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Innovation Barriers Facing Small Black-Owned Architectural and Landscape Architectural Firms in South Africa

by

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DECLARATION:

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Abstract

Innovation within the built environment is a fundamental catalyst for competitiveness, sustainability, and sectoral transformation. Despite this, emerging Black-owned architectural and landscape architectural practices in South Africa encounter systemic impediments that stifle their innovative capacity. This dissertation investigates the multidimensional barriers to innovation within these firms and identifies strategic pathways to the adoption of Open Innovation frameworks.

The study adopted a qualitative research design anchored in an interpretivist paradigm and a phenomenological strategy. This methodological approach facilitated an in-depth exploration of the lived experiences of ten purposively selected practitioners across private practice, public infrastructure departments, and non-profit organisations. Primary data collected through semi-structured interviews were synthesised using thematic analysis. The findings revealed seven critical themes: financial fragility, collaboration deficits, structural client bias, regulatory constraints, mentorship limitations, internal capacity gaps, and disparate levels of open-innovation awareness.

The research demonstrates that a deficit does not hinder innovation in creativity, but by an entrenched "Vicious Cycle of Exclusion." These interlocking structural and historical constraints restrict resource flows and knowledge sharing, preventing firms from engaging in collaborative experimentation. Drawing on Treacy and Wiersema's (1993) Value Disciplines, the findings reveal that systemic pressures force emerging, Black-led firms into "operational excellence" modes focusing on survival at the expense of innovation-driven "product leadership."

The study concludes that meaningful transformation requires a departure from symbolic inclusion toward structural reform. Key recommendations include implementing tiered fee structures, inclusive procurement frameworks, and formalised mentorship networks. By dismantling systemic barriers, the sector can unlock the latent potential of Black-owned firms, fostering an environment where Open Innovation can flourish. This research contributes to the discourse on built-environment transformation by bridging the gap between innovation theory and the socio-economic realities of South African professional practice.

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1. CHAPTER 1
INTRODUCTION AND BACKGROUND OF THE STUDY

1.1. Introduction

This chapter establishes the foundational framework for the study, outlining its primary aims, the scope of the investigation, and the socio-economic landscape in which it is situated. The study examines the systemic, financial, and institutional barriers that hinder innovation within small, Black-owned architectural and landscape architectural firms in South Africa. Specifically, it examines how these constraints impede the ability of such firms to engage in "Open Innovation", the deliberate exchange of internal and external knowledge to accelerate development and market reach.

Central to this research is the researcher's dual role as the primary researcher and the owner of a micro, Black-owned landscape architectural firm. The researcher's professional engagement has provided direct exposure to the lived realities of navigating funding limitations, policy complexities, and exclusionary networks. Through personal experience and interactions with peers, the researcher has observed significant barriers to expansion that make it challenging to grow the practice to a level where the researcher can focus on their core mission: equipping other young professionals with the necessary tools to establish their own businesses. This struggle is further intensified by the intersectional challenges of being a youth and a female in an industry historically dominated by white males. By investigating these dynamics, this study seeks to bridge the gap between individual professional struggle and the broader structural transformation of the South African built environment.

1.2. Background to the Research Study

Innovation is globally recognised as a critical driver of competitiveness, productivity, and inclusive economic development. In the modern economy, a firm's ability to innovate determines its capacity to adapt to rapid technological change and market shifts. For South Africa, innovation is not merely a commercial tool but a strategic imperative for addressing systemic developmental challenges and fostering transformation. National policies, such as the National Development Plan (NDP 2030) and the 2019 White Paper on Science, Technology and Innovation, explicitly position

inclusive innovation as a cornerstone for building a more equitable economy and empowering previously disadvantaged professionals.

Small and Medium-Sized Enterprises (SMEs) are the lifeblood of South Africa's economy, serving as the fifth-largest employer and supporting approximately 1.3 million jobs (Infrastructure South Africa, 2025). Within the construction and built environment sectors, SMEs make a significant contribution to the national GDP and play a vital role in addressing historical spatial inequalities (Radziwon & Vanhaverbeke, 2022). These enterprises are often more agile than larger firms, making them uniquely suited to drive urban and rural development through localised solutions (van de Vrande et al., 2009). However, South African SMEs usually face a "liability of smallness," characterised by limited financial reserves and restricted access to the formal innovation networks necessary for sustained growth.

Architectural and landscape architectural firms occupy a strategic position within the built environment and the broader urban-rural development agenda (Sakar et al., 2023). They act as "knowledge-intensive" drivers of innovation, responsible for shaping sustainable, inclusive, and ecologically responsive environments (Lai et al., 2016). While their global role has evolved from providing simple design services to leading urban development and sustainability initiatives, the South African context presents unique hurdles.

For the field under investigation, Black-owned design practices are often trapped in a "Vicious Cycle of Exclusion" (McFarland-Catalan, 2024). While these firms possess the technical skill and ethical vision to pioneer Open Innovation, they are frequently thwarted by financial fragility, institutional inertia, and structural client bias (Omopariola et al., 2024).

These firms find themselves excluded from high-value procurement pipelines and dominant professional networks, which limits their ability to contribute to the transformation of spatial and social landscapes (Amoah, 2024). Understanding these barriers is essential to achieving South Africa's goals of inclusive participation and meaningful professional empowerment.

While this study focuses on the South African landscape, the barriers to innovation for Black-owned design firms reflect a broader Continental challenge. Across Sub-Saharan Africa, architectural and engineering SMEs operate within institutional voids environments where a lack of formal credit systems, fragmented professional registries, and colonial-era procurement legacies hinder the growth of indigenous firms (Omopariola et al., 2024). In markets like Nigeria, Kenya, and Ghana, small firms similarly struggle to move from traditional project-based survival to Open Innovation models due to a lack of collaborative infrastructure. By investigating the South African context, this research contributes to a wider understanding of how post-colonial professional sectors can be restructured to foster inclusive innovation across the continent.

1.3. Background of the Researcher

The researcher is the sole owner of a 100% Black-owned, female-led micro landscape architectural practice in South Africa. This insider position provides a unique vantage point, as the researcher is directly embedded in the structural and professional realities under investigation. Having assumed ownership of an established firm during the 2021 economic transition, the researcher has first-hand experience navigating the triple constraint of financial precarity, regulatory friction, and the survivalist pressures exacerbated by the post-pandemic landscape.

This dual identity as both a practitioner and a researcher was leveraged to establish high levels of relational trust with participants, enabling the collection of rich, authentic data on systemic exclusion that might otherwise be shielded from outsiders. To maintain academic rigour, the researcher employed bracketing and reflexive journaling to ensure that personal industry frustrations did not overshadow the participants' voices. Thus, the researcher’s positionality is not a source of bias to be eliminated, but a critical research instrument for decoding the nuanced barriers to Open Innovation within the South African built environment.

1.4. Purpose of Study

The primary purpose of this study is to investigate the systemic, financial, and institutional barriers that inhibit innovation within small, Black-owned architectural and landscape architectural firms in South Africa. The investigation is specifically delimited to these three pillars as they represent the primary 'triple-constraint' the external structural realities that dictate market access and resource flow (Vilakazi & Bosiu, 2021).

Using Institutional Theory and Open Innovation (OI) as analytical lenses, the research interrogates how external structural conditions shape and limit the innovation pathways available to professional practices. Rather than attributing innovation outcomes to internal firm deficiencies, the study focuses on the policy-practice gap and the exclusionary professional networks that characterise the South African built environment. Methodologically, the study provides a qualitative, interpretive account of practitioners' lived experiences to bridge the gap between micro-level innovation and macro-level transformation imperatives.

1.5. Research Problem and Rationale

The central research problem addressed in this study is that, despite possessing technical competence and professional expertise, small Black-owned architectural and landscape architectural firms in South Africa remain structurally constrained in their ability to innovate (Bolosha et al., 2023). While Open Innovation (OI) theory assumes the availability of fluid knowledge flows and supportive environments, these conditions are unevenly distributed in the South African built environment, trapping firms in what this study conceptualises as a "Vicious Cycle of Exclusion."

This problem is defined by three critical dimensions that necessitate this investigation. Firstly, the Structural and Network Dimension: Historically embedded economic conditions and exclusionary professional networks limit access to the high-value collaborative ecosystems required for innovation. This results in a "professional silence" where small firms are disconnected from the knowledge inflows available to established, larger practices.

Secondly The Financial and Risk Dimension: Innovation requires financial "slack" to de-risk experimentation. Persistent financial precarity, exacerbated by the post-

pandemic landscape, forces these firms into a survivalist mode of operation, leaving no capital for the R&D or technology adoption necessary for OI pathways (Radziwon & Vanhaverbeke, 2024).

Lastly, the Institutional and Regulatory Dimension: A profound "policy-practice gap" exists where formal registration processes and procurement frameworks (e.g., CIDB and B-BBEE) create regulatory friction rather than support. This gatekeeping restricts market entry and hinders the mentorship essential for long-term sustainability (Vilakazi & Bosiu, 2021).

The rationale for this research is grounded in the urgent need to align South Africa's transformation agenda with practical innovation outcomes. This study is motivated by the paradox that, despite extensive post-apartheid policies, Black-owned firms continue to operate on the margins of the industry. By interrogating these dynamics through an Open Innovation lens, the research seeks to move beyond narrative descriptions of inequality toward a model of Inclusive Innovation. This is not only a matter of firm-level survival but is essential for achieving the National Development Plan (NDP) 2030 and UN Sustainable Development Goals (SDGs 9, 10, and 11). Ultimately, the study aims to provide evidence-based insights to inform policy reforms that can transform the built environment into a more equitable and sustainable sector.

1.6. Problem Statement

The central research problem addressed in this study is that, despite possessing the requisite technical competence and professional expertise, small Black-owned architectural and landscape architectural firms in South Africa remain structurally constrained in their ability to innovate (Bolosha et al., 2023). While Open Innovation (OI) theory assumes the availability of fluid knowledge flows and supportive environments (Chesbrough, 2017), these conditions are unevenly distributed in the South African built environment.

This research problem is characterised by three critical dimensions. The Structural and Network Dimension as small Black-owned firms operate within a 'Vicious Cycle of Exclusion' (Mafundu & Mafini, 2019) where exclusionary professional networks and client bias limit access to the high-value collaborative ecosystems required for Open

Innovation. This prevents the 'knowledge inflows' that are taken for granted in historically advantaged practices.

The Financial and Risk Dimension as Innovation requires financial slack to de-risk experimentation. However, persistent financial precarity and a lack of access to innovation-specific funding mean these firms are locked in survivalist modes of operation, leaving no capital for the R&D or technology adoption necessary for OI pathways (Radziwon & Vanhaverbeke, 2024).

The Institutional and Regulatory Dimension: There is a profound policy-practice gap, where formal professional registration processes and procurement frameworks, such as CIDB and B-BBEE guidelines, create regulatory friction rather than support. This institutional gatekeeping restricts market entry and hinders the mentorship, and skills transfer essential for long-term sustainability (Vilakazi & Bosiu, 2021).

Consequently, the exclusion of these firms from meaningful innovation ecosystems not only undermines individual firm survival but weakens the broader transformation and developmental objectives of the built environment professions. This study addresses the critical gap left by policy interventions that remain poorly aligned with these specific structural realities (Bolosha et al., 2023).

1.7. Value of the Study

The study provides unique value by moving beyond identifying barriers to developing an applied framework for inclusive innovation. Its contributions are threefold: Theoretical Contribution, the research offers a critical refinement of Open Innovation theory by introducing the "Vicious Cycle of Exclusion." This framework demonstrates that the efficacy of OI strategies depends on an equitable market structure, a variable often taken for granted in the mainstream literature.

Practical Contribution for practitioners, the study identifies "compensatory mechanisms" such as informal micro-networks and peer-based mentorship that enable innovation despite resource scarcity. These insights offer a roadmap for small firms to navigate institutional exclusion.

Policy Contribution: The findings provide evidence-based insights to inform reforms in procurement systems, CIDB guidelines, and innovation funding models. By

documenting the "lived reality" of the policy-practice gap, the study offers a basis for more effective, transformation-oriented interventions in the built environment.

1.8. Research Aim, Objectives and Questions

1.8.1. Research Aim

This study aims to investigate the systemic, financial, and institutional barriers that inhibit innovation within small, Black-owned architectural and landscape architectural firms in South Africa. It evaluates how these constraints affect the adoption of Open Innovation practices and proposes strategies for inclusive professional growth and transformation.

1.8.2. Research Objectives

The primary aim of this study is to explore the barriers to innovation among small, Black-owned architectural and landscape architectural firms in South Africa and to assess how these constraints affect their ability to engage in open innovation practices.

The specific objectives are to:

1. Identify the systemic, financial, and institutional barriers that inhibit innovation within small, Black-owned design firms.
2. Examine the role of mentorship, networks, and collaboration in enabling or constraining open innovation.
3. Analyse how current policy and regulatory frameworks influence innovation capacity within these firms.
4. Propose strategies to enhance open innovation pathways in the South African built environment sector.

1.8.3. Key research questions

Against the backdrop of an evolving South African built environment, small Black-owned architectural and landscape architecture firms face a complex landscape shaped by historical, structural, and contemporary factors (Vilakazi and Bosiu, 2021). Understanding the forces that affect innovation in these firms requires a comprehensive examination of the obstacles they face, the industry dynamics at play,

and the impact of existing policies and practices. This research is guided by critical questions designed to uncover the key barriers to innovation, examine the effects of industry norms and policy frameworks, and identify actionable strategies for advancing inclusive and sustainable innovation. The study aims to generate insights that inform transformative change within the sector by examining the internal and external factors influencing these enterprises and exploring the potential for open innovation, stakeholder engagement, and collective action. The following research questions frame this investigation:

1. What systemic, financial, and institutional barriers to innovation are experienced by small, Black-owned architectural and landscape architectural firms in South Africa?
2. How do mentorship, professional networks, and collaborative practices influence the ability of these firms to engage in open innovation?
3. How do current policy, procurement, and regulatory frameworks affect the innovation capacity and growth of small, Black-owned design firms?
4. What open innovation strategies, including collective action and distributed innovation approaches, can be leveraged to overcome these barriers and promote inclusive transformation in the South African built environment?

1.9. Research Methodology

This study employs a qualitative, phenomenological research design grounded in a social constructionist paradigm to investigate the systemic and internal barriers to innovation within the South African architectural and landscape architectural sectors. Utilising purposive sampling, the researcher conducted semi-structured, digital interviews with ten (10) information-rich Black practitioners comprising a diverse 60/40 female-to-male split across micro-practices, private firms, and public-sector departments to capture the "lived realities" of navigating a historically exclusionary built environment. Data collection was driven by an interview guide focused on the "triple constraint" of financial, systemic, and institutional barriers, reaching thematic saturation by the eighth interview. The resulting transcripts were analysed using a systematic thematic matrix, which identified seven core themes, including client bias, regulatory friction, and restricted access to funding, triangulated against secondary policy documents to ensure methodological rigour. Ultimately, this approach bridges

the gap between micro-level professional trajectories and macro-level transformation imperatives, providing a credible, evidence-based evaluation of the structural constraints hindering Open Innovation for Black-owned firms.

1.10. Limitations of the research

While this study seeks to provide meaningful insights into the innovation barriers experienced by small Black-owned architectural and landscape architectural firms in South Africa, several limitations must be acknowledged.

Firstly, the study's scope is limited to small Black-owned firms that are accessible and willing to participate, which may not fully represent the experiences of all such firms nationwide. Firms that are not open to participation may have different challenges or perspectives.

Secondly, time and resource constraints influenced the depth of data collection. Due to the intensive nature of qualitative research and limited access to multiple firms across regions, the study primarily relies on a smaller sample size. Consequently, generalising findings to all small Black-owned architectural and landscape architectural firms should be approached with caution.

Additionally, the study focuses on firms' current and historical experiences and does not extensively consider future trends or emerging policies that may influence innovation pathways. Therefore, the findings may reflect the present context and may require updates as the industry evolves.

Lastly, access to secondary data on Black-owned architectural firms in South Africa is limited, thereby constraining the ability to conduct extensive comparative or longitudinal analyses.

Despite these limitations, the study provides valuable insights that can inform strategies to support innovation in small Black-owned architectural and landscape architecture firms, contributing to both academic understanding and practical applications.

1.11. Outline of Chapters

1.11.1. Chapter 1: Introduction

Chapter 1 provides the foundational context for the study. It covers the following key elements, starting with Background and Context, and provides an overview of innovation as a driver of competitiveness and growth in the South African built environment. The Research Problem Identifies the limited research on how open innovation applies to emerging Black-owned design firms in South Africa. The Research Aim and Objectives, which are the primary focus, are to explore innovation barriers and assess their impact on open innovation practices. The Rationale and Interest describe the professional interest and the study's alignment with national imperatives, such as the NDP 2030. The Limitations and Structure outline the study's constraints and provide a roadmap of the chapters.

1.11.2. Chapter 2: Literature Review

Chapter 2 examines existing theoretical and empirical work to situate the research within a global and local academic discourse. The theory of Open Innovation (OI) critically explores the shift from closed to open innovation and its relevance to SMEs, followed by the Contextualising South African Practice, which discusses the need for transformation, the legacy of apartheid-era inequities, and racialised structural barriers. Innovation Barriers then synthesises literature on the specific financial, institutional, and market-access challenges faced by architectural and landscape architectural firms.

1.11.3. Chapter 3: Research Methodology

Chapter 3 describes the qualitative research design and the methods used to ensure the study's rigour. The Research Philosophy is grounded in an interpretivist paradigm and a social constructionist approach, aiming to capture subjective, lived experiences. The Research Design Details a qualitative inquiry using purposive and snowball sampling. Data collection involves semi-structured, in-depth interviews with 10 participants from diverse professional backgrounds, followed by thematic analysis using Braun and Clarke's framework.

1.11.4. Chapter 4: Data Presentation, Analysis, and Discussion

Chapter 4 presents and interprets the empirical findings by linking them to the theoretical frameworks discussed in Chapter 2. Demographics provides a profile of the participants, including organisation size and ownership status. At the same time, Emergent Themes presents the core results across seven key themes, including Access to Funding, Client Bias, Regulatory Barriers, and Open Innovation Awareness. The Structural Open Innovation Model: Introduces an original conceptualisation of the "Vicious Cycle of Exclusion" affecting Black-owned SMEs.

1.11.5. Chapter 5: Conclusion and Recommendations

The final chapter summarises the key insights and addresses the research objectives through the Synthesis of Findings, which concludes that systemic, financial, and institutional barriers create an "Execution Blockade" for innovation. Recommendations propose multi-scalar interventions, such as mandated ethical standards, structured mentorship, and updated sustainable design legislation. The Overall Conclusion is the Final reflections on the potential for Black-owned firms to pioneer open innovation if structural cycles are dismantled.

1.12. Conclusion

Chapter One of this study lays the groundwork by defining the problem statement, research objectives, research questions, research aim, and the study's significance. It provides a clear context for understanding how systemic, financial, and institutional barriers shape the innovation capacity of small, Black-owned architectural and landscape architectural firms in South Africa. Key challenges identified include limited access to funding, structural client bias, and regulatory friction, which collectively constrain these firms' ability to pursue innovative practices effectively.

By applying the theoretical lens of Open Innovation, the study moves beyond a general exploration of SME challenges to highlight a context-specific "Vicious Cycle of Exclusion." Within this cycle, firms experience "Strategic Paralysis," wherein practitioners, despite possessing a sophisticated understanding of innovative approaches, are forced to navigate a persistent "survival-innovation trade-off" due to chronic cash flow instability and exclusion from dominant market networks. This

framework underscores the complex interplay between structural inequities and the operational realities that limit innovation in small Black-owned firms.

The chapters that follow build on this foundation. Chapter 2 critically reviews Open Innovation literature and examines the socio-historical inequities of South Africa's built environment. Chapter 3 details the interpretivist methodology employed to capture the lived experiences of these professionals, while Chapter 4 presents empirical evidence of the identified barriers. Chapter 5 proposes multiscale strategies, including tiered professional fees and mandated sustainable design standards, designed to disrupt these structural cycles and promote more inclusive innovation.

Ultimately, this research contributes to the understanding of how inclusive innovation ecosystems can be cultivated to support both the competitiveness of individual firms and the broader transformation goals of South Africa's architectural and landscape architecture sectors. By elucidating the systemic and structural barriers faced by Black-owned firms, the study provides a foundation for policy interventions and professional strategies that advance equitable participation and sustainable growth in the built environment.

2. CHAPTER 2
LITERATURE REVIEW

2.1. Introduction

Innovation has become a central driver of competitiveness, sustainability, and growth across global industries, including the built environment. However, the pathways through which firms adopt and leverage innovation are highly context-dependent, shaped by resource availability, market structures, and socio-economic dynamics (Chesbrough, 2003). Within this discourse, Open Innovation (OI) has emerged as a key paradigm, emphasising the purposeful exchange of knowledge and collaboration across organisational boundaries to accelerate innovation and expand market opportunities (Vrande et al., 2009). While OI frameworks have been extensively applied in large, research-intensive firms, there is growing recognition that small and medium-sized enterprises (SMEs), particularly in design-intensive sectors such as architecture and landscape architecture, face unique opportunities and constraints in adopting OI strategies (Radziwon & Vanhaverbeke, 2022).

In South Africa, historical inequities, market concentration, and structural barriers create a complex environment for small, Black-owned and landscape architectural practices (Vilakazi & Bosiu, 2021). Despite ongoing transformation initiatives, these firms face limited access to finance, procurement opportunities, and innovation networks, compounding operational and managerial challenges (CBE, 2024). Moreover, the dual demands of surviving within a highly competitive construction market and adapting to rapid technological change require firms to develop new capabilities while navigating entrenched barriers to entry.

This literature review critically examines the global and local discourse on innovation barriers in architectural and landscape architectural practices, with a specific focus on the South African context. It explores theoretical frameworks of open innovation, identifies internal and external constraints affecting small design-based SMEs, and highlights sector-specific factors that shape innovation potential. This review establishes a foundation for understanding the systemic and organisational challenges faced by Black-owned firms by synthesising international studies with South Africa's unique socio-economic and policy landscape. It positions the current research within a critical gap in the literature.

This chapter is structured to move from broad theoretical abstractions to the specific, localised realities of the South African built environment. The review begins by establishing a Theoretical Framework grounded in Institutional Theory and Open Innovation, providing the macro-lenses through which organisational behaviour and knowledge flows are interpreted. The discussion then transitions into a Critical Synthesis of current literature, organised into three analytical pillars: Institutional Gatekeeping through regulatory and professional hurdles, Resource Scarcity through financial and capacity constraints, and Network Exclusion through socio-economic barriers to collaboration.

