Hungarian University of Agriculture and Life Sciences

Doctoral School of Economic and Regional Sciences (Gödöllő)

Doctoral (PhD) Dissertation

Urban transformation through the triple bottom line and gentrification mitigation: Johannesburg's social housing paradigm

By

Mzuchumile Makalima

Gödöllő, Hungary

2026

Name of Doctoral School: Doctoral School of Economic and Regional Sciences

Discipline: **Regional Sciences**

Head of Doctoral School: **Dr. Viktória Szente**

Hungarian University of Agriculture and Life Sciences,

Supervisor: **Dr. Csaba Szűcs**

Hungarian University of Agriculture and Life Sciences,

……. ……..

Approval of Head of Doctoral School Approval of Supervisor

Table of Contents

LIST OF TABLES

LIST OF FIGURES

ORIGINALITY OF AUTHORSHIP

The doctoral dissertation titled “Urban transformation through the triple bottom line and gentrification mitigation: Johannesburg’s social housing paradigm” represents original work, with all ideas and findings attributed solely to the author. No part of this dissertation has been previously submitted for any other academic qualification or degree.

Signed:……
Date:…….28.03.2026……..

1 INTRODUCTION

1.1 Background and Significance of the Research

Johannesburg occupies a unique position within the urban landscape of South Africa. Its history is deeply intertwined with the discovery of gold in the Witwatersrand Basin during the late 19th century, a momentous event that ignited one of the most significant gold rushes in history (Scheba and Turok, 2020). This discovery not only set the stage for Johannesburg's rapid urbanization but also established the city as a global centre for mining and commerce.

The historical significance of Johannesburg is rooted in its role as the epicentre of South Africa's mining industry. The gold rush of 1886 attracted a diverse influx of fortune seekers from various corners of the globe, leading to the rapid expansion of the city (Lipton, 2011). This period laid the foundation for the urban landscape we see today, characterized by towering skyscrapers, bustling commercial districts, and a diverse population that reflects the city's rich cultural mosaic.

Urban transformation in Johannesburg has been an ongoing process, marked by distinct phases that have shaped the city's socio-economic fabric (Mabin, 2021). The city's history is deeply marked by the apartheid era, a period of racial segregation and discrimination that had profound implications for urban planning and development (Leibbrandt et al., 2010). During this time, government policies were designed to enforce racial separation, leading to the creation of racially segregated townships on the outskirts of the city, where non-white populations were forcibly relocated.

The end of apartheid in 1994 heralded a new era for Johannesburg and South Africa as a whole. With the establishment of democracy, the city embarked on a journey of post-apartheid urban transformation. Policies aimed at dismantling apartheid's legacy and promoting social inclusion were introduced (Makalima, 2024b). As a result, Johannesburg experienced significant changes in spatial planning, infrastructure development, and governance structures.

Within this historical context, the Triple Bottom Line (TBL) framework, which emphasizes the interconnectedness of social, environmental, and economic considerations, emerged as a guiding principle for sustainable development. This framework provided a holistic lens through

which urban planners and policymakers could navigate the complexities of post-apartheid urbanization.

Simultaneously, the phenomenon of gentrification emerged as a significant force shaping Johannesburg's urban landscape. Gentrification involves the transformation of neighbourhoods, often resulting in increased property values and the displacement of existing communities. In the case of Johannesburg, this process manifested itself in various ways, raising questions about social equity, economic disparities, and the preservation of cultural identities in the face of rapid urban change.

Within this tapestry, social housing initiatives gained prominence as a critical component of addressing housing affordability and promoting inclusivity. Social housing aimed to provide viable solutions to the housing crisis, ensuring that a diverse range of residents could access safe and affordable housing options. The intersection of the Triple Bottom Line framework and strategies for gentrification mitigation within the context of social housing became a focal point for researchers and urban planners seeking sustainable and socially equitable urban development in Johannesburg.

Ultimately, the research of Johannesburg's social housing paradigm offers a unique opportunity to delve into the complexities of urban transformation, exploring the interconnected challenges of historical legacies, sustainable development, and social justice. By examining how the Triple Bottom Line framework and gentrification mitigation strategies are integrated into social housing initiatives, the research aims to contribute valuable insights into navigating the intricate dynamics of urban development in Johannesburg and, by extension, in similar urban contexts globally.

1.2 Research Gap and Contribution

Despite the extensive body of literature on Johannesburg's housing crisis, apartheid spatial legacies, and post-apartheid policy reforms, significant analytical gaps remain (Monare et al., 2014; Goo, 2018; Neluheni, 2019; Ngema et al., 2025). Existing literature tends to examine housing delivery, gentrification, and sustainability either in isolation or through sector-specific lenses. Studies on gentrification focus predominantly on displacement dynamics and speculative reinvestment in inner-city precincts (Karuri-Sebina and Beckley, 2023; Tyekela, 2018), while research on social housing often concentrates on policy implementation challenges and quantitative delivery targets ((Nel and Denoon-Stevens, 2023; Smith, 1979).

