage.

Future research should investigate how Indigenous Knowledge (IK) is practically applied at different stages of business development and how entrepreneurs in rural and urban areas navigate its use. A key focus should be on whether customers and stakeholders recognise IK-based innovation and how this impacts investment decisions. Comparative studies between different African countries and global contexts should examine how tenure systems affect business sustainability and knowledge transmission, particularly in family businesses versus externally funded enterprises.

The role of stokvels and informal community financing in sustaining businesses that are driven by indigenous knowledge needs further exploration, as does the reliance on family contributions. Research should also examine how migrant labourers contribute to or learn from IK in business settings, especially in male-dominated industries. Another critical aspect is understanding how urbanisation impacts Indigenous entrepreneurs, particularly those moving into townships, and whether this transition leads to the loss or evolution of traditional business practices.

7.7 Conclusion

This study highlights the untapped potential of indigenous knowledge in shaping entrepreneurial innovation. By challenging traditional Western-centric models of innovation, it underscores the importance of culturally embedded, locally driven approaches to business development. The findings call for greater institutional recognition, policy reform, and support mechanisms that enable indigenous knowledge-driven businesses to thrive. Emphasising collaborative learning, stakeholder engagement, and market adaptation, the study advocates for an inclusive, decolonised perspective on entrepreneurship.

By bridging indigenous knowledge with contemporary business strategies, this research offers a foundation for future studies, policy development, and practical applications, ultimately contributing to the sustainable economic empowerment of women entrepreneurs in South Africa and beyond

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Appendix 1: Semi-structured interview guide

The body of the interview guide consisted of four sections that probed into the innovative practices of the women entrepreneurs and their use of indigenous knowledge thereon. The open-ended questions in the semi-structured interviews allowed for exploring their practices in order to gain insight into the different dimensions of their entrepreneurial innovation.

Dimension	Category	Questions
Entrepreneurial Background	**Personal and Business Context** *Focuses on the entrepreneur's journey, motivation, industry, and business model.*	1. Can you tell me a bit about yourself and your business? *- Possible prompts based on the response: When did you start your business? What motivated you to become an entrepreneur?* 2. What industry or sector is your business involved in? 3. How long have you been operating your business, and what products or services do you offer?
Indigenous Knowledge and Innovation Integration	**Knowledge and Application** *Examines the role and use of indigenous knowledge is used in entrepreneurial innovation.*	4. Can you tell me about the process of developing a product or service in your business? 5. What milestones and critical incidents have you faced in your business? 6. What knowledge did you use to seize these milestones or, rather, overcome these incidents? 7. Where did you obtain this knowledge, or in the case of advice, the advice? 8. Where did the source of this knowledge or advice obtain their knowledge or advice? *- Possible prompts based on the response: Was this from formal education, i.e. school, or from other sources?* *- Possible prompts based on the response:*

		Please explain which sources these were and, if possible, where they obtained this knowledge. 9. The knowledge that you acquired, do you still use it as a significant part of growing your business, or have you adopted new methods? *- Possible prompts based on the response: If so, what are these new methods and where and how have you sourced them?*
Challenges and Opportunities in Knowledge Application	**Barriers and Enablers** *Explores challenges, support systems, and market perceptions of indigenous knowledge.*	10. What challenges, if any, do you face in incorporating the knowledge you have obtained into your business? *- Possible prompts based on the response: Do you sit with other ladies during your societies and meetups to discuss these challenges and support each other?* 11. Have you experienced any difficulties in scaling your business or attracting investment while using this knowledge? *- Possible prompts based on the response: How do customers or investors respond to your use of this knowledge?*
Future Relevance of Indigenous Knowledge	**Sustainability and Adaptability** *Considers how indigenous knowledge can evolve and remain relevant for future businesses.*	12. What parts of this knowledge will you use in the future to further grow your business? 13. Do you think this knowledge will still be relevant and useful for your business and other businesses in the future? *- Possible prompts based on the response: Please elaborate on why you think so.*