Rather than merely describing these factors, the review evaluates the Policy-Practice Gap, the tension between South Africa's transformative intent, such as B-BBEE and CIDB frameworks and the empirical survivalist realities of Black-owned micro-practices.

2.1.1. Theoretical Framework

This study utilises Institutional Theory (Scott, 2014) to decode the external 'rules of the game' and Open Innovation (Chesbrough, 2017) to evaluate internal knowledge flows. While these theories provide the macro-lenses, they lack the granularity to explain the racialised professional landscapes of South Africa. Therefore, they serve as the foundational frame for the context-specific Conceptual Framework developed.

2.1.2. Institutional Theory

Institutional Theory posits that organisational behaviour is not merely a result of rational economic choices but is significantly shaped by the formal and informal 'rules of the game' that govern a sector (DiMaggio & Powell, 1983; Scott, 2014). In emerging economies, these institutional frameworks often contain 'voids', gaps in specialised intermediaries and regulatory support that disproportionately constrain the innovation pathways of smaller, marginalised firms (Khanna & Palepu, 2010).

Institutional Theory is employed here not merely to describe organisations, but to critically interrogate why rational economic actors (Black-owned firms) are prevented from making rational innovation choices due to external 'normative pressures' and 'historical path-dependency.

2.1.3. Open Innovation Theory

Open Innovation refers to the purposive use of inflows and outflows of knowledge to accelerate internal innovation (Chesbrough, 2006). While traditional OI assumes a fluid exchange of ideas, this study applies the theory to a constrained environment. It focuses on Absorptive Capacity, the firm's ability to recognise, assimilate, and apply external information. In this research, OI is used to evaluate whether Black-owned micro-firms can access the collaborative networks necessary for such knowledge exchange.

2.2. Open Innovation Theory and Its Relevance to SMEs

2.2.1. Introduction: From Closed to Open Innovation

Innovation has long been conceptualised through a "closed" model, where successful outcomes depended on firms generating (Chesbrough, 2003), developing, and commercialising ideas internally while tightly controlling intellectual property (Vrande et al., 2009). In this paradigm, competitive advantage was secured by relying on in-house expertise and protecting the knowledge generated. However, shifts in the global economic and technological landscape, such as increased knowledge mobility, growing venture capital markets, and the rising costs of internal research and development (R&D), have challenged the sustainability of this model (Chesbrough, 2003). In response to these pressures, the concept of Open Innovation (OI) has emerged as a new paradigm. Coined by Chesbrough (2003), OI is defined as "the use of purposive inflows and outflows of knowledge to accelerate internal innovation and expand the markets for external use of innovation" (Vrande et al., 2009). Unlike the closed model, OI encourages firms to leverage internal and external knowledge when developing new products, services, and processes. Firms effectively transform their organisational boundaries into "semi-permeable membranes" that allow knowledge to flow more freely between the organisation and its external environment (Radziwon & Vanhaverbeke, 2022).

2.2.2. Core Processes of Open Innovation

Gassmann and Enkel (2004) identify three core processes of open innovation that describe how firms manage knowledge flows across organisational boundaries. The first is the outside-in, or inbound, process, in which firms enhance their internal knowledge base by sourcing external expertise from customers, suppliers,

universities, research centres, and industry partners. This process is particularly critical for resource-constrained small and medium-sized enterprises (SMEs) as it helps overcome internal limitations and facilitates access to complementary knowledge and technologies. The second is the inside-out or outbound process, which focuses on exploiting internally developed ideas externally by licensing intellectual property, forming spin-offs, or collaborating with partners to commercialise innovations that do not fit within the firm's current business model. Ultimately, the coupled process integrates inbound and outbound strategies through collaborative partnerships, where knowledge is co-created and shared among partners (Gassmann & Enkel, 2004). This approach is especially relevant to design-intensive sectors, such as architecture and landscape architecture, where multidisciplinary collaboration is often essential for delivering complex, innovation-driven projects (Van den Brink et al. 2022). Among these processes, the inbound approach is the most prevalent among SMEs, as it enables smaller firms to strengthen their innovation capabilities by integrating external knowledge to complement limited internal resources (Radziwon & Vanhaverbeke, 2022).

2.3. Open Innovation in the Context of SMEs

The application and management of open innovation in SMEs differ substantially from those of large corporations (van de Vrande et al. 2009). While large firms often have dedicated R&D functions and extensive resources to support innovation, SMEs typically face the "liability of smallness," which manifests as limited financial and human resources, restricted access to formal innovation networks, and constrained internal capabilities (Aghimien et al. 2018). Despite these challenges, SMEs possess inherent advantages such as flexibility, agility, and adaptability, making them well-suited to adopt open innovation practices that leverage external expertise to overcome internal gaps (Radziwon & Vanhaverbeke, 2022). For small Black-owned architectural and landscape architectural SMEs in South Africa, these dynamics are further shaped by systemic barriers rooted in the country's socio-political history (Vilakazi & Bosiu, 2021). Historical exclusion, limited access to finance, and persistent underrepresentation in high-value procurement pipelines mean that these firms must innovate within an environment characterised by structural inequality and restricted opportunities (Mafundu & Mafini, 2019). In this context, open innovation becomes a strategic tool for bridging capability gaps, fostering competitiveness, and enhancing

resilience within an increasingly complex built environment sector (Radziwon & Vanhaverbeke, 2024).

2.3.1. Key Practices and Partners

For SMEs, successful open innovation implementation often depends on forging collaborative relationships with diverse partners (Radziwon & Vanhaverbeke, 2024). Customers and suppliers play a central role in enabling firms to co-create solutions and improve service offerings through continuous feedback and integrated supply chain practices (van de Vrande et al. 2009). Universities and research institutions provide access to novel knowledge, emerging technologies, and advanced design methodologies that may otherwise be beyond a firm's reach (Nduro and Duodu, 2025). Industry peers and competitors also serve as critical collaborators in what has been described as "coopetition," in which firms combine resources and share complementary capabilities to achieve innovation outcomes that would be difficult to achieve independently (Bigliardi et al. 2021). In South Africa, where many Black-owned SMEs remain excluded from dominant procurement networks and innovation ecosystems, these collaborative partnerships are crucial for accessing the knowledge, resources, and opportunities essential for survival and growth (Bolosha et al. 2023).

2.3.2. Motivations for Adopting Open Innovation

Research indicates that SMEs primarily adopt open innovation to respond to market-driven pressures. A study by van de Vrande et al. (2009) highlights that the key drivers include responding to evolving customer demands, keeping pace with competitors, and entering new markets to ensure sustainable revenue growth. However, the motivations of South African Black-owned architectural and landscape architectural SMEs extend beyond competitiveness. In an environment marked by resource scarcity, structural exclusion, and market concentration, open innovation represents a strategic pathway to enhance resilience, diversify services, and remain viable in an increasingly competitive built environment sector (Vilakazi & Bosiu, 2021).

Current scholarship on Open Innovation (OI) is dominated by the assumption of Fluidity, the idea that knowledge flows freely across firm boundaries to accelerate internal innovation (Chesbrough, 2017). However, a critical synthesis of the literature reveals a significant "Contextual Gap" when applying these models to Black-owned SMEs in emerging economies.

The Assumption of "Network Symmetry": While Radziwon and Vanhaverbeke (2024) argue that SMEs can compete by out-collaborating larger firms, this assumes a neutral marketplace. In contrast, Mafundu and Mafini (2019) highlight that in South Africa, collaborative networks are often racially homogenous, creating a barrier to the external knowledge sourcing essential for OI. This suggests that for Black-owned firms, the Openness in Open Innovation is not a strategic choice but a structural privilege they are often denied.

Nduro and Duodu (2020) posit that a firm's ability to innovate depends on its Absorptive Capacity, the internal skill set required to recognise and use external information. However, when viewed through the Institutional Theory lens, it becomes clear that Capacity is not merely an internal failure. As Bolosha et al. (2023) contend, the "Triple Constraint" of financial precarity, high registration fees, and unstable pipelines drains the organisational slack necessary to maintain this capacity.

2.4. Contextualising Architectural and Landscape Architectural Practices in South Africa

2.4.1. The Built Environment in the African Context

The African built environment is characterised by a significant missing middle where large multinational firms and small informal practitioners thrive, but mid-sized, indigenous, innovation-led firms struggle to scale. Research by the African Development Bank (2023) highlights that systemic exclusion from high-value infrastructure projects is a recurring theme for Black-owned firms across the SADC region. Therefore, the 'Vicious Cycle of Exclusion' identified in this study is not merely a local phenomenon but a structural characteristic of professional services in emerging African economies

2.4.2. Need For Transformation in the South African Construction Built Environment Industry.

The South African construction industry is vital to the national economy, contributing significantly to gross domestic product (GDP), employment, and broader socio-economic development. The construction industry contributes slightly over 2% to the national GDP. The sector employs approximately 1,359,074 people, making it the country's fifth-largest employer (Infrastructure South Africa, 2025). The industry offers

work opportunities across a broad spectrum of skills, utilising both skilled and semi-skilled individuals (CBE, 2022). It plays a vital role in job creation and economic inclusion, as it is recognised as a key driver of infrastructure development that underpins economic activity and improves living standards (Infrastructure South Africa, 2025).

Beyond the construction industries economic contributions, the industry has a socio-political significance as it provides a platform for implementing government development priorities, such as expanding infrastructure, addressing housing backlogs, and enabling black economic empowerment (BEE) initiatives aimed at redressing past inequalities by facilitating skills transfer and empowering emerging contractors as the sector supports transformation and inclusive participation in the economy (CBE, 2024). Furthermore, construction activity has a substantial developmental impact, shaping the built environment and influencing productivity, environmental sustainability, and quality of life (Seaden & Manseau, 2001).

The South African construction industry plays a vital role in driving economic development, creating employment opportunities, and delivering essential infrastructure (Wentzel et al. 2016). However, numerous systemic challenges rooted in historical legacy, persistent inequality, fragmentation, and weak transformation efforts underscore a growing consensus on the critical need for structural reform within the sector (Nduro & Duodu, 2024). Racialised structural barriers in South Africa have profoundly and persistently impacted inclusive economic participation, professional advancement, business development, and societal transformation (CBE, 2024). These barriers of historically disadvantaged individuals (HDIs) which is defined by predominantly Black South Africans, including Africans, Coloureds, and Indians, who were systematically discriminated against under apartheid are deeply rooted in the legacy of apartheid, where socio-political and financial systems were deliberately designed to exclude black South Africans and other marginalised groups from accessing opportunities and resources (Vilakazi & Bosiu, 2021).

South Africa's socio-economic landscape remains affected by the legacy of apartheid, manifesting in persistent structural barriers that are distinctly racialised. One of the most critical effects of racialised structural barriers in South Africa has been economic inequality (Vilakazi & Bosiu, 2021). The distribution of economic ownership, access to

markets, and participation in productive sectors continues to reflect patterns established during apartheid, resulting in significant disparities between racial groups (Vilakazi & Bosiu, 2021). Wealth, productive capital, and control over major economic sectors remain disproportionately concentrated in the hands of the white minority, which according to comprises 7.3% according to Statistics South Africa. At the same time, black-owned enterprises face formidable obstacles in accessing markets, credit, and productive assets (Vilakazi & Bosiu, 2021). This has resulted in persistently high barriers to entry for black businesses, particularly in capital-intensive and high-value manufacturing sectors, stifling competition, innovation, and inclusive economic growth (Vilakazi & Bosiu, 2021).

Due to the challenges posed by South Africa's socio-political history, transformation in the professions of architecture and landscape architecture has become a significant focus in the literature (Vosloo et al. 2017). Both the South African Council for the Architectural Profession (SACAP) and the South African Council for the Landscape Architectural Profession (SACLAP) pursue strategies to increase representation, encourage diversity, and support the professional growth of historically disadvantaged individuals (CBE, 2024). Initiatives led by SACAP and SACLAP emphasise accessible education, professional development, and candidate support to drive broader participation and transformation within the industry (CBE, 2024; SACLAP, 2018).

Many South African architectural firms, primarily small businesses, struggle with profitability, meeting financial obligations, and accumulating financial reserves. Vosloo, Vosloo, and Antonites (2017) reported that over half of the firms in their study experienced difficulty meeting financial obligations, and a similar proportion had not built up substantial reserves, thereby putting long-term organisational stability at risk (Vosloo et al. 2017). There is a notable lack of formal management structures and poor financial planning, as evidenced by the fact that almost half do not use budgets and have limited knowledge of operating costs (Vosloo et al. 2017).

The study "on enduring South African architects' firms investigated the actions, practices and orientations that helped them get there", by Vosloo et al. (2017), does not provide a breakdown of the racial demographics of the architectural firms or their owners in the research; however it does reference Black Economic Empowerment (BEE) legislation as a unique challenge specifically pointing to the shortage of

architects from historically disadvantaged backgrounds and the impact this has on access to government work. This provides insight into the fact that historically disadvantaged, individually owned firms do not solely face the financial difficulties that small architectural businesses do. This study primarily focuses on Black-owned architectural firms, acknowledging their unique historical and socio-economic challenges. However, the insights generated also apply to White-owned firms, as many challenges, such as financial constraints, market competition, and industry dynamics, are shared across ownership groups. Examining managerial and entrepreneurial characteristics within historically disadvantaged firms offers a valuable understanding that can inform strategies to enhance innovation and resilience in architectural practices, irrespective of racial ownership.

Furthermore, challenges experienced are related to the built environment sectors' susceptibility to national economic pressures, political instability, and declining public-sector infrastructure investment (Aghimien et al. 2018). Firms are thus exposed to limitations in available work, which heightens competition and further challenges sustainability (Mokoena, 2025). There is consensus on the necessity for greater entrepreneurial orientation and for integrating relevant business and innovation training into education and ongoing professional development (Mokoena, 2025). This is further evident in landscape architectural firms and their statutory body, SACLAP, which faces persistent financial constraints (SACLAP, 2018). These constraints inhibit organisational growth, limit operational expansion funding, and prevent the implementation of strategic development projects. There are ongoing efforts to grow the profession; however, capacity in the SACLAPs registrar's office and limited voluntary participation challenge the rollout of accreditation and transformation initiatives (SACLAP, 2018). The CBE (2024) also reported that both architectural and landscape architectural fields continue to struggle to achieve representative demographics, and substantial progress is needed to redress historical imbalances in race and gender and to improve access for young professionals.

Vilakazi and Bosiu (2021) emphasise that structural transformation in South Africa's economy centres on racial inclusion and reducing barriers to entry, particularly for black-owned firms. Despite the Broad-Based Black Economic Empowerment (BBBEE) policy, which was initiated in 2003, significant challenges persist, including high market concentration and limited access to finance for black entrepreneurs

(Vilakazi & Bosiu, 2021). BBBEE is a legislative and policy framework in South Africa designed to advance economic participation and inclusion of historically disadvantaged groups, particularly black South Africans, in the post-apartheid economy (Vilakazi & Bosiu, 2021). The South African government defines BBBEE in the Broad-Based Black Economic Empowerment Act 53 of 2003 as "an integrated and coherent socio-economic process that directly contributes to the economic transformation of South Africa and brings about significant increases in the number of black people who manage, own and control the country's economy, as well as significant decreases in income inequalities" (Vilakazi & Bosiu, 2021).

The sectors analysed in the study by Vilakazi and Bosiu (2021) include manufacturing, agroprocessing, metals, retail and grocery chains, mining, pharmaceuticals, plastics, chemicals, clean energy, and textiles. The construction industry is not specifically mentioned as a barrier to entry. Based on the structural transformation and barriers-to-entry framework outlined in Vilakazi and Bosiu's study, we can deduce that the construction industry in South Africa is likely to face many of the same systemic challenges identified in other sectors, such as High Barriers to Entry and Market Concentration. Many South African sectors remain highly concentrated, with leading white-owned firms maintaining market dominance through historical advantages, protected networks, and access to resources. Vilakazi and Bosiu emphasise that the lack of patient, large-scale capital is one of the most significant constraints on black-owned businesses, alongside limited access to finance and exclusion from value chains and networks. The literature notes that breaking into established value chains is especially difficult in concentrated industries, where incumbents maintain tight control and long-standing relationships with suppliers and clients. According to the literature, BBBEE has often resulted in ownership changes without operational empowerment, creating black "front" partners rather than fostering competent challenger firms.

The Black Industrialists Scheme (BIS), launched in 2016, aims to address these issues by providing targeted funding and support for black industrialists in the manufacturing sector (Vilakazi & Bosiu, 2021). However, systemic barriers to market access remain, necessitating a more integrated policy approach to achieve inclusive economic transformation. Barriers to entry in these sectors are considerable and disproportionately affect black-owned businesses, limiting their ability to contest

markets, acquire productive assets, and achieve meaningful economic inclusion (Vilakazi & Bosiu, 2021). This financial structure limits competition, entrenches racialised wealth disparities, and impedes dynamic gains in productivity and innovation (Vilakazi & Bosiu, 2021).

Despite various post-apartheid policy interventions, like the industrial industries in Vilakazi and Bosiu's study, the construction industry remains untransformed along racial and gender lines. In the built environment, professionals experience racialised barriers which manifest in professional associations, registration processes, and access to mentorship, leading to under-representation of black professionals and women (CBE, 2024). White males continue to dominate professional membership, with black, coloured, and Indian practitioners remaining a minority (CBE, 2024). The data from recent years reveal that black ownership and participation, especially among large contractors and built environment professionals, are far below national demographic targets, and women's representation is disproportionately low (CBE, 2024). Mafundu and Mafini (2019) discuss that structural barriers such as limited access to finance, unequal procurement opportunities, and a lack of adequate mentorship have severely limited historically marginalised groups' full participation and stunted sustainable black-owned enterprises' development, inadequate progress is evident in the slow shift of contractors from entry-level to higher Construction Industry Development Board (CIDB) grades, and black-owned firms are particularly underrepresented among large contractors and professional service companies, with recent analyses indicating that Black ownership in large enterprises in the construction and built environment sector averages approximately 13%, with a noted decline compared to previous years despite ongoing transformation initiatives (CIDB, 2020). The Broad-Based Black Economic Empowerment (B-BBEE) Commission reports further reveal that, across multiple sectors, including construction, Black ownership typically ranges between 30% and 34%, with Black women's ownership constituting approximately 14% (B-BBEE Commission, 2022). Moreover, fully Black-owned large firms are exceptionally rare, with no such representation reported among Johannesburg Stock Exchange (JSE)-listed entities as of 2021(Vilakazi & Bosiu, 2021). These statistics illustrate the ongoing structural and systemic challenges that hinder broader Black participation and ownership in large consulting firms within the built environment industry.

2.4.3. Role of architects and landscape architects

Architects and landscape architects play an essential role within the built environment and the construction industry (van den Brink, van den Brink & Bruns, 2022). The authors Lai, Yusof and Kamal (2016) and Mokoena (2025) highlight how architecture and landscape architecture firms have assumed increasingly multifaceted roles in a rapidly changing global environment characterised by economic, technological, and social transformation. Architecture firms were traditionally perceived as providers of design services focused on physical spaces (Aghimien & Fadiyimu et al. 2018). This perception of the role of architects has evolved in recent decades to encompass leadership in innovation, entrepreneurship, urban development, and sustainability, reflecting global trends and local adaptation (Radziwon & Vanhaverbeke, 2024).

Globally, architectural and landscape architectural firms are not just adopters but also creators of innovation (Lai, Yusof & Kamal 2016). They are recognised as knowledge-intensive organisations and are considered drivers of innovation within the construction and built environment industry (Sivunen et al., 2011). Their expertise enables them to pioneer new design concepts, develop original products and building processes, and respond proactively to emerging technological and environmental challenges (Vosloo, 2017). Architectural firms are design-based and knowledge-intensive enterprises that play a pivotal role in introducing innovation into the construction process. However, despite their acknowledged role as innovation drivers, they have been largely overlooked in empirical studies of innovation orientation. (Sakar et al., 2023).

The study by Lai et al. (2016) investigates innovation orientations among architectural firms in Malaysia, emphasising the distinction between innovation creation and adoption. These orientations are significantly different, with architectural firms primarily oriented towards innovation creation rather than adoption. The research highlights that innovation creation involves high innovation and market pioneering, while adoption focuses on refining existing products. The findings underscore the need for tailored strategies to enhance innovation in architectural firms, which are crucial drivers of industry innovation. Innovation within these firms involves creating new products and market approaches, as well as adopting best practices (Lai et al., 2016).

The role of architects is significant, as Heur (2010) outlines how architecture firms influence global urban and regional development policies by designing higher education and research environments. These firms shape interactions between academics, businesses, and communities, fostering local and regional innovation ecosystems. Their contributions significantly impact urban form and functionality, playing a strategic role in city branding, economic clustering, and facilitating knowledge exchange across borders (Heur, 2010).

Similar to what is happening globally, architectural and landscape architectural firms play a crucial role in shaping the built environment, driving innovation, and contributing to socio-economic development in South Africa (Lukhele & Soumonni, 2021). Their responsibilities encompass project design, management, regulatory compliance, and the transformation of spatial and social landscapes (van den Brink, van den Brink & Bruns 2022).

While much of the literature on architectural practice focuses on design excellence and technical skills, less attention has been paid to the entrepreneurial and managerial factors that contribute to firm longevity in the South African context (Vosloo, 2017). Vosloo and Antonites (2017) address this gap through an in-depth qualitative study of 26 enduring South African architectural firms. Their study hypothesises that architectural firms are integral to the design and delivery of buildings and infrastructure, often serving as creative leaders and problem-solvers on complex projects in South Africa. These firms are predominantly small businesses, characterised by personalised management and strong links to local communities, and they provide tailored solutions that balance functionality, aesthetics, and sustainability. Besides their creative focus, these firms must navigate financial management, operations, and business strategy in a challenging economic climate, necessitating an entrepreneurial mindset and continuous organisational learning (Vosloo et al.).

Therefore, increasingly, architecture firms are embracing entrepreneurial mindsets, expanding their practices beyond traditional building design into related domains such as digital tools, product development, interior and furniture design, real estate, and education (Yilmaz, 2023). This research is particularly relevant as it connects the longevity of architectural practice to entrepreneurial competencies and adaptive strategies in a changing economic environment, rather than solely to design capability.