Similarly, sustainability discourse within the South African housing sector frequently invokes the Triple Bottom Line (TBL) rhetorically, without systematically integrating it into empirical assessment frameworks (Ley, 2003; Ngobese and Musvoto, 2024).

What remains underexplored is the intersection between these domains. There is limited research that simultaneously examines (1) historical path dependency in housing provision, (2) contemporary gentrification pressures and displacement risks, and (3) the operational alignment of social housing with the Triple Bottom Line framework within a single analytical model. Furthermore, few empirical studies critically assess whether social housing can function not only as a welfare intervention, but as a structural mechanism capable of mitigating rent-driven displacement while advancing economic, social, and environmental sustainability.

Internationally, debates on urban transformation have increasingly emphasized the need to reconcile competitiveness with social justice (Sihlongonyane, 2016; Sihlongonyane, 2024). However, much of this literature is based on Global North case studies. African cities, and Johannesburg in particular, remain underrepresented in theoretically integrated empirical research that bridges political economy, sustainability theory, and housing governance (Mosselson, 2018; Mottie, 2024). The persistence of apartheid spatial patterns introduces a distinctive historical dimension that differentiates Johannesburg from many Northern contexts, yet comparative theoretical integration remains limited.

This research addresses these gaps by positioning social housing at the nexus of gentrification theory and Triple Bottom Line sustainability assessment. Through the application of the Delphi method, it generates structured expert consensus on the historical trajectory, contemporary pressures, and sustainability performance of social housing in Johannesburg. By doing so, the research contributes in three principal ways: first, it integrates urban political economy and sustainability theory within a unified analytical framework; second, it provides empirical evidence from a major African metropolis, enriching international urban literature; and third, it reframes social housing as a potential instrument of structural urban transformation rather than solely a quantitative delivery mechanism.

In articulating this integrated approach, the research moves beyond descriptive policy evaluation toward a theoretically grounded and methodologically rigorous examination of how social housing can mediate the tensions between capital accumulation, social equity, and environmental resilience in a deeply unequal urban context.

1.3 Context of key Concepts of the Research

Triple Bottom Line (TBL): This concept refers to an approach to sustainability that considers three dimensions: economic, social, and environmental (Turok, 2016). In the context of urban development, TBL seeks to create outcomes that are economically viable, socially equitable, and environmentally sustainable.

Gentrification: Gentrification is the process of urban renewal and revitalization where wealthier individuals and businesses move into a historically lower-income area, leading to increased property values, displacement of long-time residents, changes in cultural and social dynamics, and often a loss of affordability (Turok, 2014a).

Social Housing Paradigm: This concept refers to the specific approach or model adopted by policymakers and urban planners in Johannesburg to address housing challenges, particularly for low-income and marginalized communities.

Urban Transformation: This concept encompasses the broader changes occurring within urban areas, including shifts in demographics, land use, infrastructure, and socio-economic dynamics (Parnell and Pieterse, 2010). Urban transformation may be driven by various factors such as population growth, economic development, policy interventions, and cultural shifts.

Mitigation Strategies: Given the potential negative impacts of gentrification on existing communities, the research seeks to explore various strategies aimed at mitigating these effects. This will include policies to preserve affordable housing, promote inclusive development practices, support community empowerment, and foster social cohesion.

1.4 Research Objectives

O1. Historical Analysis: To examine expert assessments of the historical evolution of Johannesburg's social housing system and evaluate the extent to which it reflects path-dependent institutional dynamics.

*O2. Gentrification Dynamics***:** To evaluate expert perceptions of the relationship between social housing provision and gentrification-related displacement pressures within the urban context.

03. Triple Bottom Line (TBL) Evaluation: To assess the degree to which current social housing delivery aligns with economic, social, and environmental sustainability principles as conceptualised within the Triple Bottom Line framework.

1.5 Research Questions

Q1. Historical Analysis: How has social housing evolved in Johannesburg over time, including its origins, policy changes, and key milestones, shaping the city's housing trajectory?

*Q2. Gentrification Dynamics***:** What are the specific gentrification pressures affecting housing in Johannesburg?

Q3. Triple Bottom Line (TBL) Evaluation: How do social housing projects in Johannesburg align with the Triple Bottom Line framework, considering economic viability, social inclusivity, and environmental responsibility?

1.6 Research Hypotheses

H1: Johannesburg's social housing system exhibits features consistent with institutional path dependency, particularly in spatial configuration and delivery mechanisms.

H2: The displacement-mitigating capacity of social housing is conditional upon governance structures, locational decisions, and affordability mechanisms.