Appendix 2: Thematic analysis code mapping

Open Codes	Count of Occurrences	Axial Coding	Emergent Themes (Thematic categories)
"""gift""/ """gifted"""	10	Knowledge and Learning	**"Inherited" knowledge and processes of learning are practical and key in business.**
"accessibility/ ""knowledge is out there"""	10		
Ancestors/Prior Generations	28		
books	5		
Client learning	19		
Combination of IK and formal	21		
Creativity	8		
curious	1		
Education and formal training	44		
Education Gap	10		
Entrepreneurship program	3		
Indigenous Herbs	11		
indigenous knowledge	25		
indigenous methods of prediction/forecasting	2		
indigenous oils	3		
indigenous plants	6		
institutional knowledge from suppliers and manufacturers	1		
Intuition	4		
IP theft	2		
knowledge from industry	15		

knowledge from society	20		
knowledge irrelevant in future	2		
knowledge relevant for future	9		
knowledge sharing	8		
Knowledge/Advices from Family	40		
Language	9		
lived experiences	26		
Mentors	7		
metaphors/images/practices	7		
misconceptions (IK)	7		
No education	4		
observing	8		
preserving knowledge	15		
research	13		
skills	11		
songs	1		
Still applies the knowledge	13		
Street/kasi/local knowledge	9		
Street/kasi/local knowledge: Advantage / Good	6		
Street/kasi/local knowledge: Disadvantage / Bad	3		
subconscious	1		
undocumented	5		
Unique (will never be extinct)	6		
Early exposure to business/ entrepreneurship	16	**Professional Experience**	

general management	1		
Juggling	3		
Previously employed	11		
Professional services	3		
Unemployable	8		
build from challenges and NOT opportunity	1		
business accelerators	4		
business model innovation	11		
clash between modern and indigenous strategies	3		
Co-create/ complement	19		
Complementary services	9		
covid	6	**Entrepreneurial Adaptation and Business Growth Strategies**	**Adaptive Business Strategies and Innovation**
digital/online/AI	31		
Experiment	7		
Family business	6		
formalisation	4		
hobbies to business/ side hustles	10		
international exposure	7		
internationalisation	1		
modernisation	10		
partnerships / ecosystem innovation	12		
pivot	1		
Positioning	6		
Process	3		

product innovation	22		
replicating business	10		
scale/grow	6		
seasonal business	2		
Society/Stokvel			
community/network	11		
solo	5		
taxi rank	2		
Transferability and relatability	5		
Trends (Innovation)	8		
Tried multiple businesses	8		
Understand different markets	18		
Using a running a household as process innovation	3		
word of mouth	1		
Affordable loss	1	**Financial and Economic Factors**	
entrepreneurship needs money	2		
Family Investor	7		
finances	6		
free natural resources	1		
funding/investment	10		
grants	2		
land	1		
land rights/ownership	4		
Pricing challenges	12		
resources	2		
sustainability	1		
Emotional Milestone	2		
value	2		

"""living lab"""	1	Entrepreneurial Mindset & Business Leadership	Contextual View: Identity, Social Dynamics, and the Challenges of Entrepreneurship
Authenticity	10		
body language	2		
confidence	5		
inferiority / shy	5		
motivation	1		
Passion	11		
Resilience and Suffering	8		
selfish	3		
storytelling	12		
Trust	3		
Ubuntu	7		
visions/dreams	4		
business partner	1	Social & Community Influence on Business	
Community	41		
cultural practices	20		
faith/religion/spirituality	23		
foreign nationals	2		
freedom	1		
Friends	11		
Gender	8		
Genes	7		
girlhood/sisterhood	1		
Immigrants (employees)	3		
influence	5		
inward migration?	2		
merge of different cultures	6		
Participating	2		
polygamy	3		
Prior connections	10		
prophet	1		
relationships	4		

societal impact Stereotypes support survival upbringing Western culture Values young	29 13 3 7 4 9 12 3		
barriers to entry government barriers/corruption government lobbying informal Lack of women role models/platforms in business No gender stereotypes unemployment No desire to grow or scale Poor background activism depression	1 10 4 13 5 2 3 3 3 3 2	**Systematic Barriers and Structural Challenges**	