It underscores the need for integrating business management skills into architectural education and practice, a theme echoed in other studies on the sustainability of professional services.

Mokoena affirms this by highlighting the pressing economic challenges facing the South African architectural profession, with average profit margins dropping to around 10% and many firms operating at a loss in the post-COVID-19 context (Mokoena, 2025). Mokoena argues that these pressures necessitate a paradigm shift towards an entrepreneurial practice model, supported by structured entrepreneurship education within architectural curricula. Drawing on a qualitative literature review and twelve global and local case studies, including Gehry Technologies, MIMA House, and Al Stratford, the study demonstrates how entrepreneurial architects diversify income streams, expand into product development and social enterprise, and leverage Fourth Industrial Revolution (4IR) technologies without compromising design quality. The research proposes a four-phase framework for entrepreneurship education, which involves building early awareness, motivating engagement, advancing entrepreneurial skills, and establishing long-term support systems, such as mentorship and incubators. This perspective directly informs discussions on how architectural education and professional bodies can adapt to ensure resilience, innovation, and broader socio-economic impact in the built environment sector.

Globally, the landscape architecture sector is increasingly strategy-driven, with innovation commonly targeted at aggressive growth, international competitiveness, and sustainability goals (Sakar et al., 2023). In South Africa, through project planning and landscape design, these firms play a crucial role in advancing environmental sustainability, heritage preservation, and the integration of green infrastructure across urban and rural settings (SACLAP, 2018).

Globally and locally, the role of architectural firms is transforming as they respond to technological change, urbanisation, and evolving client demands (Vosloo et al., 2017). In South Africa, there is growing recognition of the need for architects and landscape architects to adopt entrepreneurial and innovative approaches to survive financially and to expand the value they deliver to society (Mokoena, 2025). This includes diversifying service offerings, embracing digital tools, and developing new business

models that extend beyond traditional design, encompassing product development, mentorship, and property development (Mokoena, 2025).

In emerging markets, landscape architecture firms are encouraged to prioritise innovation outputs such as successfully exported services and products over simple input measures like staffing or intellectual property (Sakar et al., 2023). Adding to the evolving landscape architecture sector,

Van den Brink, Van den Brink, and Bruns (2022) emphasise the importance of boundary thinking and role flexibility in landscape architecture. Firms and practitioners serve as connectors across disciplines, sectors, and cultures, navigating physical, mental, and socially constructed boundaries. Through such boundary-spanning activities, landscape architects contribute to addressing global challenges, including climate adaptation, urban resilience, and biodiversity, while fostering cross-disciplinary and stakeholder collaboration at various scales. Multiple professional roles emerge in this context, from subject-based designers to design-led entrepreneurs, each requiring distinctive cognitive and social capacities, including creative leadership, communication, and negotiation skills (Van De Brink, Van Den Brink and Bruns, 2022).

While much research on innovation barriers in landscape design and planning firms focuses on tangible limitations such as funding, regulatory hurdles, and client conservatism, recent literature has emphasised the role of conceptual and institutional boundaries as significant inhibitors to collaborative innovation (van den Brink et al., 2022). These physical, mental, or socially constructed boundaries can restrict cross-disciplinary collaboration, limit the integration of diverse knowledge systems, and ultimately constrain the development of transformative design solutions.

Van den Brink et al. (2022) conceptualise boundary thinking as the capacity to recognise, question, and creatively span the physical, mental, and socially constructed boundaries that shape landscape practice. Their work suggests that when landscape architecture firms fail to develop adequate boundary-spanning capacities, including cognitive flexibility, reframing skills, and social-political awareness, they risk reinforcing sectoral silos. This can stifle collaborative problem-solving and hinder the adoption of novel planning or design strategies, thereby functioning as an implicit barrier to innovation.

Contemporary landscape architects are recognised for their capacity to act as "boundary spanners," facilitating cross-disciplinary and cross-sectoral collaboration to foster integrative and inclusive landscape solutions (Brink et al., 2022). They assume dynamic roles such as subject-based designer, visionary narrator, process-based designer, and design-led entrepreneur, each demanding technical expertise, advanced strategic thinking, stakeholder engagement, and leadership skills (Brink et al., 2022). Similarly, architects are increasingly engaging beyond the confines of design, extending into domains such as business management, entrepreneurship, sustainability practices, and advanced digital technologies (Mokoena, 2025). Leading firms and practitioners are diversifying their services, embracing project management, mentoring, real estate development, and innovation, in response to shifting economic and industry requirements (Mokoena, 2025).

Building on this shift towards expanded roles and responsibilities, Barrett (2021) highlights the critical influence of entrepreneurial leadership in overcoming innovation barriers. Barrett (2021) identified that a crucial factor in overcoming innovation barriers is the influence of the entrepreneurial founder or CEO. Barrett et al. (2021) demonstrate that managerial characteristics, specifically the founder's functional background, career experiences, prior industry knowledge, legacy network linkages, and entrepreneurial orientation, significantly shape the adoption, effectiveness, and outcome of innovation practices in SMEs. In South African Black-owned and landscape architectural firms, where managerial resources, contextual experience, and network access may be limited, understanding how founder characteristics act as either barriers or enablers to innovation is essential. As highlighted by Barrett et al., "the founder's knowledge and experiences are a significant asset in capturing and appropriating value from external partners, thus enabling the integration and synthesis of complementary knowledge.

2.4.4. Financial and Market Constraints on Innovation in Architectural and Landscape Architectural Practice

Innovation is recognised as essential for the growth and competitiveness of firms and industries. However, many barriers can hinder innovation processes, particularly within the architecture, landscape architecture, and construction sectors. The Centre for Science, Technology and Innovation Indicators (2024) reports that the primary barrier to innovation is the high cost of research and development, technology

adoption, and process improvements. In South Africa, 36% of innovative businesses cited high innovation costs as a significant barrier, along with limited access to external finance, such as credit, equity, and government grants. These financial constraints are especially pressing for small and medium enterprises, which often lack internal reserves to fund innovative activities (Centre for Science, Technology and Innovation Indicators, 2024).

Market-related barriers are substantial, with many businesses indicating that a saturated market, high levels of competition, and dominance by established enterprises limit the incentive and ability to innovate (Centre for Science, Technology and Innovation Indicators, 2024). Limited access to international markets and uncertain domestic demand further discourage investment in novel products or services.

2.4.5. South African Built Environment Systemic and Operational Constraints

Wentzel, Smallwood and Emuze's (2016) South African study on Improving the Business Trajectory Among Small and Medium-sized Construction Firms provides critical insights into the systemic and operational constraints that hinder the success of emerging built environment enterprises, many of which are owned by historically disadvantaged individuals. Although their research focuses on construction SMEs, the barriers identified, such as inadequate management and marketing competencies, insufficient strategic planning, limited access to finance, and poor project acquisition capacity, parallel the challenges faced by small Black-owned architectural and landscape architectural practices seeking to innovate. Their findings show that high early failure rates with approximately 70% of construction SMEs collapsing within the first year are less a result of technical design or construction quality than of deficits in business acumen, market positioning, and organisational growth strategies, combined with an unsupportive regulatory and contracting environment. These constraints can equally suppress creative experimentation, reduce opportunities for adopting new technologies, and disincentivise innovative service offerings in design firms. By framing these business capability gaps as core barriers to sustainable enterprise development, the study offers a valuable comparative lens for examining innovation barriers in small, Black-owned architectural and landscape architectural practices operating in similarly competitive, resource-constrained markets. These internal

constraints are particularly acute in black-owned SMEs, which are further compounded by external factors such as volatile public infrastructure spending cycles, inefficient procurement processes, bureaucratic barriers, and slow government payments (Infrastructure Dialogue, 2017).

Although limited research has examined innovation barriers in small black-owned firms within the South African architectural and landscape architectural sectors, related studies in aligned built-environment industries provide valuable insights (Bolosha et al., 2022). For example, Mafundu and Mafini (2019) conducted a qualitative investigation into the internal constraints affecting the business performance of black-owned SMEs in the South African construction industry. This field shares similar project-based, multidisciplinary, and client-driven characteristics with architecture and landscape architecture. Drawing on semi-structured interviews with 13 professionals from five SMEs, they identified five significant internal constraints: occupational health and safety non-compliance, shortages of skilled and experienced personnel, ineffective and often authoritarian leadership styles, poor workplace communication, and suboptimal resource allocation, which undermines firm efficiency and competitiveness. While these constraints were not specifically studied as innovation barriers, they represent critical operational bottlenecks that can indirectly suppress innovation by limiting firms' capacity to invest in new processes, adopt emerging technologies, or experiment with design solutions. This evidence aligns with broader built-environment literature, indicating that structural weaknesses in management, human capital, and resource planning often translate into constrained innovation potential in small, black-owned professional practices (Aigbavboa & Thwala, 2014).

2.4.6. Policy and Regulatory Frameworks

The innovation capacity of Black-owned architectural and landscape architectural firms is heavily mediated by a complex web of statutory and policy frameworks. While these frameworks are designed to foster transformation, they often inadvertently create institutional friction that disproportionately burdens smaller practices.

2.4.6.1. The Council for the Built Environment (CBE) and Professional Acts

The SACLAP (Act 45 of 2000) and SACAP (Act 44 of 2000) frameworks govern professional registration. However, the rigid 'Identification of Work' (IDoW) and lengthy candidacy periods often function as a form of Institutional Gatekeeping. For small

firms, the administrative burden of maintaining compliance and the difficulty of accessing registered mentors within a concentrated market create a 'bottleneck' that prevents them from attaining the professional standing required to bid for high-value, innovation-led projects (CBE, 2024).

2.4.6.2. The Preferential Procurement Policy Framework Act (PPPFA) and B-BBEE

While B-BBEE legislation is the primary vehicle for redress, its application in the built environment often prioritises 'ownership percentages' over 'substantive capacity building'. Research indicates that procurement scorecards frequently favour large, established firms that can absorb the costs of compliance, whereas micro-firms are trapped in lower CIDB (Construction Industry Development Board) grades. This grading ceiling restricts small Black-owned firms to maintenance or low-value subcontracting, which lacks the financial slack necessary for Open Innovation (Vilakazi & Bosiu, 2021).

2.4.6.3. The CIDB and Infrastructure Delivery Management System (IDMS)

The regulatory focus on the lowest-cost tendering within the CIDB framework creates a Financial Precarity environment. This race to the bottom on fees discourages the adoption of new technologies or sustainable design innovations, as firms must prioritise immediate liquidity over long-term R&D. Consequently, the regulatory environment reinforces a survivalist mode of operation, where innovation is viewed as a high-risk luxury rather than a competitive necessity (Bolosha et al., 2022).

2.4.6.4. The 2019 White Paper on Science, Technology, and Innovation

Despite the national shift toward 'Inclusive Innovation' as outlined in the 2019 White Paper, there remains a disconnect between high-level innovation policy and the ground-level regulations of the built environment. There are currently no specific fiscal incentives or 'Innovation Hubs' tailored to the design services sector, leaving Black-owned architectural firms to navigate systemic exclusion without the 'Institutional Scaffolding' found in other technology-driven sectors (Omopariola et al., 2024).

Current scholarship presents a tension between the transformative intent of Broad-Based Black Economic Empowerment (B-BBEE) and its empirical outcomes for micro-professional practices. While Vilakazi and Bosiu (2021) argue that B-BBEE remains the primary mechanism for market redress, a critical synthesis of the literature suggests a 'Compliance-Innovation Paradox.' Specifically, the administrative and financial burden of maintaining high-level B-BBEE and CIDB credentials functions as a 'Regulative Pillar' (Scott, 2014) that drains the very slack resources required for innovation (Bolosha et al., 2023).

Critically, this suggests that procurement frameworks in the South African built environment may inadvertently reward structural compliance over technical innovation. This supports the study's Conceptual Framework Dimension 3: Institutional Gatekeeping, as it identifies how formal policy creates informal barriers that lock Black-owned firms into low-value, survivalist contracts. Thus, the literature reveals a systemic gap: policies designed to empower firms often act as the friction that prevents them from engaging in the collaborative networks central to Open Innovation theory.

2.4.7. Global Discourse in the Construction Sector

Gambatese and Hallowell's (2011) work is widely cited in the global discourse on construction sector innovation for its comprehensive empirical analysis of the factors that enable and measure innovation at the project level. Drawing on case studies of award-winning and regular construction projects in the United States, they identified three essential components of innovation: idea generation, opportunity, and diffusion. They developed a framework of leading and lagging indicators to assess the success of innovation. Their findings highlight a set of high-impact enablers, including strong owner/client influence, an innovation champion, upper management support, formal lessons-learned processes, and dedicated research and development investment. While these conditions were found to drive innovation outcomes in well-resourced, often large-scale projects, their absence may also act as barriers, particularly in small and medium-sized enterprises that lack access to finance, networks, or client leverage. Most construction and design innovation literature focuses on enablers, measurement frameworks, and the role of organisational culture and leadership, often in large-scale construction projects and developed economies.

This reveals a contextual gap: Gambatese and Hallowell's (2011) study is situated in a developed economy with resource-rich projects, whereas South African black-owned SMME architectural and landscape architectural firms operate in an environment marked by structural inequities, market concentration, and historical exclusion from mainstream procurement pipelines. In such a setting, the enablers identified by Gambatese and Hallowell may be constrained or absent, necessitating a closer examination of how these systemic and operational limitations manifest as barriers to innovation. The present study engages with their conceptual framework. However, it shifts its analytical focus from measuring enablers to diagnosing the context-specific barriers that hinder innovation in these underrepresented firms, thereby extending the applicability of innovation research to the realities of the South African built environment sector. Notably, the present study seeks to explore the inverse: the barriers that prevent idea generation, opportunity realisation, and diffusion within the constrained environment of South African SMME black-owned architectural and landscape architectural practices.

International studies have increasingly recognised that firm size plays a pivotal role in shaping both the drivers and strategies of innovation in the built environment sector. Meng and Brown (2018) identified 13 standard innovation drivers, balancing internal and external factors, and classified strategies into four categories: technology, resource, marketing, and management. Their findings suggest that while all construction firms can innovate, smaller firms are more likely to be cost-driven and survival-oriented, often leveraging agility to respond to changing environments. In contrast, larger firms focus on long-term benefits and resource-intensive strategies, such as R&D investment (Meng & Brown, 2018). Although their work is situated in the UK construction context, this framework is instructive for the South African built environment, particularly for Black-owned architectural and landscape architectural SMMEs (Tregenna, 2008), where barriers to innovation may stem from limited resources, restricted access to knowledge networks, and an operating focus on short-term survival rather than long-term capability building (Vosloo, 2017). Adapting Meng and Brown's distinction between size-related drivers and strategies offers a valuable comparative lens for identifying context-specific barriers in South African professional design practices, especially given these firms' structural and socio-economic constraints.

2.5. Barriers to innovation faced by South African Black-owned SMMEs

Meng and Brown's (2018) innovation framework, which initially highlights key internal and external drivers and strategic approaches, can be effectively reframed to identify barriers to innovation faced by South African Black-owned SMMEs in the architectural and landscape design sectors. Internally, drivers such as health and safety improvements, pursuit of best practice, cost savings, sustainable construction, corporate image, competitive advantage, and productivity growth transform into barriers due to constrained operational capacities, limited resources, and cash flow challenges that restrict proactive leadership, investment in innovative technologies like Building Information Modelling (BIM), and strategic cost management (Mafundu & Mafini, 2019). Furthermore, low brand visibility and difficulties competing with larger firms limit opportunities to leverage competitive advantage, while skilled labour shortages and reliance on owner-driven operations hamper productivity (Ademeso, Izunnwanne & Windapo, 2011).

Externally, customer satisfaction, new business opportunities, market competition, shifting business environments, client demands, and technological advances similarly become obstacles (Meng & Brown, 2018). These issues arise from dependence on a narrow, risk-averse client base (Aghimien et al., 2018), unequal access to lucrative tenders shaped by procurement biases, intense competition from more established firms (Aigbavboa & Thwala, 2014), rapid regulatory changes, and high upfront costs associated with adopting new technologies, such as Computer-Aided Design (CAD) or Virtual Reality (VR). Strategically, barriers emerge along the categories identified by Meng and Brown: technology, resources, marketing, and management. South African SMMEs face capital constraints that limit technology adoption and in-house upskilling (Bolosha et al., 2023). Scarce financial resources hinder sustained R&D and specialist recruitment (CeSTII, 2024). A restricted marketing reach confines projects to local markets, and owner-centric management structures slow innovation by limiting exposure to formal practices and structured organisational learning (Mafundu & Mafini, 2019).

Additionally, size-specific barriers underscore the challenges unique to small firms, which, though agile, lack the resources and legal or regulatory capacity for transformative innovation and instead rely on short-term "survival innovation" (Bolosha

et al., 2023). In contrast, larger firms can invest strategically in R&D, whereas global competition capacity is primarily unavailable to these SMMEs (Radziwon & Vanhaverbeke, 2024). These constraints are further exacerbated by systemic inequities in financing, market access, and professional networks prevalent in South Africa, collectively impeding the innovation potential of Black-owned SMME design practices (Aigbavboa & Thwala, 2014).

The South African innovation landscape for small, medium and micro sized enterprises (SMMEs) is shaped by the National System of Innovation (NSI), which promotes two distinct but complementary modes of innovation: the Science, Technology and Innovation (STI) mode, driven by formal research and development (R&D), and the Doing, Using and Interacting (DUI) mode, based on experiential learning and collaborative problem solving (Lukhele and Soumonni, 2020). In their empirical study of science- and technology-based SMMEs in Gauteng, Lukhele and Soumonni (2020) found that most firms relied predominantly on DUI innovation, while only a few employed the STI mode, and a substantial number expressed confidence that their innovations could address social challenges. The authors attribute the underutilisation of STI to factors such as limited resources and uncertainty about the returns on R&D investments, which limit firms' willingness to commit to formal, research-intensive innovation pathways. This imbalance is particularly relevant for design-oriented sectors, such as architecture and landscape architecture, as these industries inherently combine tacit, client-driven problem-solving (DUI) with opportunities for STI-based advancements through sustainable building technologies, digital design methods, and material innovation. Black-owned firms in these sectors may face compounded barriers, including constrained financial capacity, limited access to innovation funding instruments, and historical exclusion from industry networks, which further inhibit STI uptake. As Lukhele and Soumonni's (2020) study does not disaggregate findings by ownership demographics or creative design industries, a gap remains in understanding how such barriers uniquely manifest in Black owned architectural and landscape architectural SMMEs, a gap this research addresses.

2.6. Innovation Barriers in Design-Oriented Sectors: Türkiye

Studies in other countries provide valuable comparative insight into the structural and strategic factors that shape innovation barriers in design-oriented sectors. For

example, Şakar, Çağlayan, and Yılmaz Özsoy (2023) investigated innovation strategies applicable to Türkiye's landscape architecture sector, focusing on how private-sector firms can sustain competitiveness amid rapidly evolving technologies.

The Analytic Hierarchy Process (AHP) enables researchers to translate subjective expert judgments into quantitative priorities by breaking a decision into a hierarchy of goals, criteria, and alternatives and using pairwise comparisons to assess their relative importance (Saaty, 1980). The authors Şakar et al. (2023) evaluated the relative importance of innovation inputs, such as research and development (R&D), design expenditures, and human resources, as well as outputs, including intellectual property rights and exports, in shaping innovation strategy. This method was particularly suitable for their research, as it enabled the prioritisation of abstract strategic concepts, such as 'aggressive' versus 'defensive' innovation, and the systematic evaluation of competing resource inputs, like R&D spending and human capital.

Key findings suggest that exports have a significant impact on innovation performance. The study concludes that firms should develop strategies driven by innovation outputs to enhance their competitiveness and adapt to evolving technologies. This original research contributes to understanding innovation dynamics within the landscape architecture sector. While AHP effectively prioritises a predefined set of factors based on expert opinion, the present study will employ a grounded theory approach with semi-structured interviews to discover and explore the unique barriers that South African SMMEs face, rather than ranking predetermined options.

Although the Turkish case differs contextually from South Africa's SMME Black-owned architecture and landscape architecture sectors due to differences in policy environment, market maturity, and transformation imperatives, the underlying dynamics are comparable. Both operate in design-intensive environments where resource allocation tensions, short-term market pressures, and insufficient collaboration infrastructures can hinder the effective adoption of open innovation practices. Using the findings of Şakar et al. (2023) as an international reference point, their barrier patterns can be mapped to established open innovation literature, as shown in Table 1.

Table 1: Barrier Patterns, Sakar et al. (2023)

Barrier Category *(Open Innovation Literature)*	**Description from Literature**	**Evidence from Şakar et al. (2023)**	**Implication for Open Innovation**
Organisational and Internal Capability Barriers (van de Vrande et al., 2009)	Limited absorptive capacity; shortage of internal skills & structures for external knowledge use	Human resources ranked lower than R&D/design expenditures	Reduces the ability to absorb, adapt, and integrate externally sourced innovations
Intellectual Property (IP) Management Barriers (Chesbrough and Brunswicker, 2014)	Weak IP protection or unclear processes hinder partnerships and knowledge sharing.	IP rights ranked lowest among outputs, with only two firms filing patents.	Deters collaboration due to the risk of IP leakage or disputes
Network and Collaboration Barriers (van de Vrande et al., 2009; Gassmann and Enkel, 2004)	Poor linkages with universities, industry partners and institutions	50% of firms lacked university–industry collaboration; concerns about project suitability	Limits access to external ideas, markets, and complementary capabilities
Cultural and Strategic Misalignment Barriers (Gassmann and Enkel, 2004)	Strategies not aligned with open innovation principles	Dominance of aggressive, output-driven strategies	Prioritises speed and control over knowledge co-creation and sharing
Resource and Priority Allocation Barriers (van de Vrande et al., 2009)	Imbalanced resource distribution undermines openness-enabling capabilities	Heavy focus on exports; underinvestment in HR and long-term IP systems	Strengthens competitive edge but weakens openness potential

While the findings of Şakar, Çağlayan, and Yılmaz Özsoy (2023) originate from the Turkish landscape architecture industry, their alignment with established innovation barrier categories suggests that small firms in design-intensive sectors often encounter common structural obstacles, regardless of geography. However, systemic and historical constraints often magnify these barriers in South Africa's architectural

and landscape architectural SMME sector, particularly among Black-owned enterprises (Vilakazi & Bosiu, 2021).