H3: The implementation of Triple Bottom Line sustainability principles in social housing delivery reflect integration across economic, social, and environmental dimensions.

1.7 Research Scope and Epistemological Positioning

This research embarks on a comprehensive exploration of social housing initiatives within the vibrant urban context of Johannesburg, South Africa. At its core, the research seeks to unravel the intricate dynamics gentrification mitigation strategies, and the application of triple bottom line (TBL) principles within the realm of social housing projects in Johannesburg.

The geographical scope of this research encompasses the entire Johannesburg metropolitan area, encompassing both urban and peri-urban regions. This broad scope allows for a nuanced examination of diverse social housing projects and their interaction with the urban fabric.

In terms of temporal scope, the research primarily focuses on the post-apartheid era, commencing from 1994 when South Africa made the historic transition to democracy. This period represents a transformative phase in Johannesburg's history, marked by profound policy shifts, urban developments, and a renewed focus on social inclusion (Harrison and Todes, 2013).

This research adopts a perception-based analytical approach grounded in structured expert consensus. The historical evolution of Johannesburg's social housing system and its interaction with gentrification pressures are examined through the interpretive assessments of experienced housing professionals rather than through primary quantitative market data or longitudinal statistical modelling.

Accordingly, the research does not generate new housing price datasets, spatial econometric analyses, or household-level survey data. Instead, it synthesises the informed judgments of experts operating within planning, policy, housing delivery, and governance environments. The objective is not to produce predictive econometric measurement of displacement trends, but to evaluate how institutional actors interpret structural dynamics within the housing system.

The reliance on expert perception reflects the methodological orientation of the Delphi design, which is widely recognised as appropriate for complex policy environments characterised by uncertainty, institutional fragmentation, and normative contestation (Khatleli.et al., 2024; Tepkeny, 2023; Nevin, 2014; Mudzunga, 2022). Delphi methodology is particularly suited to contexts where knowledge is distributed across professional actors and where governance decisions involve multi-dimensional trade-offs rather than purely technical measurement (Landman, 2018).

Urban housing systems in post-apartheid contexts involve overlapping regulatory, fiscal, spatial, and political considerations that are not always fully captured through quantitative indicators alone (Landman, 2017). Furthermore, gentrification and displacement processes are frequently interpreted through competing theoretical lenses, including rent gap theory (Kambule et al., 2024), cultural-consumption frameworks (Mzileni, 2021), and neoliberal urban governance analyses (Steinberg et al., 2003; Probolsky, 2024). In such contexts, structured expert synthesis provides a systematic mechanism for consolidating institutional knowledge and professional interpretation within a coherent analytical framework.

The scope of the research is therefore interpretive and governance-oriented, focusing on institutional dynamics, displacement perceptions, and sustainability alignment as understood by sector specialists. The research's conclusions are situated within this structured expert-evaluation paradigm and contribute to ongoing debates concerning housing governance, urban transformation, and sustainability implementation.

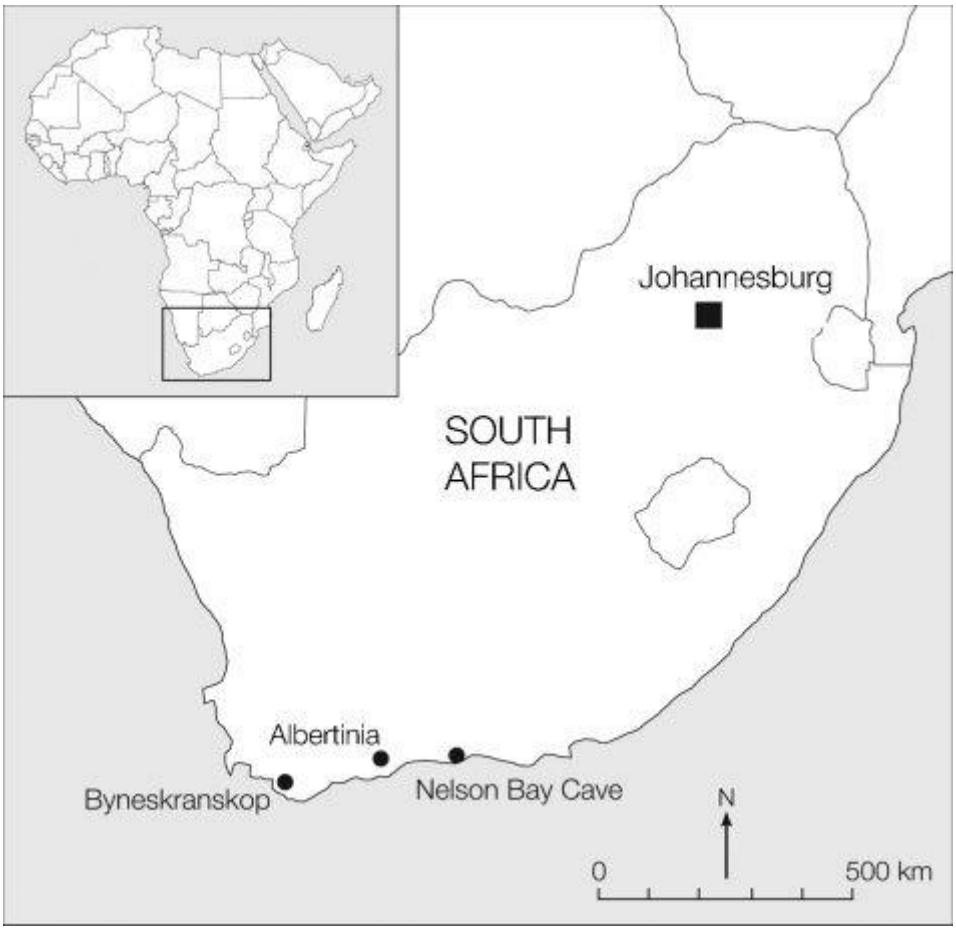

Figure 1: Research area

Source: Lützkendorf, 2020

Figure 1 is a Map of South Africa showing the location of Johannesburg, where the research is based on and where the expert panel for the Delphi study reside.

2 LITERATURE REVIEW

2.1 Introduction to the Literature Review

Urban transformation is increasingly recognised as a contested and multi-dimensional process shaped by the interaction of socio-political restructuring, economic change, and environmental pressures (Al-Hagla, 2024). This complexity is especially visible in rapidly expanding African cities such as Johannesburg, where apartheid spatial legacies, post-1994 policy reforms, and contemporary global urban trends intersect to produce uneven and differentiated urban outcomes (Iranmanesh and Kamalipour, 2025). Within this context, social housing has been positioned as a major policy instrument for redressing historical injustice, promoting spatial integration, and widening socio-economic opportunity. Yet the practical implementation of social housing remains deeply contradictory when it is pursued within urban environments simultaneously shaped by gentrification, speculative investment, and market-led redevelopment. This literature review therefore examines Johannesburg's urban transformation through the interrelated lenses of economic sustainability, social justice, and environmental sustainability, using the Triple Bottom Line (TBL) framework as its principal integrative prism.

The central tension running through this chapter is straightforward but analytically demanding: how can cities pursue renewal without displacement, economic development without exclusion, and sustainability without undermining affordability? Johannesburg is an appropriate case through which to explore this tension because it combines the opportunities of a continental economic hub with the burdens of deep spatial inequality inherited from apartheid planning (Nel, 2016; Umana et al., 2024). Social housing, introduced as part of the broader post-apartheid reconstruction agenda, was intended to address this historical injustice by providing affordable accommodation to populations excluded from formal housing markets. However, the literature increasingly questions whether social housing has been transformative enough to alter the city's socio-spatial structure in any sustained way.

A substantial body of literature emphasizes the continued influence of apartheid spatial legacies on Johannesburg's housing conditions. Segregated planning, forced removals, and uneven infrastructural investment fractured the city into racially and economically differentiated spaces whose effects remain visible in contemporary housing allocation, accessibility, and service distribution (Turok, 2016; Turok, 2014b). Informal settlements and peripheral state-subsidized housing continue to cluster on the urban edge, thereby reproducing earlier exclusions within new developmental narratives. Harrison et al. (2010) consequently argue that

any serious interpretation of urban change in Johannesburg must account for institutional path dependency and the inertia that constrains spatial restructuring.

At the same time, Johannesburg's trajectory is not wholly exceptional. Comparative urban literature reveals similar tensions in other African cities grappling with the challenge of inclusive development under neoliberal reform. In Cairo, for example, the expansion of gated communities and elite enclaves has deepened spatial inequality while disconnecting lower-income groups from urban opportunity (Sims, 2012; Nyakala et al., 2021; Dixon, 2024; Albertyn-Blanchard, 2023). Lagos presents a parallel case in which redevelopment in high-value zones such as Victoria Island has generated conflicts around displacement and the right to the city (Jelili et al., 2023). Such comparisons suggest that Johannesburg is part of a broader continental pattern shaped by capital mobility, land commodification, and uneven policy capacity.

Within these contested urban conditions, social housing occupies an ambiguous position. On one hand, it holds clear redistributive potential as an instrument of spatial justice and socio-economic empowerment. On the other, its effectiveness is constrained by land scarcity, rising construction costs, and the wider political economy of metropolitan growth. Most critically, the peripheral siting of social housing developments can hollow out their transformative potential by entrenching residents' separation from jobs, services, and urban amenities (Turok, 2016). The literature therefore pushes an important evaluative question: should housing success be measured by the number of units delivered, or by the degree to which housing enables long-term inclusion and access to opportunity?