The legacies of apartheid spatial planning and unequal access to professional networks are not isolated challenges but represent a documented systemic exclusion within the South African built environment. While Vilakazi and Bosiu (2021) identify these as primary inhibitors of Black-owned firms, their findings are reinforced by a broader body of evidence that highlights a compounded barrier environment.

The persistence of racially homogenous professional networks, which Mafundu and Mafini (2019) describe as "closed-loop ecosystems," continues to restrict the flow of high-value project information to Black-owned micro-practices. This is further supported by the Council for the Built Environment (CBE, 2024), which notes that spatial fragmentation continues to dictate market access, effectively isolating emerging firms from urban innovation hubs.

The limited collateral mentioned by practitioners is a recognised feature of Institutional Voids in emerging markets (Khanna & Palepu, 2010). In the South African context, this is compounded by what Nduro and Duodu (2020) term "financial precarity," in which the lack of generational wealth prevents small firms from securing the credit lines needed for technological adoption or R&D.

The underrepresentation in large-scale public procurement is not merely a firm-level failure but a structural outcome of current grading systems. Bolosha et al. (2023) argue that the CIDB and B-BBEE frameworks, while transformative in intent, often create a "compliance burden" that favours established incumbents over innovative micro-firms. This Grading Ceiling is a recurring theme in recent National Treasury (2023) reports regarding the slow pace of professional services transformation.

2.7. Innovation Barriers in Marginalised and Black-Owned Built Environment SMMEs in South Africa

According to the Centre for Science, Technology and Innovation Indicators (2024), Innovation in South Africa occurs within a dynamic and multifaceted socio-economic environment, influenced by global trends and local challenges. South African businesses must navigate infrastructure deficits, unreliable energy supply, policy uncertainty, and persistent inequality (Aghimien et al., 2018). Ongoing load shedding,

socio-political unrest, and the COVID-19 pandemic have disrupted conventional business operations, pushing enterprises to reprioritise budgets and adapt strategies (Centre for Science, Technology and Innovation Indicators, 2024). These disruptions have simultaneously revealed the resilience and adaptability of South African firms, as many have adopted digital technologies, leveraged networks, or developed new business models in response (Nel & Masilela, 2020). The study by Bolosha, Sinyolo, and Ramoroka (2022) offers a rare insight into factors that influence innovation in marginalised SMMEs, as most innovation research focuses on larger formal firms and overlooks smaller firms in rural and township settings. Bolosha et al. (2022) address this gap through an empirical study of 643 SMMEs in marginalised contexts, using the Local Innovation Advancement Tools (LIAT) framework to capture economic and social innovation outcomes.

Their findings reveal that 85% of SMMEs engaged in some form of innovation, with process innovations most prevalent, followed by marketing and organisational innovations. However, significant barriers persisted, including limited access to Information and Communication Technology, libraries, and laboratories, as well as low levels of government support for innovation. Networking emerged as a critical enabler, with informal and formal relationships positively influencing invention and adaptation activities (Bolosha et al., 2022). Crucially, informal enterprises were more likely to implement incremental changes to existing processes than to undertake radical innovations, highlighting the resource constraints and infrastructure limitations faced by Black-owned design firms operating under resource-limited conditions (Mafundu & Mafini, 2019).

While Bolosha et al. (2022) provide valuable evidence of innovation dynamics in marginalised South African SMMEs, their cross-sectoral research does not account for sector-specific dynamics in knowledge-intensive creative industries such as architecture and landscape architecture. The nature of innovation in design services often involves project-based collaboration (Duodu & Rowlinson, 2021), large-scale tender processes, design software integration, and creative problem-solving (Amabile et al., 2018) that may encounter unique barriers, such as software licensing costs, access to design technology, intellectual property protection, and limitations in professional networking (Bolosha et al., 2023). Furthermore, the intersection of race and ownership in post-apartheid South Africa introduces additional structural barriers

for Black-owned architectural and landscape architectural firms, which remain underexplored in existing literature (Aigbavboa & Thwala, 2014). Therefore, this study builds on the insights of Bolosha et al. (2022) by examining innovation barriers in a specific subset of SMMEs, Black-owned architectural and landscape architectural practices in South Africa. Focusing on the professional service sector, which has high creative and technological demands, and considering the compounded effects of professional accreditation, market-entry challenges, and racialised access to resources, this research addresses a critical gap in understanding innovation barriers in South African SMMEs.

Aghimien et al. (2018) offer valuable insight into the interplay between economic challenges and organisational survival strategies within the African built environment. Their survey of construction and consultancy firms in Nigeria found that while innovation, particularly the adoption of new technologies and innovative practices, is recognised as crucial for resilience and competitive differentiation, it is not the most widely adopted strategy in practice. Instead, organisation and workforce management strategies such as staff training, multi-tasking, and downsizing are prioritised, accounting for 37% of the variance in the adoption of survival strategies.

Innovation strategies, including technological change and improved service delivery, follow at a lower 7.8% adoption rate (Aghimien et al., 2018), partly constrained by limited financial resources and prevailing economic instability (Aigbavboa & Thwala, 2014). The authors note, "ways of surviving in a harsh economy include adopting new technologies and innovative ideas that will give organisations an edge over their counterparts," yet emphasise that technological advancement lags in developing economies like Nigeria, restricting the full realisation of innovation's benefits.

This pattern of prioritising internal resource management over innovation reflects broader barriers faced by Black-owned landscape architectural firms in South Africa. In South Africa, economic pressures, capital shortages, and immediate survival concerns may similarly impede investments in new technologies and creative practices (Windapo, 2016), heightening the need for supportive policies and industry interventions that address both resource limitations and organisational capacities (Vilakazi & Bosiu, 2021). By illustrating how innovation is acknowledged but underutilised in response to economic adversity, Aghimien et al.'s findings frame

innovation barriers as technical obstacles and outcomes of organisational strategy choices shaped by broader contextual factors. These insights are informative for understanding why and how innovation efforts in South African firms may be hindered and suggest targets for future research and policy aimed at enhancing innovation uptake in marginalised sectors.

Sexton and Barrett (2003) present an influential synthesis of literature on innovation in small construction firms, advancing a generic innovation model that integrates four interdependent elements: the focus of innovation, the context of innovation, organisational capabilities, and the innovation process. Their work emphasises that a single factor does not drive innovation performance in small firms. Instead, it emerges from the dynamic interaction among external market conditions, internal resources, intellectual and functional capacities, and the management and embedding of innovation activities. While developed in the UK construction sector, the model is particularly relevant to the South African architectural and landscape architectural SMME context, where similar structural challenges, such as industry fragmentation, short-term project collaborations, and limited access to innovation networks and finance, also exist (Sexton & Barrett, 2003). However, for Black-owned firms, these barriers are further compounded by the enduring legacies of apartheid-era exclusion from asset ownership (Vilakazi & Bosiu, 2021), undercapitalisation, and systemic biases in client networks, which influence both their strategic innovation focus and their ability to mobilise the requisite resources and capabilities (Bolosha et al., 2023). Applying Sexton and Barrett's model to this context highlights that innovation barriers are multi-layered, as market-driven pressures, competitive tendering, spatial inequalities, resource constraints, a lack of organisational slack, limited technology investment, and ad hoc, reactive innovation processes converge to constrain the introduction and diffusion of innovative practices. This adapted reading of the model provides an integrative lens for analysing how structural inequities, policy frameworks such as B-BBEE procurement, and the realities of small firm operations interact to influence innovation capacity in Black-owned design-based SMMEs (Bolosha, 2023).

The dual-layered challenge of universal sectoral barriers combined with locally specific socio-economic barriers creates a critical gap in the literature (Nduro and Duodu, 2025). While global studies offer valuable typologies of innovation constraints, they seldom address the intersection of race, ownership structure, and sectoral

characteristics in the South African built environment (Bolosha, 2023). Consequently, there remains limited empirical insight into how these intertwined barriers shape innovation capacity, strategic choices, and collaboration behaviour in Black-owned and landscape architectural SMMEs (Bolosha, 2023). Addressing this knowledge gap is essential for contextualising theory on open innovation barriers within historically unequal economies and for informing inclusive innovation policy, targeted support mechanisms, and sector-specific capacity-building programs (Lukhele & Soumonni, 2021).

In analysing innovation barriers in Black-owned architectural and landscape architectural SMMEs in South Africa, it is essential to consider external resource and market constraints (Aigbavboa & Thwala, 2014), as well as the micro-level socio-cognitive dynamics that shape creative processes (Majchrzak et al., 2023).

Majchrzak et al. (2023) propose seven principles of innovation-producing encounters, each revealing subtle barriers to human interaction. For example, while open innovation includes participants with limited time, the acute project and financial pressures typical in small South African firms often preclude engagement in wider industry knowledge exchange, limiting exposure to novel ideas. Additionally, an overreliance on familiar dialogues and client relationships may reinforce established approaches, limiting the diversity of perspectives needed for breakthrough solutions. The constrained access to multidisciplinary networks further compounds the challenge, as knowledge sharing within these firms tends to be limited to routine collaborators, which impedes the flow of diverse and transformative insights. Marginalised firms may lack both forums and psychological safety to surface and creatively resolve paradoxes common in the built environment sector, such as balancing cost efficiency with design innovation. Due to small team sizes, the absence of role diversity means that critical functions, such as radical idea generation or integrative problem-solving, are often missing, stifling the formation of holistic solutions. Moreover, heightened sensitivity to social cues and industry gatekeeping can foster self-censorship, discouraging the risk-taking necessary for creative advancement (Majchrzak et al., 2023).

Against this backdrop, the present study investigates the nature, prevalence, and perceived impact of innovation barriers experienced by Black-owned architectural and

landscape architectural SMMEs in South Africa. Building on the global barrier frameworks and informed by sectoral patterns identified in the Turkish case, this research applies a context-sensitive analytical lens to examine internal organisational constraints and the external systemic conditions that restrict participation in open and collaborative innovation. Therefore, the methodological approach is designed to capture multi-level influences, ranging from firm-level capability gaps to policy and market structure factors, ensuring that the findings are both theoretically robust and practically relevant for stakeholders in the South African innovation ecosystem.

2.8. Summary and Research Gaps

The literature highlights that innovation is increasingly recognised as a critical driver of competitiveness, sustainability, and growth within the architectural and landscape architectural sectors. Globally, small and medium-sized enterprises (SMEs) face recurring challenges, including limited financial and human resources, restricted access to knowledge networks, and shortages of specialised skills. At the same time, SMEs often leverage their flexibility and adaptability to remain competitive and responsive to market demands. Within South Africa, however, these universal challenges are compounded by systemic barriers rooted in the country's socio-political history, including the enduring effects of apartheid-era inequities, persistent market concentration, and exclusionary procurement practices (Aghimien et al., 2018).

Open Innovation (OI) frameworks offer a valuable conceptual lens for understanding how firms integrate internal and external knowledge to enhance their innovation capabilities (Chesbrough & Bogers, 2014). While OI research is well established in large, resource-rich corporations, its application in design-intensive SMEs, such as architectural and landscape architectural firms, remains underexplored (Barrett et al., 2020).

In South Africa, firms in the built environment face unique pressures, including low transformation rates, limited access to finance (Aigbavboa & Thwala, 2014), and restricted entry into high-value markets (Vilakazi & Bosiu, 2021). Despite existing studies in related fields, there is limited empirical evidence that captures the specific innovation dynamics and barriers faced by small, Black-owned architectural and landscape architectural practices (Bolosha et al., 2023).

Significant research gaps remain. Firstly, the experiences of small, Black-owned design-based SMEs have received little dedicated attention, leaving a limited understanding of how these firms navigate innovation within a structurally unequal economy (Lukhele & Soumonni, 2021). Secondly, existing studies frequently adopt international frameworks that overlook South Africa's unique context, where historical exclusion, Broad-Based Black Economic Empowerment (BBBEE) policies, and systemic barriers intersect (Vilakazi & Bosiu, 2021). Thirdly, there is a lack of examination of how managerial characteristics, network access, policy constraints, and technological adoption influence innovation outcomes in these firms.

This research addresses these gaps by examining context-specific barriers to innovation in small, Black-owned architectural and landscape architecture firms in South Africa. By integrating open innovation theory with empirical evidence from a historically unequal, resource-constrained setting, this study aims to make both theoretical and practical contributions. The research aims to inform inclusive policy frameworks, targeted capacity-building initiatives, and sector-specific interventions that can support sustainable innovation and growth among historically disadvantaged firms in the built environment.

2.9. Conceptual Framework: The Vicious Cycle of Exclusion

While the theoretical framework provides the broad lenses of Institutional Theory and Open Innovation, the conceptual framework articulates the specific variables and their interrelationships within the South African built environment.

2.9.1. The "Vicious Cycle of Exclusion" Model

The researcher has synthesised the key concepts into an original conceptual model titled the "Vicious Cycle of Exclusion." This model illustrates how four specific dimensions intersect to inhibit firm growth and innovation.

Dimension 1 is the Structural and Systemic Barriers. These are the historically embedded economic conditions, such as limited generational wealth and market concentration, that define the "starting point" for Black-owned firms (Mafundu & Mafini, 2019).

Dimension 2 is Resource Scarcity (The Triple Constraint). This represents the intersection of limited financial capital, a restricted skills pipeline, and a thin

professional network. These constraints weaken a firm's "Absorptive Capacity," making it difficult to sustain the adoption of Open Innovation models (Nduro & Duodu, 2020).

Dimension 3 is Institutional Gatekeeping. This refers to the formal mechanisms, such as registration delays and mentorship requirements, and informal "old boys' clubs" that act as filters, deciding which firms are granted "credibility" in the marketplace (CBE, 2024).

Dimension 4 is Capacity Vulnerability, the cumulative outcome of the previous three dimensions. It describes a state where firms are locked in a "survivalist mode," lacking the organisational "slack" required to engage in the collaborative, risk-heavy activities central to Open Innovation.

The 'Vicious Cycle of Exclusion' is the operational tool for this study. It synthesises the broad abstractions of Institutional Theory into four measurable dimensions. For example, the concept of 'Isomorphism' from theory is translated into 'Capacity Vulnerability' in the conceptual model, explaining how firms are forced to mimic larger entities just to survive, thereby stifling their unique innovative potential

2.9.2. Synthesis of Frameworks

The relationship between these concepts is cyclical rather than linear. Institutional gatekeeping leads to resource scarcity, which reduces capacity, thereby reinforcing the systemic barriers that prevent Open Innovation. By separating these variables, the study can clearly interpret the empirical findings to determine which specific link in the cycle is the most restrictive for Black-owned design practices.

2.10. Conclusion

This chapter has critically synthesised the theoretical and empirical literature surrounding innovation within the South African built environment. By moving beyond a descriptive account of barriers, the review has identified a profound Policy-Practice Gap: institutional frameworks designed for transformation often serve as the primary sources of Regulatory Friction for Black-owned micro-practices. The synthesis of Institutional Theory and Open Innovation has culminated in the "Vicious Cycle of Exclusion", providing a context-specific conceptual model that maps the intersection of structural inequity, resource scarcity, and institutional gatekeeping.

However, the literature remains largely theoretical or focused on large-scale corporate entities, leaving the lived realities of Black practitioners under-researched. This critical gap necessitates an interpretivist, qualitative investigation to test the dimensions of the "Vicious Cycle" through primary empirical data. Consequently, Chapter 3 outlines the phenomenological methodology, the purposive sampling strategy, and the thematic analysis used to decode these narratives, thereby moving the study from theoretical synthesis to empirical discovery.

CHAPTER 3
RESEARCH METHODOLOGY

3.1. Introduction

This chapter details the methodological framework employed to investigate the barriers to innovation faced by small Black-owned architectural and landscape architecture firms in South Africa. It outlines the research philosophy, approach, design, and methodology. Furthermore, it describes the sampling frame and strategy, the target population, and the data collection method. Thereafter, data analysis, data presentation and interpretation, ethical considerations, and the justification for document review and the use of research tools will be discussed. The primary objective is to construct a rich, contextual understanding of the lived experiences of firm leaders and identify potential pathways toward open innovation.

3.2. Research Philosophy

A research philosophy is the foundational belief system that guides research, specifically concerning the nature of ontology, which is the philosophical study of being and what can be accepted as knowledge (Saunders et al., 2019). The research philosophy frames the researcher's perspective on a research problem and provides the theoretical foundation for the entire study (Creswell, 2018). There are three distinct research worlds: the objective world, positivism and post-positivism; the socially constructed world; and the individually constructed world (phenomenology) (Fox et al., 2007).

The objective world (positivism and post-positivism) holds that a single objective reality exists independently of the researcher (Creswell, 2018). Research in this context synthesises knowledge through generalised principles, often using quantitative methods (Saunders et al., 2019). The approach is traditionally defined as scientific research and characterised by experiments designed to test hypotheses (Creswell, 2018). The collected data is numerical, as this is a quantitative research study (Saunders et al., 2019).

The traditional stance is positivism, which is that scientific knowledge directly reflects an objective world (Fox et al., 2007). The most recent view is post-positivism, which holds that an objective reality exists but can only be understood slowly and imperfectly

due to the limitations of research and the researcher's inability to be completely neutral (Creswell, 2018). The primary goal is replicability, where an independent researcher could obtain the same results (Saunders et al., 2019).

The socially constructed world is a philosophical concept that posits that social interactions, language, and shared meanings collectively shape reality (Umeokafor, 2018). This philosophy focuses on how groups, rather than individuals, create a shared understanding. This research approach uses qualitative methods to explore these shared experiences (Fox et al., 2007). Knowledge is gathered through observation and open interviews rather than experiments. Data usually consists of words that are critically analysed and organised systematically (Saunders et al., 2019). This research world encompasses a range of qualitative research methods.

The individually constructed world known as phenomenology focuses on the unique subjective experience of an individual by holding that reality is what a person experiences and how they make sense of their own world (Fox et al., 2007). The approach celebrates what is unique about an individual (Fox et al., 2007). Research methods include interpretative phenomenological analysis (IPA), which investigates an individual's perceptions and the meaning they assign to their experiences. This philosophy gathers qualitative data from a limited number of people (Fox et al., 2007). The researcher acknowledges that they are co-constructors of research findings and that their language and background are central to the process (Fox et al., 2007). Understanding one's subjectivity is not about eliminating it, but about how it affects the research (Fox et al., 2007)

3.2.1. Application of the research philosophy

This study is grounded in a social constructionist approach, which holds that reality is socially constructed through language, social interactions, and shared meanings within specific contexts. The study critically examines the innovation barriers faced by small Black-owned architectural and landscape architectural firms in South Africa, a context shaped by socio-economic and historical factors. By employing qualitative methods, such as in-depth interviews with practitioners, the research captures rich, contextualised perspectives on how these firms navigate challenges unique to their socio-economic environments (Creswell & Creswell, 2018). Through thematic analysis, this approach systematically organises and interprets participants'

experiences and the collective meaning-making processes that inform their innovation practices and barriers (Braun & Clarke, 2006). This methodology aligns with the interpretivist emphasis on understanding subjective realities and social constructions (Saunders, Lewis & Thornhill, 2019), enabling the research to provide nuanced insights into collaborative knowledge flows, stakeholder engagement, and capacity-building strategies that can foster inclusive transformation in the South African built environment (Mabaso & Naidoo, 2021).

3.2.2. Research Paradigms

The chosen research philosophy directly informs a study's research paradigm, which provides its practical framework (Saunders, Lewis & Thornhill, 2019). A paradigm guides the entire research process, grounded in the researchers' beliefs and assumptions about the nature of reality, ontology, and epistemology (Saunders, Lewis & Thornhill, 2019). Ontology shapes how one sees the world and, therefore, studies it (Saunders, Lewis & Thornhill, 2019). The paradigms described in this section are interpretivism/constructivism (qualitative paradigm) (Creswell & Creswell, 2018).

3.2.3. Research Philosophy: An Interpretivist Paradigm

This research is situated within an interpretivist paradigm and adopts a phenomenological approach to explore the lived experiences of Black architectural practitioners. Rather than seeking objective, universal laws, this positioning acknowledges that innovation in the South African built environment is a socially constructed phenomenon, shaped by historical exclusion and systemic friction. Consequently, a qualitative approach is required to decode the subjective meanings participants attach to 'success' and 'failure' within a constrained market.

3.3. Research Method

3.3.1. Qualitative Research Approach

This study adopts a qualitative exploratory research design situated within an interpretivist paradigm. This positioning is strategically chosen over a purely phenomenological approach to allow for a broader structural interpretation of the innovation landscape.

While phenomenology focuses strictly on the essence of an individual's lived experience, an exploratory design allows the researcher to bridge the gap between

individual narratives and the macro-institutional barriers identified in Chapter 2. This alignment is critical because the research problem, the "Vicious Cycle of Exclusion", is not merely a psychological state of the practitioner, but a systemic outcome of regulatory and economic friction.

By utilising thematic analysis as the primary analytical tool, the study can move beyond description to identify recurring patterns of exclusion across different practice scales. This approach ensures that the findings are not just a collection of stories but a structured map of the "Institutional Voids" that hinder Black-owned firms.

3.3.2. Inductive and Deductive Reasoning

Research reasoning typically follows two distinct paths: deductive and inductive. While often viewed as opposites, this study strategically utilised both to ensure that findings were both theoretically grounded and empirically rich (Saunders, Lewis and Thornhill, 2019).

A deductive approach is a form of reasoning that begins with a general theory or a set of established premises and proceeds to a specific, logical conclusion (Bhattacherjee, 2012). It is primarily a "theory-testing" process in which the researcher develops a theory and hypotheses from the existing literature and then designs a research strategy to rigorously test them (Bhattacherjee, 2012; Saunders, Lewis, and Thornhill, 2018). This approach is the dominant research method in the natural sciences. The logic of deduction dictates that if the initial premises are true, the conclusion must also be proper (Bhattacherjee, 2012).

In this project, the deductive approach was applied by using the Open Innovation (OI) framework (Radziwon & Vanhaverbeke, 2024) as a lens to interrogate the South African built environment. Rather than starting with a blank slate, this study used established concepts, such as absorptive capacity and institutional gatekeeping, to determine whether they accurately explained the barriers faced by Black-owned firms.

During the thematic analysis, certain themes were derived deductively from the research questions, such as "Access to Funding" (Theme 1) and "Regulatory and Policy Barriers" (Theme 4). This allowed for a systematic evaluation of whether the "barriers" identified in global literature were present in the South African context

In contrast, an inductive approach moves from specific observations and empirical data toward broader generalisations or theories (Bhattacherjee, 2012). This method is a "data-driven" process in which the goal is to infer theoretical concepts from patterns observed in the data (Saunders, Lewis, and Thornhill, 2019).