This question becomes more pressing when set against the rise of gentrification in Johannesburg. Redevelopment in previously disinvested inner-city neighborhoods may attract capital, middle-class residents, and creative industries, but it often does so through rising rents and the displacement of lower-income households already residing in those spaces. The redevelopment of the Maboneng Precinct is frequently cited as an example of how cultural-led development can intensify real estate speculation and tenant displacement (Makalima, 2023; Aigbavboa et al., 2019). The implication is that urban renewal must be judged not merely by its aesthetic or fiscal outcomes, but by its distributive consequences.

Importantly, the literature does not present gentrification as inevitable. Newton et al. (2011) argue that when social housing is deliberately planned within vulnerable areas, it can buffer market pressures by retaining affordability and supporting social mix. Participatory upgrading

projects such as Nairobi's Mukuru Special Planning Area similarly demonstrate that displacement can be resisted when policy is informed by grassroots engagement and inclusionary planning (Lines and Makau, 2018). These cases suggest that Johannesburg's social housing programmes should be understood not only as delivery mechanisms, but as spatial instruments capable of intervening in wider processes of urban restructuring.

The TBL framework further broadens this analysis by insisting that housing should be evaluated across economic, social, and environmental dimensions rather than through a narrow delivery lens. TBL challenges growth models that privilege fiscal efficiency at the expense of equity or ecological responsibility (Elshater and Abusaada, 2023; Mhlongo et al., 2024). In practical terms, this means that social housing should be assessed not only in relation to shelter provision, but also in terms of whether it creates socio-economic opportunity, enhances inclusion, and contributes to environmental resilience. Examples in the literature include mixed-use developments, urban agriculture, and the use of green technologies such as solar systems, greywater reuse, and climate-resilient design (Huchzermeyer et al., 2004; Lama et al., 2024; Mguni et al., 2025; Irvine et al., 2024).

However, the application of TBL principles in Johannesburg remains uneven. A small number of projects have experimented with energy-efficient design and community participation, but these remain exceptions rather than the rule. The lack of consistent monitoring frameworks and impact indicators also limits robust evaluation. Consequently, housing policy in Johannesburg still tends to privilege the counting of delivered units over broader measures of accessibility, integration, and sustainability.

Taken together, the literature positions social housing within a wider nexus of urban justice, economic restructuring, and ecological sustainability. It suggests that meaningful urban transformation in Johannesburg depends not only on the quantity of housing supplied, but on the quality, location, and governance of that housing. The sections that follow therefore examine, first, the historical evolution of Johannesburg's housing trajectory; second, the socio-spatial dynamics of gentrification and the role of social housing in mitigating displacement; and third, the extent to which current and proposed housing interventions can be understood through the Triple Bottom Line framework. Through this integrated review, the chapter establishes the conceptual basis for analysing whether social housing can function as a transformative rather than merely compensatory urban policy instrument.

2.2 Historical Review of Johannesburg's Urban Housing Trajectory

The trajectory of housing development in Johannesburg cannot be separated from the city's political economy. Literature consistently shows that housing expansion did not simply arise from demographic growth or neutral market processes; rather, it was structured to reproduce labour control, racial hierarchy, and spatial segregation. In this sense, Black housing in Johannesburg historically functioned less as a public good than as an appendage to the extraction economy (Turok, 2014b; van Pinxteren et al., 2023).

Several theorists locate the foundations of this system in the late nineteenth-century gold rush, which triggered Johannesburg's rapid industrialization and generated demand for a large, mobile, and low-cost labour force. Swanson (1977) argues that municipal authorities and capital interests collaborated in creating urban residency controls that confined Black settlements to temporary and tightly regulated spaces near sites of production. Later historical accounts, including Beavon (2022) and Mhlongo et al. (2022), similarly show that the city's spatial organization reflected an explicitly economic logic: white residents occupied formal suburbs with land ownership and infrastructure, whereas Black workers were housed in insecure rental or hostel accommodation on the urban periphery. These arrangements were not merely discriminatory in a moral sense; they were institutionally rational within a system seeking to maximize labour extraction while minimizing social investment.

The 1923 Native (Urban Areas) Act is widely identified in the literature as a decisive moment in this process (Harrison et al., 2007; Majlingova, 2025). The Act and its subsequent amendments formalized the principle that African urban residence should be conditional upon labour. Housing provision for Black South Africans was therefore subordinated to productivity rather than citizenship. Public housing for Black workers was concentrated in male hostels constructed by mining companies and municipal authorities, thereby excluding family settlement and long-term tenure (Makalima, 2022; Mahlangu et al., 2022). As Mabin (1992) and Mahlatsi, (2022)shows, the housing stock was not only insufficient, but systematically severed from land market participation, preventing Black residents from accumulating urban assets.