This approach was central to the Interpretivist paradigm used in this research. Using Braun and Clarke's (2006) six-phase thematic analysis, the study allowed new insights to emerge directly from the participants' narratives. Concepts such as "Capacity Vulnerability" and the "Vicious Cycle of Exclusion" were not pre-planned; they emerged inductively through the coding of 10 in-depth interviews. This allowed the study to capture unique local realities.

Rather than choosing one over the other, this study moved back and forth between theory and data. This was particularly evident in the development of the Structural Open Innovation Model. The model was built by integrating existing "Open Innovation" theories (deductively) and modifying them based on surprising data findings, such as the high level of ethical awareness among practitioners despite severe resource constraints.

By combining these approaches, the research ensures that the final findings are not just a list of definitions, but a nuanced interpretation of how systemic inequality actively suppresses the innovation potential of Black-owned firms.

3.3.3. Research Design

Cross-sectional research design involves collecting data at a single point in time to obtain a "snapshot" of the phenomenon under study, allowing researchers to describe characteristics, examine relationships, or test hypotheses without tracking changes over time (Saunders, Lewis & Thornhill, 2021).

This design was used to capture a snapshot of the specific barriers facing Black-owned architectural firms during the current post-pandemic economic recovery phase in South Africa. Because the study focuses on systemic issues such as capacity vulnerability and procurement bias, it was vital to understand how these barriers operate in the current professional landscape.

Rather than tracking a firm's growth over 10 years (longitudinal), this research focused on the immediate, lived realities of 10 practitioners at their current stage of business.

This provided a broad cross-section of the industry, ranging from emerging solo practitioners to established small-firm owners, to identify common patterns of exclusion and struggles with innovation.

Given the qualitative nature of the study, a cross-sectional approach enabled intensive, in-depth data collection within a specific timeframe required for interpretivist research. It enabled the researcher to gather rich, detailed narratives from multiple participants simultaneously, providing a comprehensive view of the "vicious cycle of exclusion" that currently hampers innovation in the sector.

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By taking a snapshot of the current effectiveness of the Broad-Based Black Economic Empowerment (B-BBEE) and Construction Industry Development Board (CIDB) frameworks, the study highlighted urgent, real-time gaps between policy intent and practitioners' current experiences.

3.4. Population

The population for this study is drawn from the registered professional databases of the South African Council for the Architectural Profession (SACAP) and the South African Council for the Landscape Architectural Profession (SACLAP). As of 2024, SACAP reports 11,551 registered persons, of whom 8,859 are active professionals (SACAP, 2024). The landscape architectural profession represents a smaller, specialised segment of the built environment. While SACLAP focuses on a more concentrated registry, the total number of registered professionals and candidates remains significantly lower than in architecture, emphasising the "micro-network" nature of this specific field (SACLAP, 2024). This broad population provides the context for the study's focus on the systemic barriers within the built environment.

3.4.1. Sample Frame

The sampling frame for this study was derived from the official professional registries of the South African Council for the Landscape Architectural Profession (SACLAP)

and the South African Council for the Architectural Profession (SACAP). These registries provided a verified list of registered professionals and candidates within the built environment. To ensure a broader regional perspective, the frame was supplemented by the membership database of the International Federation of Landscape Architects, Africa Region (IFLA Africa). These formal registries served as the primary source for identifying Black architects and landscape architects, ensuring that the sample consisted of high-calibre, registered practitioners capable of providing the deep narratives required for an interpretivist study. The specific number of participants drawn from this frame, determined by the principle of data saturation, is detailed in Section 3.4.3.

3.4.2. Sampling Techniques

This study employed a dual sampling strategy to select a final sample of ten (10) participants who represent a diverse cross-section of the built environment. Of the total sample, seven (7) participants were identified through purposive sampling using the formal professional registries of SACLAP and SACAP. The remaining three (3) participants were reached via snowball sampling to access informal micro-networks that are often under-represented in statutory databases.

To mitigate the inherent risks of selection bias and 'homophily' (the tendency for participants to refer similar individuals), the following safeguards were implemented: Strict Inclusion Gatekeeping, regardless of the recruitment method, all participants were required to meet the same stringent criteria: they had to be Black professionals. During the snowballing process, the researcher intentionally requested referrals from different geographical areas (Gauteng vs Western Cape) and varying practice contexts (public vs private sectors) to ensure a broad spectrum of perspectives. Thematic Saturation was achieved by cut-off sampling. Sampling was concluded once data saturation was reached at ten participants, ensuring that the final findings were determined by the emergence of repetitive themes rather than a fixed personal network.

3.4.3. Sample Size and Data Saturation

While the study initially planned for 14 interviews, the final sample consisted of 10 participants. For this project, saturation was reached by the 8th interview, at which point no new first-order codes emerged. The final two interviews confirmed and

solidified the existing themes, such as Capacity Vulnerability and Client Bias. This sample size is consistent with qualitative norms for a tightly focused research question.

3.4.4. Rationale for Participant Selection

A purposive sampling approach was used to select participants who could provide rich, contextually grounded insights into the innovation challenges and collaborative practices within South Africa's architectural and landscape architecture sectors. The rationale for participant selection was based on their professional experience, institutional positioning, and exposure to innovation processes, whether in private, public, or non-profit practice settings. Because the research problem is centred on a specialised, historically marginalised group, random sampling would be ineffective.

Purposive sampling allowed the researcher to target extreme cases of practitioners who have successfully navigated the transition from Candidate to Owner, thereby providing the most relevant data on how innovation barriers are overcome or sustained in the South African context.

3.4.5. Participant Profile Summary

This section presents a summary of the study's participant profile. Each participant contributed to the study's broader aim of understanding how barriers to innovation, such as limited access to funding, collaboration challenges, client bias, and weak institutional support, influence the potential for open innovation in the built environment. Their diverse backgrounds strengthen the study's credibility and transferability, offering a nuanced portrayal of innovation across different organisational and professional contexts.

Table 2: Participant Profile Summary

Participant	Professional Role	Practice Context	Key Attributes	Relevance to the Study
Participant 01	Candidate Landscape Architect	White-owned private landscape architectural firm (commercial/private sector)	Black female emerging professional; limited innovation exposure; works in an exclusionary, racially homogeneous environment.	Provides insight into how young Black practitioners experience constraints, limited mentorship, and restricted opportunities for innovation in white-dominated firms.
Participant 02	Professional Landscape Architect	Department of Public Works (public sector)	Experienced professional; deep knowledge of procurement, SCM, BEE, and public-sector processes	Provides an understanding of public-sector regulatory barriers, procurement challenges, and structural limitations on innovation within government environments.
Participant 03	Freelance Landscape Designer and Fellow	Freelancing for a white-owned exclusive gardening firm; involved in	Black female entrepreneur; sustainability-driven; critiques professional	Highlights constraints on entrepreneurship, registration barriers, and how emerging

Participant	Professional Role	Practice Context	Key Attributes	Relevance to the Study
		entrepreneurial projects.	bodies and education gaps	Black designers innovate outside formal firm structures.
Participant 04	Honours Student (Landscape Architecture) & Freelancer	Freelancing for a Black property developer committed to empowerment	Young Black female; experiences an inclusive, supportive project environment; early-career perspective	Offers a contrast to exclusionary industry environments, showing how empowerment-oriented developers create space for innovation and skill development.
Participant 05	Freelancer & Co-Founder of Rural-Focused Non-Profit	Multidisciplinary non-profit (social innovation, rural development, research-driven)	Works with grant funding; uses micro-networks; multidisciplinary collaboration; cross-continental partnerships	Demonstrates how funding scarcity, grant dependence, and multidisciplinary collaboration shape innovation in non-profit design contexts.
Participant 06	Landscape Architect & Consultant (Self-Employed)	Private consulting + self-employment; mixed project types	Black male practitioner; experienced racial bias; values pragmatic innovation; policy-aware	Shows how racialised client selection, accreditation needs, and professional networks affect innovation opportunities for independent practitioners.
Participant 07	Professional Landscape Architect	Public Works (environmental and infrastructure projects)	Works closely with environmental professionals; emphasises mentorship and upskilling	Highlights integration barriers between ecological management and landscape architecture; reveals

Participant	Professional Role	Practice Context	Key Attributes	Relevance to the Study
				gaps in global recognition and local collaboration systems.
Participant 08	Candidate Architect	Gauteng Department of Infrastructure Development (public sector)	Uses BIM; involved in large public projects; faces software and policy limitations	Provides insight into digital innovation (BIM), outdated policies restricting innovation, and how B-BBEE affects equity and representation.
Participant 09	Intern (Landscape Architecture)	Private landscape architectural firm; exposure to the Young Urbanists network	Early-career practitioner; strong network-driven learning; limited funding access	Illuminates the challenges of awareness in landscape architecture in SA and how youth networks enable innovation despite structural funding constraints.
Participant 10	Professional Architect	Large, established architectural practice with diverse leadership	Experienced practitioner; strong mentorship exposure; works across public/private sectors	Highlights the role of mentoring in innovation, business skills gaps in education, and how financial and client pressures influence innovation in established firms.

3.5. Data Collection Methods

3.5.1. Semi-Structured Interviews

The primary data collection method was be semi-structured in-depth interviews, chosen for their flexibility, which enabled participants to articulate their experiences comprehensively while allowing emergent themes to surface naturally (Whyte & Sexton, 2011). The interview guide was meticulously developed, drawing on existing literature and expert consultation. It explored key topics, including personal experiences with innovation, the impact of policy and market dynamics, challenges related to resource access, modes of collaboration, and educational pathways. Interviews will be conducted either face-to-face or online, lasting approximately 45 to 60 minutes, and will be audio recorded with participants' informed consent to ensure transcription accuracy and data integrity.

An interview guide, informed by the literature and preliminary discussions with sector experts, will cover topics such as:

1. Personal and professional experiences of innovation and its barriers.
2. The influence of policy, procurement, and industry norms on innovation.
3. Access to resources, networks, mentorship, and market opportunities.
4. Experiences with collaboration, collective action, and open innovation practices.
5. The role of education and training in supporting or hindering innovation.
6. Recommendations for policy, practice, and education reform.

The research will ensure that all procedures comply with the University of KwaZulu-Natal's ethics policy and the Protection of Personal Information Act (POPIA) of South Africa. Participants will be informed about the anonymity measures outlined in the information sheet and consent form, as well as their right to withdraw at any time.

Each participant was assigned a unique code or pseudonym, being "Participant 01", immediately after recruitment. All data, including interview transcripts, notes, and analysis files, will use these codes instead of real names or other identifying details. Personal identifiers such as names, firm names, specific locations, or other information that could reveal a participant's identity will be removed from all records and research

outputs (Saunders et al., 2019). Any references to specific projects, organisations, or individuals will be generalised or redacted in transcripts and reports.

Consent forms and participant contact details will be stored separately from research data, in password-protected digital files. Only the researcher and supervisor will have access to the complete list, which links codes to actual identities. This list will be kept securely and destroyed after the completion of the study.

Findings will be presented in aggregate or with anonymised quotations. No information that could identify any individual or firm will be published. Confidentiality agreements will ensure that all research team members, including the supervisor, adhere to strict confidentiality protocols.

3.5.2. Documentary Analysis

To provide context to the interview data, a systematic review of relevant documents was conducted, covering the period from 2020 to 2024. This five-year window was selected to ensure the analysis captured the most recent shifts in the regulatory environment, including post-pandemic recovery strategies and the latest amendments to B-BBEE and procurement frameworks.

This method enabled triangulation of data. By comparing participants' responses on Regulatory Barriers (Theme 4) with the policies' actual wording, the researcher could identify the gap between policy intent and practical execution. Using documents ensured that the study was not based solely on opinion but was grounded in the structural realities of the South African built environment.

3.5.3. The Researcher as an Instrument

In qualitative research, the researcher serves as the primary instrument for data collection and analysis, necessitating a high degree of reflexivity. Reflexivity involves a conscious evaluation of how the researcher’s own experiences, values, and social position may have shaped the research process.

Central to this study is the researcher’s dual role as both the primary investigator and the owner of a micro, Black-owned landscape architectural firm. This "insider" status provided several methodological advantages, beginning with Rapport and Trust, as the researcher’s professional engagement provided direct exposure to the lived realities of the industry, fostering trust with participants. This allowed practitioners to

share sensitive details about financial fragility and exclusionary networks that might otherwise have been withheld from outsiders. Secondly, in the context of Nuance, as the researcher personally navigated funding limitations and policy complexities, the researcher was able to probe deeper during semi-structured interviews to uncover the "vicious cycle of exclusion".

To ensure the integrity of the findings and mitigate potential researcher bias, specific strategies for rigour were employed, including Member Checking, where key themes were shared with selected participants to confirm that the interpretation of their "lived experiences" was accurate. Inductive Coding was done to ensure Themes were grounded directly in participants' verbatim quotes through first-order codes, rather than being forced into pre-existing theoretical boxes. Lastly, triangulation of interview data with secondary sources, such as B-BBEE policy documents and statutory reports, was used to ensure the findings reflected systemic realities beyond the researcher's individual experience.

3.5.4. Data Collection Procedure

To ensure ethical and academic rigour, the following steps were followed:

i. Preparation: Development of the interview guide based on the Open Innovation framework.
ii. Gatekeeper Engagement: Utilising the letters from SACLAP and IFLA Africa to recruit participants.
iii. Consent: Each participant signed an informed consent form and was informed that their responses would be kept anonymous (using codes P01–P10).
iv. Recording and Transcription: Interviews were recorded and transcribed verbatim. These transcripts served as the "raw data" for the thematic analysis in Chapter 4.

3.5.5. Data Quality and Considerations

In qualitative research, traditional quantitative reliability and validity measures are replaced with the concept of trustworthiness (Fox, Martin & Green, 2007). To ensure this study’s findings are accurate and credible, prolonged engagement with participants’ narratives and data triangulation were used by comparing participants' interview data with statutory reports from SACAP and SACLAP. The researcher ensured that the innovation barriers described were not isolated opinions but reflected

broader systemic realities. Member checking was done after transcribing the interviews, key themes were shared with selected participants to confirm that the interpretation of their "lived experience" was accurate and not distorted by researcher bias.

Descriptive validity ensures that the data have been accurately collected and recorded for analysis (Fox, Martin & Green, 2007). Every interview was digitally recorded via Zoom or Teams with the participants' consent. These recordings were then transcribed verbatim. To ensure accuracy, the researcher manually cleaned the transcripts while re-listening to the audio to capture nuances and tone, especially when participants discussed sensitive topics such as client bias or financial strain.

Inductive Coding was achieved in this research project by following Braun and Clarke's (2006) systematic phases. The researcher ensured that themes such as Capacity Vulnerability were grounded directly in participants' quotes through first-order codes rather than forced into pre-existing theoretical boxes.

To ensure the study can be replicated or audited, a clear audit trail was maintained. This includes the raw interview recordings, the coded transcripts, and the evolution of the "Structural Open Innovation Model." This transparency ensures that the findings are clearly derived from the data and not the researcher's imagination.

To ensure the findings regarding the vicious cycle of exclusion were robust, this study moved beyond mere description to establish interpretative validity. This was achieved by grounding every theme in the direct voices of the 10 practitioners, ensuring that the final model is a credible reflection of the current South African architectural landscape rather than the researcher's bias.

3.6. Data Analysis

Thematic analysis was systematically identified, analysed, and interpreted patterns within the interview data. This method enables the researcher to rigorously and transparently explore rich qualitative data (Braun & Clarke, 2006). The analysis followed Braun and Clarke's (2006) six-phase framework, which provided a structured yet flexible approach for uncovering nuanced meanings in participants' experiences regarding innovation barriers and open innovation practices in the South African architectural and landscape architectural fields.

The six phases involved are:

1. Familiarisation with the data: This initial phase involves immersing oneself in the data by repeatedly reading and re-reading interview transcripts to gain familiarity and to note initial observations (Saunders et al., 2020). This step is crucial to developing a comprehensive understanding of the data's depth and breadth before coding begins. Initial codes will be generated from meaningful data segments relevant to the research questions and systematically applied. Codes represent features of the data that appear interesting and significant, capturing essential aspects of participants' accounts (Saunders et. al, 2020). Coding will be conducted using manual techniques and qualitative data analysis software, enabling careful tagging and retrieval of data segments (Saunders, Lewis & Thornhill, 2020).
2. Searching for themes: Codes will then be examined for patterns and clustered into potential themes. This phase involves collating codes with similar meanings or conceptual links to form coherent themes that capture broader patterns of significance across the dataset (Braun & Clarke, 2006).
3. Reviewing themes: The preliminary themes of the coded data and the entire dataset will be reviewed at this stage. This iterative process ensures that themes are internally coherent, distinct from each other, and well-supported by the data. Some themes may be refined, merged, split, or discarded to enhance analytic rigour (Braun & Clarke, 2006).
4. Defining and naming themes: Once the thematic map is finalised, each theme will be clearly defined and named to capture its essence succinctly. Detailed analytical descriptions will be developed to explain how themes relate to the research questions and the study's overall narrative (Braun & Clarke, 2006). To ensure transparency and inductive rigour, the researcher developed a hierarchical coding tree. This process involved moving from First-Order Codes direct participant language to Second-Order Sub-themes conceptual groupings, culminating in the Aggregate Themes that form the basis of the analysis in Chapter 4.

Table 3: Thematic Coding for Innovation Barriers

Raw Data / First-Order Codes	Second-Order Sub-themes	Aggregate Research Themes (Chapter 4)
"Waiting 18 months for registration" *"SACAP fees are a barrier"*	**Professional Gatekeeping**	**1. Regulatory Friction**
"Old boys' clubs still dominate" *"Excluded from big-firm tenders"*	**Network Exclusion**	**2. Structural Barriers**
"No money for new software" *"Living month-to-month"*	**Financial Precarity**	**3. Capacity Vulnerability**
"BIM is too expensive to start" *"No time to learn new tech"*	**Technological Lag**	**4. Resource Scarcity**

While the coding tree captures the dominant patterns across the ten interviews, the researcher also conducted negative case analysis to ensure the integrity of the findings. This involved identifying outlier codes and data points that contradicted the primary themes or the initial conceptual framework.

For instance, while most participants identified Institutional Gatekeeping as a barrier (Theme 1), one participant emphasised that these same institutions provided a "necessary quality seal" for international collaboration. Rather than discarding this contradiction, the researcher categorised it as a nuanced exception within the theme of regulatory friction. This process ensured that the

analysis did not merely confirm the researcher's insider assumptions but remained open to the complex, often contradictory, lived realities of the practitioners. By documenting these deviations, the study achieves a higher level of interpretive validity, demonstrating that the final themes were refined through a critical, iterative process of comparison and contrast.

5. Producing the report: The final phase involves weaving together the analytic narrative supported by illustrative verbatim participant quotes. The report will interpret the identified themes within the context of existing theory and literature on innovation barriers and open innovation, providing insightful conclusions and recommendations (Braun & Clarke, 2006).
6. This reflexive and iterative approach ensures a comprehensive, transparent, and credible analysis of the complex social realities experienced by small Black-owned architectural and landscape architecture firms in South Africa (Braun & Clarke, 2006). Thematic analysis's flexibility and depth make it ideal for exploring the subtle and context-specific challenges and opportunities surrounding innovation in this under-researched sector.

3.7. Ethical Considerations

3.7.1. Ethical Considerations

This research adhered to the highest ethical standards as mandated by the University of KwaZulu-Natal (UKZN). Beyond the general principles, ethics were applied specifically to the context of the South African architectural and landscape architectural sectors.

3.7.2. Institutional Approval and Training

As a prerequisite for this study, the researcher completed the three mandatory UKZN research ethics training modules: Introduction to Research Ethics, Informed Consent, and Understanding Plagiarism. Following this, a detailed research protocol was submitted through the Research Information Gateway (RIG). Formal ethical clearance was obtained from the Human and Social Sciences Research Ethics Committee (HSSREC) before any engagement with participants.

3.7.3. Informed Consent and Voluntary Participation

Participation in this study was strictly voluntary. Before each interview, participants were provided with an Information Sheet outlining the study’s aim.

This was particularly important given the gatekeeper role of professional bodies. The researcher ensured that participants understood their participation was independent and that declining to participate would have no impact on their professional standing. Informed consent forms were signed and filed before each recording started.

A critical ethical challenge in this study was the small size of the professional community, which made it easy to identify by their specific projects or firm sizes.

3.7.4. Anonymity and Confidentiality

Specific Application: To mitigate this risk, all participants were assigned alphanumeric codes (P01-P10). Any specific mention of high-profile projects, firm names, or identifiable geographic locations was redacted from the final transcripts used in Chapter 4. This ensured that practitioners could speak freely about sensitive issues such as Client Bias and Financial Strain without fear of professional repercussions or blacklisting within industry networks.

3.7.5. Data Security and Privacy

In line with the Protection of Personal Information Act (POPIA) and UKZN guidelines, all raw data, including Zoom/Teams recordings and verbatim transcripts, were stored on a password-protected cloud drive and an encrypted external hard drive.

Access to this data was limited strictly to the researcher and the supervisor. As per UKZN policy, these records will be securely stored for 5 years, after which they will be destroyed to maintain the long-term privacy of the firm's owners.

3.7.6. Researcher Bias and Reflexivity

As a Black female owner of a micro-landscape architectural practice, the researcher occupies an insider's position. This dual identity facilitated a high degree of relational trust and linguistic shorthand during interviews, allowing for the disclosure of sensitive professional challenges. However, to mitigate the risk of confirmation bias, the researcher employed thematic bracketing, systematically setting aside personal industry frustrations to ensure the findings remained grounded in the participants' voices. This reflexive process was supported by a field diary, used to document and interrogate the researcher’s emotional responses to the data during the collection phase

3.7.7. Feedback

Based on the research proposal on innovation barriers facing small Black-owned architectural and landscape architecture firms in South Africa, the researcher will implement a comprehensive feedback strategy to ensure participants receive meaningful information about the study outcomes. This approach respects participants' contributions and supports knowledge sharing within the professional community. The following measures will achieve this: a concise summary (4-5 pages) of key findings, recommendations, and implications will be prepared specifically for participants. The report will be written in accessible language, avoiding excessive academic jargon. It will include visual elements to illustrate the main findings. This will be emailed to all participants within 3 months of study completion.

Participants will be offered the option of a one-on-one discussion about the findings. This provides an opportunity to discuss specific implications for their firm or practice. These sessions will maintain confidentiality while allowing for personalised feedback.

With the participant's permission, the findings will be shared through relevant professional bodies. This extends the research's impact while acknowledging the participants' contributions. Any public dissemination will maintain participant anonymity as agreed in consent forms.

3.8. Limitations of the Study

While the chosen methodology was designed to provide a deep, phenomenological understanding of the research problem, the following limitations must be acknowledged.

3.8.1. Non-Generalisability of Findings

Due to the qualitative nature of this study and the small sample size (n =10), the findings cannot be statistically generalised to the entire South African built environment. The results represent a snapshot of the lived realities of specific Black architectural and landscape architectural practitioners and may not account for the experiences of firms in different geographical regions or larger-scale practices.

3.8.2. Referral Bias

The use of snowball sampling as a secondary technique introduces the risk of homophily he tendency of participants to refer peers with similar professional

backgrounds or shared ideological views. While the researcher mitigated this by using maximum variation criteria selecting from different provinces and sectors, the sample may still reflect the perspectives of a specific, interconnected professional network.

3.8.3. Survivor Bias in the Sampling Frame

The sampling frame was derived from official registries SACAP and SACLAP. This creates a survivor bias as the study captures the views of those who have successfully navigated the barriers to professional registration. The perspectives of practitioners who exited the profession or remained unregistered due to the very 'vicious cycle' under investigation may be under-represented.

3.8.4. Researcher Subjectivity

As an active owner of a micro-firm within the sector, the researcher's own experiences may influence the interpretation of data. Although bracketing and reflexive journaling were employed to maintain objectivity, the dual role of 'researcher' and industry peer remains an inherent subjective limitation of the study's interpretive design.

3.9. Conclusion

In summary, this methodological framework is specifically designed to navigate the complex socio-economic landscape of the South African built environment. By anchoring the study in an interpretivist paradigm and a phenomenological strategy, this research moves beyond surface-level statistics to capture the "lived reality" of Black-owned architectural and landscape firms. This approach is essential for uncovering the nuanced, often systemic barriers to innovation that a purely quantitative study might obscure.

The integration of purposive sampling and semi-structured interviews ensures that the data is both representative and deeply contextualised. At the same time, Braun and Clarke's thematic analysis provides a transparent, rigorous roadmap for transforming raw narratives into actionable insights. While the study acknowledges the boundaries of non-generalizability, the emphasis on reflective practice ensures that the findings remain credible and authentic.

Ultimately, this methodology does more than collect data; it provides a robust, ethical, and culturally sensitive lens for identifying transformative pathways toward open innovation. It sets the stage for meaningful contributions that are not only theoretically

sound but practically essential for fostering a more inclusive and sustainable architectural sector in South Africa.

CHAPTER 4
DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1. Introduction

This chapter presents, analyses, and interprets the empirical data generated for this study. The findings are based on data collected from 10 purposively selected participants, comprising architects, landscape architects, candidate professionals, and practitioners working across both the private and public sectors. These participants engaged in in-depth, semi-structured interviews that provided rich qualitative insights into the innovation barriers faced by small, Black-owned architectural and landscape architecture firms in South Africa. The interviews were transcribed and analysed using Braun and Clarke's (2006) six-phase thematic analysis process, ensuring a systematic and rigorous approach to coding, theme generation, and interpretation (Braun & Clarke, 2006).

Through this analysis, a set of dominant and cross-cutting themes emerged, reflecting participants' lived experiences, professional constraints, and strategic adaptations in the built environment sector. These themes serve as the subheadings for this chapter and as the structural backbone for presenting the data. Each theme is supported by detailed interpretations, illustrative excerpts, and links to relevant literature, thereby deepening analytical coherence.

In addition to interview data, the chapter integrates documentary analysis, including policy frameworks, professional council guidelines, and industry reports, to contextualise the empirical findings within the broader regulatory and institutional environment. This triangulated approach enhances the validity of the interpretation and highlights the systemic factors influencing innovation practices within the sector (Creswell & Clark, 2011).

The chapter is organised as follows: it begins with background information, followed by the development of themes derived from interviews with architects and landscape architects. Additionally, it includes a documentary analysis and concludes with the presentation of findings.

4.2. Demographics

The demographic characteristics of the participants involved in the subsequent sections are described. The profile captures both personal and professional variables, including race, gender, professional experience, and academic qualification. In total, ten individuals participated in the semi-structured interviews, representing a diverse group of architects, landscape architects, and candidate or emerging professionals. The demographic data provide important contextual grounding for understanding participants' perspectives and how their backgrounds may influence their experiences within the architectural and landscape architectural sectors (Saunders, Lewis & Thornhill, 2019).

Table 4: Interviewee Profile

Participant Code	Gender	Length of Interview	Role	Geographic Location	Organisation Size	Ownership Status
P1	Female	41:23 min	Candidate Landscape Architect	Gauteng	Small practice: 4 - 10 employees	Not an Owner
P2	Male	54:00 min	Professional Landscape Architect	Gauteng	Public sector: large national governmental organisation	Public sector: Government employee
P3	Female	38:00 min	Candidate Landscape Architect and entrepreneur	Western Cape	Small practice: 4 - 10 employees	Not an Owner
P4	Female	24:24 min	Landscape Architect Student & Freelancer for a property developer	Gauteng and Eastern Cape	Small practice: 4 - 10 employees	Not an Owner
P5	Female	31:98 min	Co-Owner of a nonprofit & Freelancer. Professional Landscape Architect	Gauteng	Small practice: 4 - 10 employees	Co-Owner
P6	Male	17:46 min	Professional Landscape Architect and part-time employee	Western Cape	Micro practice: Independent or sole practitioners (1–3 employees)	Owner
P7	Female	35:20 min	Professional Landscape Architect	Gauteng	Public sector: large national governmental organisation	Public sector: Government employee
P8	Female	28:12 min	Candidate Architect	Gauteng	Public sector: large provincial governmental organisation	Public sector: Government employee
P9	Male	35:36 min	Landscape architectural intern	Western Cape	Small practice: 4 - 10 employees	Not an Owner
10	Male	37:21 min	Professional Architect	Gauteng	Large firm: More than 50 employees	Not an Owner

Where appropriate, quantitative descriptors such as frequencies and percentages are used to summarise demographic patterns across the sample. However, consistent with the qualitative nature of the study, demographic information is primarily employed to enhance interpretive depth rather than to support statistical generalisations (Saunders et al., 2019). The professional attributes, including participants' roles, practice contexts, and years of experience, further help situate the thematic analysis

within the realities of South Africa's built environment professions. These demographic insights collectively support a nuanced understanding of the varied experiences, constraints, and opportunities encountered by small Black-owned firms and emerging professionals in the sector (Saunders et al., 2019).

4.3. Data Saturation and Participant Profile

While the study initially identified a potential pool of 14 participants, the final sample consisted of ten (10) information-rich practitioners. In qualitative research, the adequacy of the sample is not determined by a percentage-based 'response rate,' but by achieving thematic saturation (Braun & Clarke, 2021).

The researcher determined that the sample of ten participants provided sufficient Information Power (Malterud et al., 2016) to address the research questions for several reasons. First, the participants represented a strategic cross-section of the South African built environment, from micro-firm owners to public-sector officials. Second, by the eighth interview, redundancy was reached, with no new conceptual categories emerging regarding the 'Vicious Cycle of Exclusion.' The final two interviews served to verify and refine these existing themes. Consequently, the depth and quality of these narratives provided a robust empirical basis for the study, prioritising the analytical density of the findings over statistical volume.

4.4. Gender of Respondents

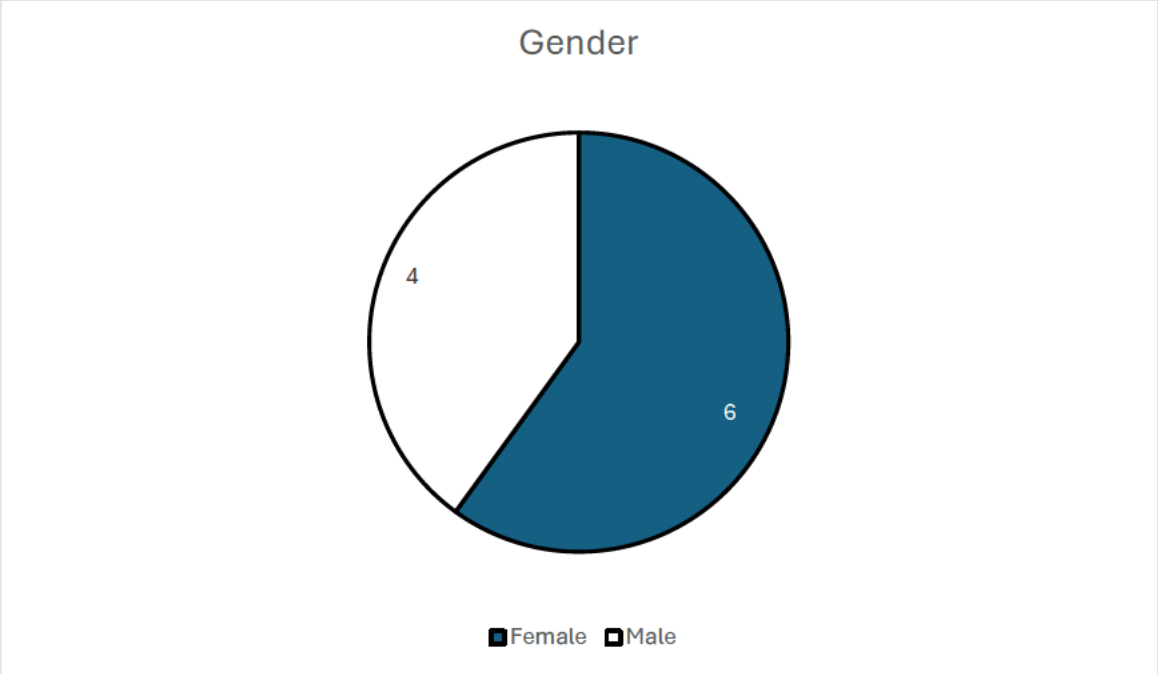


Figure 1: Gender of Respondents

The gender distribution of the participants reflects a notable shift in the built environment professions. Of the ten interviewees, six identified as female and four as male, indicating a higher representation of women in the sample. This is particularly significant in the context of South Africa's broader transformation agenda for the built environment sector. According to the Council for the Built Environment (CBE), women, especially Black women, remain historically underrepresented across professional councils, including SACLAP and SACAP, as well as related disciplines, despite gradual increases in recent years (CBE, 2021). The predominance of female participants in this study therefore suggests a growing presence and visibility of women within architecture and landscape architecture, aligning with national imperatives to promote gender equity, professional diversity, and inclusive participation in the sector (CBE, 2023). Moreover, this representation contributes to a more nuanced understanding of the barriers and opportunities that women face in the profession.

4.5. Organisation Size

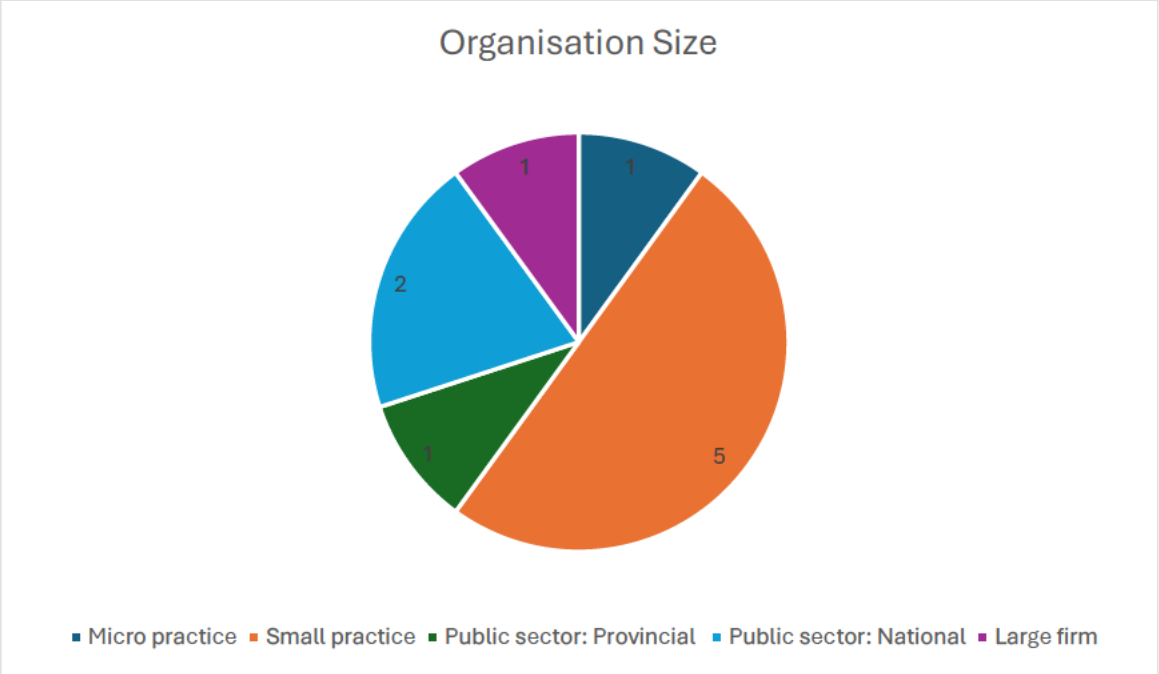


Figure 2: Organisation Size

Interviewees were drawn from a range of organisational contexts within the built environment, including a micro private practice (1), small private practices (5), provincial public-sector organisations (2), and a large firm (1). This classification reflects differences in organisational scale, resource availability, institutional structure, and operational context, as outlined by the Council for the Built Environment (CBE, 2025). Including these categories enables the study to capture how innovation barriers may vary across firm sizes and types, particularly for small Black-owned practices, which are the primary focus of this research (CBE, 2025).

4.6. Ownership Status

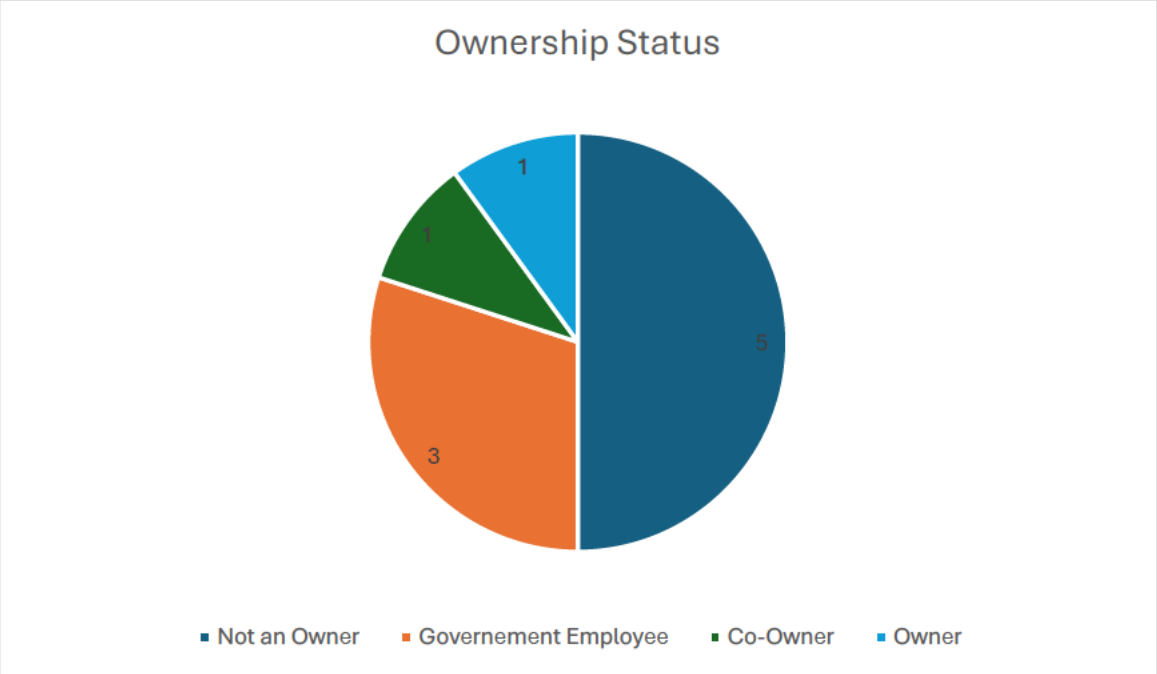


Figure 3: Ownership Status

Interviewees' ownership status varied, including not an owner (5), government employees (3), co-owner (1), and owner (1). This classification highlights the diversity of decision-making authority and responsibility within the organisations, which can influence access to resources, ability to implement innovative practices, and engagement in strategic decision-making (CBE, 2025). Including ownership status in the demographics allows the study to examine how innovation barriers may differ depending on whether an individual holds ownership or managerial responsibility, particularly for small Black-owned practices, which are the focus of this research (CBE, 2025).

4.7. Relationship between organisation size and ownership

Table 5: Relationship between organisation size and ownership

Organisation Type	Ownership Status	Notes
Small practice (4–10 employees)	Not an Owner	4 interviewees
Small practice (4–10 employees)	Co-Owner	1 interviewee
Micro practice (1–3 employees)	Owner	1 interviewee
Public sector (large national/provincial)	Government employee	3 interviewees
Large firm (>50 employees)	Not an Owner	1 interviewee

Interviewees represented a range of organisational sizes and ownership statuses within the built environment. Micro practices (1–3 employees) were represented by owners, reflecting the sole or independent management typical of very small firms. Small practices (4–10 employees) were predominantly expressed by non-owners (4), with one co-owner, indicating a mix of operational roles and shared decision-making responsibilities. Large firms (>50 employees) and public-sector organisations (provincial and national) were represented by employees without ownership, reflecting hierarchical structures where strategic authority is limited. This relationship between organisation size and ownership status highlights differences in decision-making autonomy, access to resources, and capacity to implement innovations (CBE, 2025). Capturing both organisational size and ownership allows the study to examine how innovation barriers may vary across different contexts, particularly for small Black-owned practices, which are the focus of this research.

4.8. Relationship between organisation size and ownership

Table 6: Relationship between organisation size and ownership

Organisation Size	Roles Observed	Notes
Micro practice (1–3 employees)	Professional Landscape Architect and part-time employee	Only 1 participant (P6), owner-managed, dual role as practitioner and entrepreneur
Small practice (4–10 employees)	Candidate Landscape Architects (P1, P3), Landscape Architect Student/Freelancer (P4), Co-Owner & Freelancer (P5), Landscape architectural intern (P9)	The majority of participants are early-career or in dual roles; only one is a co-owner
Public sector (national/provincial)	Professional Landscape Architect (P2, P7), Candidate Architect (P8)	Employees in hierarchical structures, representing institutional roles
Large firm (>50 employees)	Professional Architect (P10)	Employee, not owner, senior professional role, but within a structured corporate setting

Analysis of participants' roles in relation to organisation size reveals clear patterns. Early-career roles, including candidates, interns, and students, were primarily found in small practices (4–10 employees) and were often without ownership. Additionally, professional roles were observed across public-sector organisations and large firms, reflecting structured employment contexts. Ownership or co-ownership was concentrated in micro and small practices, indicating greater autonomy in decision-making within smaller organisations. Participants in small- and micro-practices also frequently held dual roles, such as freelancing or part-time work, highlighting the flexible nature of their responsibilities. This relationship between role, organisation size, and ownership status is significant for understanding potential innovation barriers, as autonomy, experience, and organisational structure all influence access to resources and the ability to implement change (CBE, 2025).

In summary, the sample of interviewees reflects a diverse cross-section of the built environment sector in South Africa, spanning micro, small, large, and public-sector organisations, as well as a range of ownership statuses and professional roles. Ownership was concentrated in micro and small practices. At the same time, early-career and professional roles were predominantly found in small, large, or public-sector organisations, highlighting the influence of organisational structure on

autonomy and decision-making. This demographic profile provides a foundation for understanding how innovation barriers may vary across different organisational contexts, ownership levels, and professional experiences. Building on these insights, the next section presents the key themes that emerged from the interviews, capturing the challenges, opportunities, and patterns related to innovation in small Black-owned architectural and landscape architectural practices.

4.9. Themes

Building on participants' demographic profiles, this section presents the key themes that emerged from the interviews, highlighting recurrent patterns and insights on innovation barriers and enablers in South African architectural and landscape architectural practices. A theme is a recurrent, patterned meaning that captures something essential about the phenomenon under investigation and links directly to the research questions (Creswell, 2018). Themes emerge from the systematic grouping of coded data segments that share similar concepts, allowing the researcher to move from raw textual material to higher-order interpretations (Creswell, 2018).

The process of identifying themes this study included familiarisation reading and re-reading transcripts to gain an overall sense of the data followed by initial coding assigning labels to meaningful units of text words, phrases, sentences and the developing a thematic grid arranging potential themes as columns and each data source as a row, noting the methodology used alongside the codes (Saunders et al., 2019).

This matrix helped visualise which themes were widely supported across sources and where contradictions or gaps existed. Themes were then refined by comparing the coded excerpts to assess consensus, contradictions, and the strength of the evidence (Saunders et al., 2019). Overlapping codes were merged, broad codes split, and weak codes discarded, resulting in a final set of themes that were internally coherent and externally relevant. Linking to theory was achieved by articulating how each theme relates to existing literature and theoretical constructs, and by providing an evidence-based evaluation of the study’s contribution (Creswell, 2018).

This study synthesises interviews with 10 participants across the private, public, and non-profit sectors to interrogate the barriers and enablers of innovation in South

African architecture and landscape architecture. Innovation is viewed as a systemic, cultural, and institutional process shaped by funding flows, collaboration norms, client biases, regulatory frameworks, mentorship, internal capacity, and awareness of open innovation (Radziwon & Vanhaverbeke, 2024).