This labour-oriented urbanism intensified under the Group Areas Act of 1950, which accelerated racialized economic segregation. Mabin (1992) interprets the Act as both racial and economic in effect: it dismantled mixed neighbourhoods, displaced Black and Indian economic activity, and reorganised urban space to protect white-owned property and investment. Morris

(1999) documents that forced removals displaced more than 3.5 million people nationally between the 1950s and the 1980s, with Johannesburg serving as one of the central theatres of resettlement. Places such as Sophiatown, which had supported vibrant mixed economies and community networks, were destroyed, while displaced populations were relocated to state-created townships such as Soweto, Lenasia, and Eldorado Park (Okyere et al., 2025). These settlements were peripheral not by accident, but by design.

Turok (2014b) argues that this peripheralisation served an explicit economic function. By locating workers far from industrial and commercial nodes, the apartheid state externalized the costs of social reproduction, transport, health, education, and infrastructure; while still securing labour supply. The result was a fragmented urban form characterized by inefficient land use, high transport costs, and structurally unequal access to opportunity. One of the most consistent themes in the literature is that land access and tenure were central to this system of exclusion. While white households benefited from homeownership subsidies, formal credit, and infrastructure investment, Black urban residents were largely excluded from the formal housing finance system until the late 1980s (Charlton and Kihato, 2006; Butcher, 2020). Housing was therefore not simply shelter; it was a mechanism through which wealth accumulation and urban citizenship were denied to the majority.

Seen from this perspective, Johannesburg's housing system before 1994 was effectively a dual market: a formal, regulated, and state-assisted white market on the one hand, and a restricted, insecure, and often informal Black market on the other. Culwick Fatti (2023) shows that this fragmentation generated long-term distortions in both housing supply and demand, the effects of which continued to shape spatial planning after apartheid. The post-apartheid housing shortage, accordingly, cannot be understood without reference to a century of systematic under-provision for Black residents.

By the late 1980s, the system had entered a severe spatial and housing crisis. Accelerating urbanization, political resistance, and economic stagnation rendered apartheid urbanism increasingly unsustainable. Informal settlements such as Orange Farm, Ivory Park, and Diepsloot emerged on non-residential land with limited services and insecure legal status (Jaglin et al.; 2024; Moodley and Erwin, 2021). Cirolia et al. (2016) interpret these settlements as both a symptom of state failure and a practical claim to the city by excluded populations. In economic terms, such settlements were zones of last resort, providing low-cost shelter for those excluded from both formal labour and formal housing markets.

Post-apartheid housing policy, beginning with the Reconstruction and Development Programme (RDP) in 1994, was formulated as an explicit response to these legacies. Bond and Khosa (1999) and Turok (2016) both note that while the RDP was ambitious in intent, it was constrained by inherited land market distortions and capital regimes. Ewing (2025) further argues that state-subsidized housing was often pushed onto marginal land far from employment centres because of speculative landholding and cost pressures. Consequently, even where housing delivery occurred at scale, spatial and economic integration remained weak.

The literature is similarly critical of the programme's emphasis on homeownership, speed of delivery, and numerical targets. Fotheringham et al. (2009) and Pienaar (2013) argue that the model effectively reproduced exclusion by placing poor households in low-quality, poorly connected locations, thereby generating what has been termed "RDP urbanism." The enduring significance of this critique is that post-apartheid reforms altered the legal regime of apartheid without fully overturning its spatial logic.

Overall, the historical literature portrays Johannesburg's housing system as a deeply economic and political formation shaped by land, capital, labour control, and racialized governance. Housing served not only as shelter but as a technology of exclusion and a mechanism of urban ordering. The post-apartheid city inherited this structure and has only partially reworked it. Understanding these historical dynamics is therefore essential for interpreting contemporary questions of affordability, displacement, and sustainability in Johannesburg's housing landscape.

2.3 Post-Apartheid Spatial Planning Framework and Its Impact on Johannesburg's Housing Economy

The post-apartheid period introduced both rupture and continuity into Johannesburg's housing landscape. The legal architecture of apartheid was dismantled after 1994, yet the material and economic geography it created proved far more durable (Admasu et al., 2025). Most literature agrees that the Reconstruction and Development Programme (RDP) represented a major shift in housing policy, intended to deliver formal housing to millions excluded from urban inclusion and ownership under apartheid (Bond and Khosa, 1999). Where the literature diverges is in its assessment of whether the programme meaningfully achieved spatial and economic integration.