Table 7: Key Themes and Sub-Themes

Key themes	Sub-themes
Key theme 1 **Access to Funding**	1. Survivalism vs. Innovation 2. The Policy-Practice Gap 3. The Administrative Burden of Alternative Funding
Key theme 2 **Collaboration Challenges**	1. Fragmented Internal Workflows 2. The Echo Chamber and Hierarchical Exclusion 3. Geographic and Intellectual Isolation 4. The Reliance on Homogenous Micro-Networks
Key theme 3 **Client Bias and Exclusion**	1. The Racialised Echo Chamber: Closed Client Networks 2. Seniority as a Proxy for Risk Aversion 3. The Aesthetic Overwrite: Wealthy Clients and Sustainability 4. The Credibility Gap: Racial Bias in Selection 5. Budget and Approval as Tools of Suppression
Key theme 4 **Regulatory and Policy Barriers**	1. The Passive Role of Statutory Bodies: Compliance over Enablement 2. Bureaucracy as Exclusion: The Procurement Filter 3. The Financial Weight of Professionalisation 4. Policy Lag and the Stagnation of Design Standards
Key theme 5 **Networking & Mentorship**	1. The "Exclusionary Club": Racially Homogenous Networks 2. Mentorship as Professional Currency 3. Cultural Enablers: The Role of Supportive Managers 4. Bridging the Gap through Academic Micro-Networks
Key theme 6 **Internal Capacity & Skills**	1. The Mentorship Gap: Knowledge as a Private Privilege 2. The Academic-Practice Mismatch: Producing Designers, Not Practitioners 3. The Digital Lag: Financial Barriers to BIM and R&D

	4. Professional Siloing and Restricted Project Lifecycles
Key theme 7 **Open Innovation Awareness**	1. Innovation as Survival and Adaptation 2. Innovation as Cultural and Social Transformation 3. The Ethical Imperative: Ecological Responsibility 4. Technical Awareness: BIM and Adaptive Navigation

4.9.1. Access to Funding

Access to funding emerged as the most pervasive and critical barrier to innovation, functioning as a gatekeeper to all other forms of professional development. The analysis moves beyond treating money as a mere operational requirement; it reveals that financial capital is the fundamental enabling condition for the "slack" required for innovation.

4.9.1.1. Survivalism vs. Innovation

The primary pattern identified is a stark negative correlation between financial strain and innovation capacity. Participants described a reality in which budget constraints force firms into a "survivalist mode," effectively eliminating the cognitive and temporal space needed for non-billable, exploratory work.

Participant 01 explicitly noted that financial strain led to reduced staff and limited hours, which directly stifled "risk-taking and the generation of new ideas." This was echoed by Participant 10, who remarked that despite having the leadership and skills to innovate, the "only red tape was the money," suggesting that ambitious concepts are routinely reduced to low-cost, low-innovation executions due to capital flight.

This confirms the "Resource Scarcity" dimension of the conceptual framework. Innovation in the built environment is not a cost-free exercise; it relies on Building Information Modelling (BIM) systems and R&D. As Participant 08 argued, "without the budget, certain things are never done." This suggests a systemic knowledge gap is being created not by a lack of talent, but by the inability to fund the tools of modern practice.

4.9.1.2. The Policy-Practice Gap: Education vs. Entrepreneurial Support

A significant sub-theme emerged regarding the misalignment of existing support structures. While participants acknowledged the role of B-BBEE-supported bursaries in entering the profession, there was a consensus that this support vanishes once a practitioner enters the entrepreneurial phase.

Participant 07 observed that while bursaries helped at the "feeder school" level, these opportunities have diminished and do not translate into practice-level support. This is compounded by the high fixed costs of professional life. Multiple participants highlighted that high registration fees and Continuous Professional Development (CPD) costs act as a financial filter.

Following Mafundu and Mafini (2019), these costs restrict young Black professionals from participating in the very micro-networks where collaborative innovation occurs. This creates a Participation Barrier, in which professional capital is reserved for those who can afford the high cost of entry to professional bodies.

4.9.1.3. The Administrative Burden of Alternative Funding

For firms attempting to bypass traditional bank loans through grants or public agencies, a new set of Administrative Barriers emerges. The data suggest that public mechanisms such as the National Youth Development Agency (NYDA) and Sector Education and Training Authorities (SETAs) are theoretically promising but practically ineffective due to bureaucratic friction.

Participant 05 (Non-profit) highlighted that accessing grants requires a "specialised, time-intensive skill" that small firms lack. Furthermore, grant conditions often require finished products rather than "experimental concepts," actively discouraging high-risk innovation.

Participant 09 shared a critical anomaly attempting to use a Department of Trade, Industry and Competition (DTIC) initiative that was "primarily agriculture-focused" and poorly aligned with landscape architecture.

This reveals a systemic failure by funding bodies to understand the unique, sector-specific needs of the built environment. As Meng and Brown (2018) argue, the existence of agencies is not a solution if the execution of their mandates creates more red tape for the small firms they are intended to serve.

4.9.1.4. Funding as the Systemic Bottleneck

The findings present a unified picture that financial constraint is the primary inhibitory factor in the Vicious Cycle of Exclusion. The reliance on unstable grants and limited professional fees creates an environment where "True Open Innovation" is inaccessible.

The findings regarding chronic cash flow volatility as a barrier to R&D align with Radziwon and Vanhaverbeke (2022), who argue that the liability of smallness is primarily a resource deficit. However, this study extends that theory by showing that in the South African context, this is not merely a lack of capital but a Structural Trap where the survival-innovation trade-off is enforced by a history of economic exclusion

4.9.2. Collaboration Challenges

Collaboration in the built environment is traditionally viewed as a fluid exchange of ideas. However, for the participants in this study, collaboration emerged as a significant structural barrier. The findings reveal an environment where professional interaction is often restricted, superficial, or structurally impossible, effectively stalling the engine of open innovation.

4.9.2.1. Fragmented Internal Workflows

The data suggests that internal collaboration is often the first casualty of operational instability. In small and non-profit contexts, flexibility is not a strategic choice but a reactive coping mechanism for under-resourced firms.

Participant 05 highlighted a reliance on asynchronous, fragmented workflows because team members often work at different hours due to external commitments and volatile grant funding. While this enables basic functioning, it strips away the synchronous, spark-generating interactions that drive creative problem-solving (Sexton & Barrett, 2003).

This fragmentation confirms that innovation requires relational stability. When compensation is tied to unpredictable grant cycles, morale suffers, and the long-term, trust-based relationships necessary for complex, innovative work struggle to form. Internal collaboration becomes fragile, relegated to a luxury that survivalist firms cannot always afford.

4.9.2.2. The "Echo Chamber" and Hierarchical Exclusion

Exclusionary communication practices were identified as a dominant pattern, manifesting in two forms: Professional Exclusion within peer networks and Hierarchical Exclusion within client relationships.

Closed Peer Networks, as expressed by Participants 02, 06, 07, and 10, were described as "closed-loop ecosystems" in which established individuals dominate events. As Vilakazi and Bosiu (2025) suggest, this creates an echo chamber where small, Black-owned firms are culturally and structurally pushed to the periphery.

A recurring frustration was the way developers treated the production staff. Participants 03 and 09 noted that clients often have fixed ideas and prefer safe, conventional solutions to minimise risk.

This excludes the professional from the conceptual phase, the very space where innovation occurs. By treating architects and landscape architects as transactional executors rather than intellectual partners, the creative process is stripped of the collaborative dialogue required for innovation (Nduro & Duodu, 2025).

4.9.2.3. Geographic and Intellectual Isolation

While digital tools exist, the "Remote Work" barrier for these firms is primarily a resource constraint. For small practices, distance is a financial calculation.

Participants 02, 03, and 06 stated that they frequently miss conventions and professional networking events due to time constraints or travel costs. Unlike large firms that can absorb these expenses, small firms are geographically bound. This physical isolation translates directly into intellectual isolation, as they are cut off from the micro-networks that facilitate knowledge transfer and mentorship.

4.9.2.4. The Reliance on Homogenous Micro-Networks

A critical finding is the disconnect between the need for cross-disciplinary diversity and the reality of survivalist networking.

Participant 05 admitted to a heavy reliance on "personal networks" comprising friends, family, and peers, because they lack access to broader industry circles. While these networks feel "safe," they lack the diversity of thought required for built-environment innovation.

This creates a paradox: innovation requires weak ties to diverse experts, yet financial precarity forces firms to rely on "strong ties" to know peers. This reliance narrows the firm's innovation horizon, locking it into a cycle of repetitive, safe, low-innovation work (Durst et al., 2013).

4.9.2.5. The Intersection of Funding and Collaboration

There is a direct, symbiotic link between Funding and Collaboration. When funding is unstable, teams cannot synchronise; when teams cannot synchronise, they cannot build the diverse partnerships required to secure better funding.

4.9.3. Client Bias and Market Exclusion

The findings reveal that the client-professional relationship is not a neutral commercial exchange but a site of significant systemic exclusion. Client bias functions as a multi-layered filter comprising racial, generational, and aesthetic preferences that effectively render Black-owned and emerging firms invisible to the dominant market, regardless of their technical or innovative capacity.

4.9.3.1. The Racialised Echo Chamber: Closed Client Networks

The data identifies a limited client ecosystem that largely perpetuates historical socioeconomic patterns. Participants 06, 08, and 09 described a "closed feedback loop" in which project access flows through networks structured along racial lines.

This indicates that exclusion is not merely about a lack of qualifications; it is about a lack of social capital (Bosiu et al., 2020). As established white firms continue to service an established white client base, Black practitioners find it nearly impossible to penetrate these networks organically. Conversely, Participants 04 and 05 noted that inclusion often requires a conscious, race-aware decision by Black clients or B-BBEE-mandated entities. This proves that standard market dynamics are exclusionary by default, requiring deliberate intervention to create opportunities for Black professionals.

4.9.3.2. Seniority as a Proxy for Risk Aversion

A pervasive pattern identified is the client's preference for "seniority" and long-established track records. Participants shared that clients frequently bypass junior or emerging practitioners, equating age and firm history with reliability.

This preference acts as a proxy for extreme risk aversion. It creates a paradoxical barrier where emerging firms, which are often more technologically agile or sustainably focused, cannot build the very track record required to win high-profile work. By valuing longevity over novelty, the market reinforces professional conservatism and shuts out diverse, innovative voices that lack the institutionalisation of older, established practices.

4.9.3.3. Wealthy Clients and Sustainability

The data indicate a clear conflict of values between professional innovation and client control, particularly in high-end private development.

Participants 01 and 05 reported that sustainable or ecologically innovative solutions are frequently rejected if they conflict with the client's preferred aesthetic. Wealthy clients often use their significant capital to bypass environmentally responsible choices without consequence.

This confirms that financial control directly translates into design control (Gambatese & Hallowell, 2001). Innovation in the built environment is largely driven by client whim rather than professional expertise or societal need. When the client's cultural and financial priorities favour conventional, high-cost aesthetics, the professional's ability to drive social or ecological innovation is effectively neutralised.

4.9.3.4. The Credibility Gap: Racial Bias in Selection

Racial bias establishes a hierarchy where Black professionals enter client relationships with a pre-existing credibility gap. Participants 06, 08, and 09 shared experiences of being undermined in meetings or facing systemic stigmas linked to historical inequities.

Following Mafundu and Mafini (2019), Black practitioners are compelled to prove themselves significantly more than their white counterparts. This systemic deficit of trust means practitioners must expend vital energy fighting prejudice and asserting their authority before they can even begin to propose innovative ideas. Furthermore, the strategy of racial matching, assigning Black professionals only to Black clients, serves to silo these practitioners into a smaller market segment, preventing them from competing openly in the wider economy.

4.9.3.5. Budget and Approval as Tools of Suppression

While often framed as technical or financial constraints, the data suggests that budget and approval rigidities are frequently used as tools for risk management and control within the Private Sector developers impose tight constraints to prioritise speed and predictability, systematically eliminating time-intensive or untested innovative solutions. And within the Public Sector, institutionalised bureaucracy and rigid tender processes lead to indirect exclusion, as the rules of the game favour large incumbents over smaller, more diverse firms (Nel & Masilela, 2020).

4.9.3.6. The Market-Imposed Ceiling

The client base represents the ultimate ceiling for innovation in small, Black-owned firms. This exclusion is not a matter of internal capacity but a matter of market opportunity. The findings reveal a three-fold exclusion: Structural Exclusion, in which closed racialised networks deny access. Hierarchical Exclusion: Preferences for seniority deny track-record building; lastly, Conceptual Exclusion: Risk aversion and aesthetic priorities deny creative freedom.

The Credibility Gap, identified by participants, validates the work of Aigbavboa and Thwala (2014), who noted that established networks in the built environment often function as exclusionary clubs. The data suggest that client risk aversion acts as an Innovation Veto, a concept that complicates standard Open Innovation (OI) models (Chesbrough, 2003), which assume a neutral market in which the best ideas are naturally adopted.

4.9.4. Regulatory and Policy Barriers

Regulatory and policy-related challenges emerged as multi-layered constraints that do not merely oversee the profession but actively shape the limits of what is possible for Black-owned practices. The findings reflect a significant misalignment between policy intention, such as transformation and public protection, and the lived reality of implementation, which often prioritises rigid compliance over innovation and equity.

4.9.4.1. The Passive Role of Statutory Bodies: Compliance over Enablement

A dominant pattern in the data is the perception of statutory bodies, such as SACAP and SACLAP, as passive gatekeepers. While their mandate is to protect the public, participants 02, 03, 04, and 07 argued that this focus is too narrow, neglecting the proactive role of fostering professional growth and equitable practice.

Participant 07 noted that while SACLAP enforces compliance, it fails to provide guidance on the business practices necessary for a firm's economic survival. This passivity extends to social justice; Participant 03 highlighted the absence of policies to prevent racial pay disparities or ensure fair compensation for emerging professionals.

By failing to establish minimum standards for fair labour and practice management, statutory bodies inadvertently allow for the continued economic exploitation of emerging Black professionals. This confirms the Institutional Gatekeeping dimension of the conceptual framework, where the rules of the game protect the status quo rather than enabling the transformation they are theoretically designed to support.

4.9.4.2. Bureaucracy as Exclusion: The Procurement Filter

The procurement process emerged as a site of institutionalised risk aversion. Participants 01, 02, 08, 09, 10 described how complex Supply Chain Management (SCM) and Bid Adjudication (BAC) processes create a structural bias against small firms.

Participant 02 detailed the extensive risk assessments and bureaucratic procedures that favour large firms with specialised administrative staff. Furthermore, Participant 08 observed that these processes often prioritise legal paperwork over technical proficiency. This results in the selection of teams that are "compliant on paper" but may lack the modern skills, such as BIM proficiency, required for innovative delivery.

The Policy-Practice Gap is most visible. B-BBEE, the primary tool for transformation, is frequently reduced to a compliance formality or, as Participant 02 warned, a potential site for corruption. This gap neutralises the policy's potential to drive innovation, as firms are forced to spend their limited resources on administrative navigation rather than technical R&D.

4.9.4.3. The Financial Weight of Professionalisation

The cost of maintaining professional status creates a direct barrier to participation, as noted in Theme 1 (Funding). Participants 03 and 04 emphasised that high registration and membership fees disproportionately impact young Black professionals.

The high cost of remaining legally compliant acts as a disincentive to professionalisation. When emerging practitioners are forced to choose between

financial stability and full participation in professional bodies, the sector's diversity of fresh talent is restricted. This limits the very pool of professionals required to drive long-term innovation in the built environment (Radziwon & Vanhaverbeke, 2024).

4.9.4.4. Policy Lag and the Stagnation of Design Standards

A critical sub-theme is the "Policy Lag," in which regulations fail to incorporate modern practices such as sustainable design. Participants 03, 06, and 08 argued that because ecological requirements for water harvesting are not mandatory, clients can opt for unsustainable solutions without consequence.

Participant 08 highlighted that insufficient funding for government agencies prevents necessary policy updates, creating a feedback loop where outdated rules impede modern practice. Participant 06 added that local urban design guidelines often require time-consuming adaptations, adding constant, small-scale friction to project delivery.

This systemic inertia means that regulation facilitates the status quo rather than compelling innovation. As Whyte and Sexton (2011) suggest, when policy is stagnant, it becomes an active barrier to change, freezing the industry in time and penalising firms that attempt to implement forward-thinking, sustainable solutions.

4.9.4.5. Friction as a Structural Mandate

This theme demonstrates that the regulatory environment functions less as a framework for innovation and more as a tool for maintaining systemic hierarchy. The barriers identified are not merely administrative; they are legislative mandates that value rigid compliance over transformation.

By addressing Research Question 4, this theme confirms that the "Vicious Cycle of Exclusion" is codified in the very laws and bodies meant to regulate the profession. For Black-owned firms, the challenge is not just winning work but navigating a regulatory landscape that is strategically misaligned with the needs of emerging, innovative practices.

The "Passive Role" of statutory bodies like SACLAP aligns with Mokoena's (2025) critiques of the disconnect between transformation policy and practice-level friction. The findings suggest that Institutional Inertia is a more significant barrier than a lack of policy, as the high cost of compliance acts as a regressive tax on emerging Black-owned firms.

4.9.5. Networking and Mentorship

The data for Theme 5 reveals a profound reliance on informal, personal networks and mentorship as the primary avenues for opportunity and knowledge transfer. In a professional landscape characterised by racial exclusion and closed systems, the quality and accessibility of these relationships often function as the ultimate gate to both innovation and professional growth.

4.9.5.1. The "Exclusionary Club": Racially Homogenous Networks

The findings indicate that existing professional networks are far from neutral marketplaces; they operate as racially homogenous "closed systems." Participant 01 described these networks as being dominated by established, typically white professionals, requiring high levels of pre-existing professional capital to enter.

This systemic closure prevents new firms and diverse talent from accessing the project leads and industry intelligence necessary for innovation. Even when Black professionals are included, Participant 01 noted that they are often relegated to outsourcing or minimal-knowledge-transfer roles. This reduces their participation to a compliance exercise rather than a true partnership, linking back to the Structural Exclusion identified in Theme 3. Consequently, as Participant 05 discussed, firms are forced to rely on their immediate, often homogenous personal contacts, which restricts the influx of cross-disciplinary ideas crucial for cutting-edge design.

4.9.5.2. Mentorship as Professional Currency

Given the passive role of statutory bodies like SACLAP, which focus on compliance rather than business support, informal mentorship has moved from being a nice-to-have to a vital professional currency.

Participants 06 and 07 emphasised that mentors are essential for navigating the complex professional landscape, providing tactical advice on fees, scope creep, and contract management. Mentorship is positioned to bypass the closed-network barrier. In an exclusionary environment, an established mentor provides the borrowed credibility that a small, Black-owned firm may currently lack in the eyes of risk-averse clients.

4.9.5.3. Cultural Enablers: The Role of Supportive Managers

The most impactful innovation typically occurs within specific, supportive organisational cultures where senior staff act as internal sponsors. Participants 09 and

10 highlighted that these sponsors shield emerging professionals from the financial and client risk aversion seen in the wider market, providing the safe space and budget needed for experimentation.

This suggests that transformation is often driven from the bottom up through individual advocates rather than formal systems. As Participant 06 noted, this support often extends beyond technical advice to include emotional and cultural support, which is necessary to navigate the systemic challenges of racial bias. This confirms that a supportive culture is an essential precondition for fostering risk-taking in design (Gambatese & Hallowell, 2011).

4.9.5.4. Bridging the Gap through Academic Micro-Networks

Collaboration with universities and students emerged as a critical micro-network that is often more accessible and less exclusionary than mainstream industry platforms. Participant 05 used these collaborations to gain fresh perspectives and “give back" to the community, effectively creating a pipeline for future talent.

While the desire to bridge the academic-industry gap is high, Participant 06 noted that financial and time constraints discussed in the funding theme often limit a firm's capacity to engage in full research partnerships. Despite these limits, universities remain a key lever of transformation, serving as an alternative knowledge hub that bypasses traditional industry gatekeepers.

4.9.5.5. Networking as a Compensatory Act

This theme demonstrates that networking and mentorship in this context are fundamentally compensatory mechanisms. They exist not because the industry is functioning well, but because the formal financial, collaborative, and regulatory systems are failing (Barrett, 2021).

While Barrett (2021) characterises networking as a strategic choice for growth, the empirical evidence here suggests it is a Compensatory Mechanism for survival. This aligns with Lukhele and Soumonni’s (2020) "DUI" (Doing, Using, and Interacting) model, where innovation is driven by informal social capital rather than formal institutional support.

4.9.6. Internal Capacity and Skills Development

Internal capacity and skills development emerged as a significant theme influencing innovation readiness. Rather than a simple lack of talent, the data reveal a profound state of Capacity Vulnerability, a condition in which practitioners are technically proficient in design but systematically under-equipped to navigate the economic and regulatory complexities of the sector.

4.9.6.1. The Mentorship Gap: Knowledge as a Private Privilege

A key barrier identified is the absence of formalised guidance, which forces emerging professionals to rely on unstable, informal connections for essential knowledge transfer. Participants 01 and 07 described professional networks as "closed systems" in which critical information on fees, contracts, and project management is treated as a privilege of personal connection rather than a right of the profession.

Because statutory bodies like SACLAP focus primarily on compliance and public protection, they leave a critical void in practice management support. As Participant 09 noted, this lack of formal mentorship creates a "cycle of limited experience"; without a senior advocate to facilitate trust, junior practitioners are bypassed by clients, denying them the project leadership roles necessary to build an innovative track record.

4.9.6.2. The Academic-Practice Mismatch: Producing Designers, Not Practitioners

The academic curriculum was frequently criticised for failing to equip graduates with the practical, business-focused skills required for independent practice. Participant 04 highlighted a stark absence of training in professional registration, organisational structures, and legislative navigation.

Analytical Insight: Universities appear to prioritise design theory over the "operational survival skills" needed to navigate a complex regulatory environment (Mokoena, 2025). This results in a generation of practitioners who are unprepared for the realities of self-employment, including the financial modelling and governance required to sustain a firm. The lack of business education directly translates into reduced profitability, which, in turn, diminishes the firm’s capacity to invest in innovation.

4.9.6.3. The Digital Lag: Financial Barriers to BIM and R&D

The adoption of modern digital tools, such as Building Information Modelling (BIM), is a necessity for contemporary innovation, yet it is hindered by a Digital Lag rooted in resource constraints. Participant 08 noted that funding limitations directly prevent firms from investing in software licenses, specialist staff, and the time required for training.

This creates a technological capacity gap that is reinforced by procurement regulations. As Participant 02 observed, public-sector processes often fail to select for digital competence, allowing projects to proceed with outdated tools. This creates a Vicious Cycle in which limited funding prevents technology investment, which in turn limits the firm's ability to compete for high-value, digitally intensive projects that drive growth.

4.9.6.4. Professional Siloing and Restricted Project Lifecycles

Emerging Black professionals are often confined to execution-based roles, preventing them from gaining the holistic experience needed for project leadership. Participant 09 noted that clients' preference for established firms shuts out younger practitioners from the full project lifecycle.

This Professional Siloing is further exacerbated when Black professionals are engaged mainly for outsourcing or minimal knowledge transfer, as noted by Participant 01. By restricting practitioners to peripheral or purely production-based roles, the industry denies them the strategic decision-making experience required to graduate into independent, innovative practice leaders. This dependence on senior or differently qualified professionals hinders the practitioner's authority and independent growth.

4.9.6.5. From Talent to Institutional Neglect

The barriers identified in this theme culminate in a state of Capacity Vulnerability. When structured learning is absent, and the costs of professionalisation are high, the practitioner is forced to dedicate all resources to survivalist administration rather than creative development (Vosloo, 2017).

The Digital Lag in BIM adoption is not a result of technical inability, but of Capacity Vulnerability. This supports Vosloo's (2017) assertion that the professional environment forces small firms to prioritise administrative survival over creative development, leading to a state of Strategic Paralysis.

4.9.7. Open innovation awareness

The final theme reveals a sophisticated but frustrated awareness of Open Innovation (OI) principles. While few participants used the formal term "Open Innovation," their descriptions of knowledge sharing, external engagement, and cross-disciplinary learning align closely with OI theory. The core finding is that awareness exceeds capacity; participants possess a high-level vision of collaborative, ethical practice that is repeatedly stifled by the structural barriers identified in previous themes.

4.9.7.1. Innovation as Survival and Adaptation

For these practitioners, innovation is not defined by disruptive technology but by the pragmatic effort required to circumvent a hostile professional environment. Participants framed innovation as a tool for survivalist adaptation.

Participant 05, for instance, prioritised "practical innovation" and social impact over formal regulatory compliance. This suggests that for small, Black-owned firms, innovation is a context-specific strategy used to achieve project delivery despite the "red tape" of financial and regulatory limitations.

Innovation is thus a reactive force. It is defined not by what the designer wants to do, but by what the designer must do to overcome the market's demand for familiarity and the client's risk aversion. This confirms that the practitioner's innovative intent is frequently subordinated to external systemic constraints.

4.9.7.2. Innovation as Cultural and Social Transformation

Participants are clearly aware that innovation is a social activity that requires transcending disciplinary silos. Participants 02 and 06 emphasised that a cultural shift is needed to prioritise investment in research and Building Information Modelling (BIM) as strategic, financially supported activities.

The highest level of awareness identified in the data links innovation to social transformation. Participants recognise that the ability to innovate depends entirely on having access to inclusive networks. As established in Themes 2 and 5, if the network is closed, the innovation is strangled. Therefore, Open Innovation in this context is understood as an inclusive, collaborative process that requires disrupting existing inequalities in client decision-making.

4.9.7.3. The Ethical Imperative: Ecological Responsibility

A strong current of Value-Driven Awareness links innovation to ethical and environmental responsibilities, often in direct opposition to market forces. Participant 03 advocated for mandatory sustainable design requirements (such as water harvesting and ecological irrigation), suggesting that practitioners are technically ready to implement these solutions but are blocked by a lack of regulatory pressure on clients.

This reveals that for these professionals, Open Innovation is defined by its social and environmental impact. The frustration expressed by participants indicates that client priorities often focused on aesthetics and cost actively deprioritise ethical innovation. Consequently, the practitioner is forced into a role of moral critique, fighting the market to implement sustainable solutions.

4.9.7.4. Technical Awareness: BIM and Adaptive Navigation

Participants demonstrated a sophisticated understanding of specific tools, such as BIM, as mechanisms for collaborative efficiency. Participant 02 specifically noted that while awareness of BIM's benefits is high, its adoption is constrained by the financial constraints detailed in the Funding Theme.

Furthermore, regulations are viewed as constraints to be navigated. Participant 06 argued that regulatory frameworks, while challenging, can encourage adaptive and creative design solutions if approached strategically.

This Tactical Awareness shows that the barrier is not a lack of technical knowledge. Instead, as Participant 01 remarked, innovation flourishes when funding is sufficient. The firm's technical readiness is essentially banked or dormant, waiting for the financial and structural conditions that would allow for its full execution.

4.9.7.5. Awareness as a Socio-Economic Struggle

This theme highlights a profound paradox: practitioners possess a sophisticated, ethical, and collaborative vision of innovation, yet lack the agency to realise it. The findings suggest that Open Innovation is not just a management style for these firms; it is a socio-economic struggle to enact their professional expertise within a constrained landscape.

The empirical data gathered across these seven themes provides a comprehensive map of the "Vicious Cycle of Exclusion" as it is experienced by Black-owned design practices in South Africa. The findings transition from individual narratives of struggle to a systemic analysis of market failure and institutional neglect.

4.10. Synthesis of Findings

4.10.1. Addressing the Research Questions(RQ)

4.10.1.1. RQ1: Systemic, Financial, and Institutional Barriers

The data confirms that funding is the primary bottleneck of the innovation ecosystem. Without innovation-capable capital, firms are trapped in a state of survivalism where the slack required for R&D and experimentation is nonexistent. This is compounded by Client Bias, which creates an Innovation Ceiling by penalising novelty and rewarding historical seniority. These barriers are not isolated; they are systemic forces that render Black-owned firms invisible to high-value, innovation-heavy projects.

4.10.1.2. RQ2: Mentorship, Networks, and Collaborative Practices

The findings reveal that Collaboration and Networking currently function as compensatory mechanisms. Because formal systems are closed or exclusionary, practitioners must rely on informal social capital and micro-networks with universities. While mentorship is a vital professional currency, its informal nature means that access to opportunity remains a privilege of personal connection rather than a structural right. This limits the firm’s ability to engage in true Open Innovation, as they are often siloed into homogenous, low-resource circles.

4.10.1.3. RQ3: Policy, Procurement, and Regulatory Frameworks. Regulatory Barriers

Policies, procurement requirements, and regulatory frameworks serve as tools of professional conservatism. Current procurement frameworks prioritise administrative compliance over technical innovation, effectively favouring large, established incumbents. Furthermore, the Passive Role of statutory bodies and the Policy Lagin sustainability standards mean that the regulatory environment actively protects the status quo. Instead of enabling growth, the current policy landscape imposes "frictional costs" that disproportionately drain resources from small Black-owned firms.

4.10.1.4. RQ4: Strategies for Inclusive Transformation

The final analysis of Open Innovation Awareness and Internal Capacity suggests that the strategy for transformation lies in formalising the informal. Participants demonstrate a high ethical and technical readiness for innovation, such as BIM and sustainable design, that is currently dormant. To promote inclusive transformation, the built environment must shift from individual goodwill to structural mandates, such as Decoupling Credibility from Seniority by reforming procurement to value technical agility over historical scale. Funding the Ecosystem provides targeted innovation grants that move firms from survival to R&D. Legislating Innovation makes ecological and social innovation mandatory, thereby creating a market for the specialised skills these firms possess.

4.11. Structural Open Innovation Model for South African Landscape architectural and Architectural SMEs

4.11.1. Introduction and purpose

This conceptual model illustrates how open innovation among small, Black-owned practices in South Africa is primarily impeded by systemic and structural barriers rather than a shortage of professional skill. The model argues that financial scarcity is not just a budget issue; it is the central engine of an interlocking system that drains firm resources, reduces absorptive capacity, and reinforces market exclusion.

4.11.2. The Structural-Systemic Context

The outer layer of the model is the socio-historical framework of South Africa. As discussed in Themes 3 and 4, apartheid-era exclusion and concentrated market structures set the initial conditions for firm behaviour. This context dictates that firm-level choices are not purely the result of individual agency but are heavily mediated by institutional configurations that favour established, historically advantaged incumbents.

4.11.3. Funding Access as the Central Mechanism

At the core of the model sits Funding Access. The findings suggest that funding scarcity is the trigger for the subsequent exclusionary cascade. When firms lack stable capital, they are trapped in a short-term "Survival Mode." This forces a trade-off:

immediate operational needs (paying staff) are prioritised over long-term innovation enablers (BIM adoption or R&D). Without modest funding to buy time, SMEs cannot engage in the inbound knowledge flows required for Open Innovation.

4.11.4. The Resource and Capability Cycle (Internal Capacity)

As highlighted in Theme 6, funding scarcity directly erodes Internal Capacity. The pathway from Level 2 to Level 3 shows that when firms cannot afford specialist staff or software training, a persistent Absorptive Capacity Gap emerges. This gap undermines the firm's ability to assimilate external knowledge and deploy it in project delivery, making it less competitive for high-value, innovative tenders.

4.11.5. The Gatekeepers (Client Bias and Procurement Rules)

The model identifies a dual layer of exclusion at the project interface, Procurement and Compliance, through rigid bureaucratic requirements that act as a formal barrier. Time that could be spent on Experimental Innovation is instead redirected toward Compliance Administration. Clients hold the ultimate market power. Their preference for Seniority and Track Record creates a credibility catch-22, where Black-owned firms are denied the very projects, they need to build the record required for future work.

4.11.6. Compensatory Micro-Networks and Mentorship

When formal networks are closed, practitioners move to the periphery of the model, creating Compensatory Micro-networks. While these alumni ties and informal mentorships are vital for survival and basic knowledge sharing, the model illustrates that they rarely provide the Institutional Capital needed to break into mainstream client pipelines. They maintain the practice but do not enable a structural shift toward a sustained innovation ecosystem.

4.11.7. The Operational Barrier to Open Innovation

The final stage of the model addresses the Awareness-Agency Paradox. While participants demonstrate an intellectual commitment to Open Innovation, they lack the operational means to execute it. Open Innovation remains aspirational because the firm lacks the financial and institutional buffers required to run pilot collaborative projects or co-fund research.

4.11.8. The Vicious Cycle and Feedback Loops

The power of this model lies in its Feedback Loops. Funding scarcity reduces capacity; reduced capacity limits market access; limited market access results in lower revenue, which further deepens funding scarcity.

Unless interventions target the primary nodes, Funding Access and Procurement Reform, the system remains locked. This model demonstrates that for South African Black-owned SMEs, Open Innovation is not a choice to be made, but a structural threshold that can only be crossed once the "Vicious Cycle of Exclusion" is intentionally disrupted by policy and industry reform.

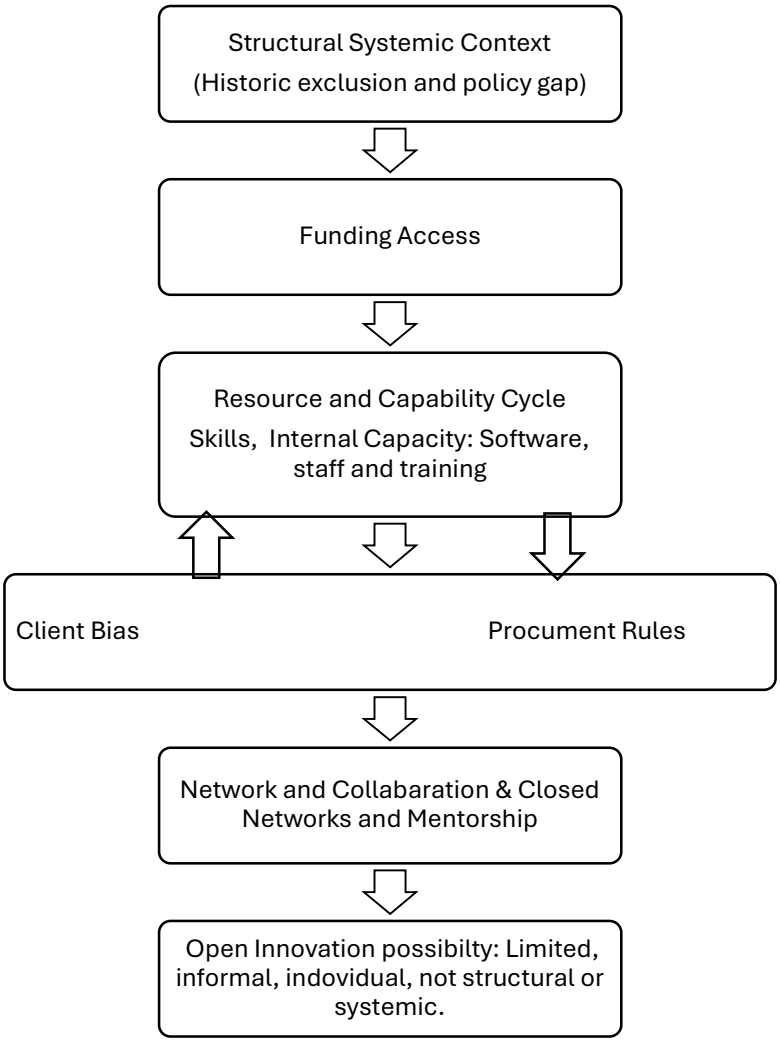
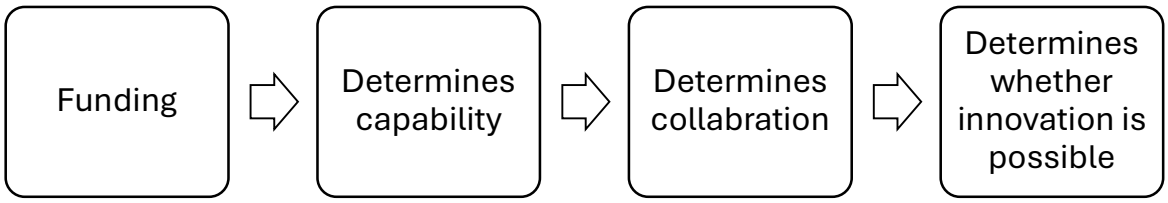


Table 8: Open Innovation Barrier Model for Black-owned Architectural Practices

Table 9: Core processes



4.12. Conclusion

This chapter has presented and analysed the empirical findings of the study, synthesised from in-depth interviews with ten information-rich professionals within the South African built environment. Moving beyond a descriptive account, the analysis utilised an abductive thematic approach to demonstrate that innovation within small, Black-owned architectural and landscape architectural firms is not restricted by a deficit of professional vision, but by a "Vicious Cycle of Exclusion" that is systemic and self-perpetuating.

The findings provide a clear answer to the study's research questions through several key pillars of evidence:

The Financial Bottleneck (RQ1). The analysis confirms that financial scarcity is the fundamental catalyst for all other barriers. This "Resource Scarcity" forces firms into a survivalist mode, where the non-billable "slack" required for Building Information Modelling (BIM) adoption, exploratory design, and R&D is structurally impossible to maintain.

Compensatory Social Capital (RQ2): In the absence of inclusive formal systems, participants rely on informal mentorship and "micro-networks" as a form of professional currency. These relationships are vital for navigating the "Credibility Gap"

and bypassing closed, racially homogenised networks, yet their informal nature leaves access to opportunity as a privilege of personal connection rather than a structural right.

Institutional Friction (RQ3) through statutory bodies and procurement frameworks was found to prioritise rigid compliance over innovation-led growth. The complexity of Supply Chain Management (SCM) and the high costs of professional registration act as "frictional barriers" that disproportionately drain the resources of emerging practices while favouring established, large-scale incumbents.

The Agency Paradox (RQ4) is a profound gap that exists between participants' highly sophisticated understanding of Open Innovation and their practical implementation. While practitioners demonstrate a clear ethical commitment to ecological responsibility and collaborative technology, their "Innovation Agency" is suppressed by client risk-aversion and market exclusion.

The study concludes that the current professional landscape creates a state of Capacity Vulnerability, in which technical talent is neutralised by institutional neglect. Breaking this cycle requires a fundamental shift in the South African built environment from the "goodwill" of individual mentors to structural mandates. For innovation to flourish, the sector must implement procurement reform, provide dedicated innovation grants, and formalise the bridging networks between small firms and the broader market. These findings form the empirical basis for the proposed Structural Open Innovation Model presented in the following chapter.

CHAPTER 5:
CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

This final chapter synthesises the study's findings to provide a definitive response to the research problem: the systemic suppression of innovation within small, Black-owned architectural and landscape architecture firms in South Africa. By moving beyond the thematic reporting of Chapter 4, this conclusion integrates empirical evidence with the study's original objectives. The overarching conclusion established herein is that these firms do not suffer from a "capacity gap" but are instead trapped in a Vicious Cycle of Exclusion, a structural feedback loop of financial precarity, market bias, and regulatory friction that renders Open Innovation (OI) aspirational rather than operational.

5.2. Conclusions on the Research Objectives

5.2.1. Objective 1: Systemic, Financial, and Institutional Barriers

The study concludes that innovation is hindered by a three-pronged system of constraints: economic scarcity, market bias, and bureaucratic friction. The empirical data confirms that Access to Funding is the foundational trigger of the Vicious Cycle. Chronic cash flow volatility forces a survival-innovation trade-off, diverting resources from long-term Research and Development (R&D) and BIM adoption toward immediate operational survival. This economic strain is compounded by Client Bias, where a dominant market preference for seniority and established white-led firms creates a systemic credibility deficit. Regardless of technical competence, Black-owned firms are excluded from the high-value, innovation-intensive projects necessary to build a competitive track record. Finally, Institutional Friction, manifesting as high professional fees and complex procurement, consumes the limited administrative capital of these firms, effectively penalising small practices for their size and historical disadvantage. Together, these barriers produce a state of Strategic Paralysis, preventing firms from achieving the Product Leadership required for market differentiation.

5.2.2. Objective 2: The Role of Mentorship, Networks, and Collaboration

The research establishes that while Open Innovation relies on the purposeful exchange of knowledge, the South African professional network is structurally fractured and exclusionary. Formal professional networks remain largely closed, racially homogenous clubs that deny Black practitioners meaningful cross-disciplinary collaboration. In response, firms have developed Compensatory Micro-networks, informal ties with alumni, students, and peers. While these informal relationships provide vital social capital and emotional support, they lack the institutional weight to secure firms a place in mainstream tender pipelines. The study concludes that mentorship, though highly valued, is currently a fragile lifeline based on personal investment rather than a professional entitlement. This prevents the scaling of knowledge, as vital business expertise regarding fees and risk management is hoarded within closed circles rather than shared across the sector.

5.2.3. Objective 3: The Influence of Policy and Regulatory Frameworks

The study reveals that current regulatory frameworks act as a source of Structural Inertia, facilitating the status quo rather than compelling transformation.

Statutory bodies (SACLAP/SACAP) are perceived as passive gatekeepers that focus narrowly on compliance and fee collection while failing to protect the economic equity of the profession. A critical conclusion is the existence of a Regulatory Lag; the absence of mandatory sustainable design requirements allows the Client Veto Power to suppress ecological innovations. Even though practitioners demonstrate high Open Innovation Awareness, they lack the legislative market pull to implement these ideas. Consequently, the regulatory environment functions as an Execution Blockade, where outdated policies freeze industry practice in time and penalise forward-thinking firms.

5.2.4. Objective 4: Strategies for Enhancing Open Innovation Pathways

The final objective concludes that enhancing innovation pathways requires a multi-scalar, triple-point intervention. It is insufficient to merely encourage firms to collaborate; the market itself must be restructured to make collaboration economically viable.

The study concludes that transformation must move through three synchronised pillars: Institutional De-Friction by reducing bureaucratic costs, Financial De-Risking by providing upfront project capital, and the Formalisation of Social Capital, turning informal mentorship into a structured, state-supported pipeline. Without addressing these nodes simultaneously, firms will remain trapped in Operational Excellence for survival rather than moving toward systemic, networked innovation.

5.3. Recommendations

Based on the integrated conclusions above, the following structural recommendations are proposed to dismantle the Vicious Cycle of Exclusion:

5.3.1. Institutional and Regulatory Reforms

Tiered Professional Fee Structures by statutory bodies implementing revenue-scaled membership and registration fees to reduce the financial burden on emerging micro-enterprises.

5.3.2. Mandatory Sustainable Design Legislation

Local and provincial governments should update building codes to mandate ecological innovations for new developments. This creates an immediate market demand for the innovative skills Black-owned firms already possess, effectively removing the Client Veto.

5.3.3. Active Ethical Policing

Regulatory bodies must evolve into custodians of equity by enforcing minimum salary standards and policing racial pay disparities within the sector.

5.3.4. Financial and Procurement Interventions

Public sector tender boards should introduce a system of audited, upfront payments for qualifying B-BBEE firms to alleviate cash flow volatility and enable technology investment.

5.3.5. Subsidised Technology Bundles:

Targeted grants should be provided to help small firms adopt BIM systems and digital collaborative tools, thereby reducing the "Digital Lag" identified in the study.

5.3.6. Collaborative and Capacity Building Strategies

Formalised paid mentorship by establishing a national, subsidised mentorship program that pairs emerging firms with senior professionals, focusing specifically on business management and practice survival skills.

5.3.7. Structured Academic-Industry Micro-Networks

Facilitate funded partnerships between design faculties and small firms for joint research and project bids, bridging the gap between theoretical training and professional practice.

5.4. Final Overall Conclusion

The fundamental conclusion of this dissertation is that the innovative potential of small, Black-owned design firms is not dormant due to a lack of skill but is systematically stifled by an environment that rewards familiarity over novelty. The Vicious Cycle of Exclusion acts as a triple-lock mechanism of financial fragility, structural bias, and institutional inertia.

Transformation within the South African architectural landscape requires a paradigm shift away from the politics of symbolism toward resource-intensive, structural reform. By implementing the Three Pillars of Transformation proposed in this study, the built environment sector can move from a state of strategic paralysis to a resilient, inclusive ecosystem. Ultimately, dismantling these systemic barriers is the only way to allow the principles of Open Innovation to take root, ensuring a professional landscape that reflects South Africa’s broader democratic and sustainable aspirations.

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7. Appendices

7.1. Appendix A: Ethical Clearance Certificate

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

29 August 2025

Thozama Nobanju Mputa (224121354)
Grad School of Bus & Leadership (Prior Restructuring)
Westville Campus

Dear TN Mputa,

Protocol reference number: HSSREC/00008982/2025
Project title: Innovation barriers facing small black-owned architectural and landscape architectural firms in South Africa: pathways to open innovation.
Degree: Masters

Approval Notification – Expedited Application

This letter serves to notify you that your application received on 14 July 2025 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

Incidents of adverse events and serious adverse events (AEs and SAEs) should be reported in writing to HSSREC, the study sponsors, and any regulatory authority (where appropriate), within 7 working days of the occurrence for local sites and 14 days for all other South African sites.

This approval is valid until 29 August 2026.
To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

HSSREC is registered with the South African National Health Research Ethics Council (REC-040414-040).

Yours sincerely,

[redacted]

Doctor Shamila Naidoo (Interim Chair)

/nng