Earlier analyses tended to emphasize delivery scale, pointing to the millions of units built nationally as evidence of transformative intervention (Turok, 2014a). Later literature, however,

is more critical, focusing on the spatial inefficiencies and weak economic integration embedded in the delivery model. One major line of critique concerns cost-efficiency and market integration. The policy depended heavily on state subsidies and private-sector implementation partnerships, which were expected to stretch public resources while accelerating delivery (Charlton and Kihato, 2006; Salih et al., 2026). Yet several authors argue that this model inadvertently reproduced apartheid's peripheral spatial logic. Lees (2010) and Pienaar (2013) contend that because well-located urban land remained expensive and speculative, housing projects were pushed to cheaper urban fringe locations with weak access to jobs, schools, health care, and economic infrastructure.

A related critique focuses on tenure form. Crankshaw (2008) and Huchzermeyer (2003) show that the strong policy preference for ownership, rather than rental or incremental tenure, limited the adaptability of the housing system. Although homeownership was framed as a path to economic empowerment, many beneficiaries were unable to use their homes as productive assets because the properties were poorly located, weakly valued, and entangled in title administration problems. Turok (2016) notes that many peripheral RDP homes experienced little market appreciation, which undermined their potential role in household wealth creation. In this sense, housing became a spatial fix rather than a vehicle for durable inclusion.

The programme's disconnection from broader urban economic restructuring is another major theme in the literature. Since the 1990s, Johannesburg's economy has shifted away from manufacturing and toward finance, services, and informal economic activity (Elsner, 2024). Yet many state-led housing projects remained disconnected from the city's emerging employment nodes, especially in the northern suburbs and CBD-adjacent areas. Saff (1998) and Charlton (2009) argue that this spatial mismatch intensified the costs of poverty by increasing commuting times, reducing job-search efficiency, and raising household transport burdens. The implication is that housing provision cannot be evaluated solely in terms of unit delivery; it must also be judged by its position within urban economic space.

This concern feeds into a broader critique of the supply-side and technocratic bias of post-apartheid housing policy. Lemanski (2011) argues that the focus on quantifiable outputs produced a "project logic" in which policy success was measured by the number of units built rather than by indicators such as tenure security, access to services, or proximity to employment. Watson (2009) and Huchzermeyer (2003) similarly suggest that housing was reduced from a multidimensional social good to a bureaucratic commodity. The continued

expansion of informal settlements in places such as Diepsloot, Orange Farm, and Zandspruit underscores this critique by revealing the ongoing mismatch between formal provision and the needs of a dynamic urban economy.

The literature increasingly interprets informal settlements not simply as policy failure, but as active spatial responses to rigid planning and exclusionary land markets. Huchzermeyer et al. (2014) argue that informal housing reflects the agency of the urban poor in locating themselves close to economic nodes and transport corridors. In that sense, informal settlements correct some of the spatial errors embedded in peripheral formal delivery. Smit (2011), however, observes that the state has too often responded through eviction, relocation, or neglect rather than through integrative management, thereby reinforcing rather than resolving spatial inequality.

Another important strand of critique concerns the commodification of land and housing. Charlton and Kihato (2006) document the emergence of informal resale markets in RDP housing, especially in economically strategic areas. Beneficiaries often sold homes below cost in order to move closer to employment and opportunity. This phenomenon simultaneously exposed the logic of household survival strategies and the inefficiency of peripheral planning. It also revealed the fragility of tenure security in contexts where property registration systems and formal credit access remained weak, particularly for women and secondary occupants.

Macro-economic policy further shaped these outcomes. Bond and Khosa (1999) argue that South Africa's fiscally conservative Growth, Employment and Redistribution (GEAR) framework narrowed the state's capacity to pursue integrated urban development. Limited investment in transport, public facilities, and well-located land acquisition entrenched cost-driven delivery choices. Parnell and Pieterse (2010) add that the state's reluctance to intervene more assertively in land markets helped preserve the apartheid-era geography of opportunity, with access to land remaining central to economic inclusion.

Although later policy frameworks such as Breaking New Ground (BNG) and the National Development Plan (NDP) shifted rhetoric toward densification, mixed-income development, and inclusionary spatial planning, critics remain skeptical about the extent of practical change. Turok (2016) argues that despite new language, delivery practice still depends heavily on distant land, mass targets, and poor coordination with transport and service planning. The literature therefore suggests that RDP urbanism has been modified rhetorically more than structurally.

In summary, the post-apartheid housing literature presents Johannesburg's housing economy as shaped by unresolved tensions between transformative intent, fiscal constraint, land market power, and inherited spatial inequality. The central lesson is that the housing crisis cannot be solved by quantity alone. It requires rethinking the relationship between land, labour, infrastructure, transport, and housing within the post-apartheid city.

2.4 Gentrification and Displacement in the Context of Johannesburg's Housing Landscape

Gentrification in Johannesburg is best understood as a specifically post-apartheid form of urban transformation rooted in the remaking of space after decades of racially legislated segregation. The literature consistently rejects any simple reading of gentrification as neutral "urban upgrading." Instead, it frames the process as a cumulative form of economic displacement generated by the interaction of real estate capital, state policy, and urban restructuring.

The first clear manifestations of gentrification emerged in the inner city during the mid-1990s, especially in areas such as Hillbrow, Yeoville, Berea, and Joubert Park. These areas, once formally reserved for whites under apartheid, became rapidly desegregated after 1994 and came to house working-class Black South Africans and African migrants. Crankshaw (2022) and Makalima (2025) describe this period as one in which the inner city became both a refuge for the urban poor and a target for state and private interests seeking to "restore order." The language of renewal and revitalization used by the municipality in the late 1990s laid the discursive foundations for later gentrification strategies (Murray, 2015).

Hillbrow is often cited as emblematic of this process. Once associated with cosmopolitan modernity, the neighbourhood underwent disinvestment, infrastructural decline, and demographic transformation during the late apartheid and early post-apartheid years. Murray (2015) argues that its representation as a "slum" in media and policy discourse helped legitimate coercive clean-up practices, evictions, and private reinvestment. These interventions effectively reoriented the area toward more securitized, middle-income forms of urban residence and initiated patterns of economic displacement.

The Maboneng Precinct provides a particularly visible example of speculative, culture-led redevelopment. Winkler (2022) shows how private developers, most notably Propertuity under Jonathan Liebmann, sought to transform a formerly industrial area into a creative mixed-use district built around loft apartments, galleries, design studios, and consumption spaces. Yet this process depended on the removal of low-income tenants and informal users of abandoned

industrial buildings (Murray, 2015). In local critique, Maboneng has become a symbol not simply of urban creativity, but of exclusion, class remaking, and the aesthetic packaging of displacement.

Yeoville and Berea followed somewhat different but related trajectories. Rather than formal flagship regeneration, these areas experienced gradual rent increases, securitization of housing stock, and a shift toward upwardly mobile Black middle-class tenants. Crankshaw (2022) points out that this pattern complicates simplistic racial readings of gentrification: in Johannesburg, displacement is not only about the return of white capital to historically Black space, but also about class-stratified reinvestment in which segments of the Black middle class participate in reshaping urban space to the detriment of poorer residents.

A strong strand of economic literature links these patterns to the commodification of land and housing. Hogan (2023) and Logan and Gardner (2018) argue that finance liberalization in the 1990s and 2000s expanded mortgage access for middle-income households while leaving low-income residents excluded from formal credit systems. As inner-city property values rose, those lacking tenure security or access to finance became particularly vulnerable to displacement, often with little resettlement support.

The role of the state within these processes is deeply contested. On the one hand, policy frameworks such as the Inner City Regeneration Strategy (ICRS) and Johannesburg Growth and Development Strategy 2040 explicitly seek investment, competitiveness, and urban upgrading. On the other hand, Turok (2020) argues that these strategies privilege growth over social protection, supporting public-private partnerships, by-law enforcement, and place marketing without commensurate tenant safeguards. Todes et al. (2016) similarly suggest that anti-squatting legislation, the policing of street trading, and episodic evictions operate as instruments of an urban political economy that treats land as an income-generating asset rather than a social good.

The effects of displacement are often spatially recursive. Former inner-city residents displaced by market pressures or eviction are frequently relocated to informal settlements or township extensions such as Diepsloot, Orange Farm, and Cosmo City. Pieterse (2022) and Fransham (2020) show that these relocations increase transport costs, reduce access to employment, and intensify poverty traps. In this sense, gentrification in Johannesburg reproduces logics reminiscent of apartheid spatial planning, even though it operates through market-state interaction rather than explicit racial law.

The literature is also skeptical of claims that inclusive regeneration has been meaningfully achieved. Brickfields in Newtown, often cited as a model mixed-income social housing intervention, is viewed by many authors as limited in scale and insufficiently accessible to the very poor. This raises doubts about whether pro-poor redevelopment can be achieved without more robust redistribution of land, stronger tenure protection, and broader housing intervention.

Overall, the critical literature portrays gentrification in Johannesburg as a multifaceted but structurally economic process. Unlike some Northern narratives centred on artists or lifestyle consumers, Johannesburg's gentrification is tied closely to land commodification, state-enabled reinvestment, and the marginalization of low-income households. Displacement is therefore not incidental but central to the process. Any genuinely equitable urban strategy must confront this structural reality rather than assume that market-led upgrading can automatically produce inclusion.

2.4.1 Theoretical Perspectives on Gentrification and Urban Sustainability: A Critical Comparison

The Johannesburg case cannot be interpreted adequately without engagement with the major theoretical traditions that have shaped international gentrification literature. Three perspectives are especially important here: Rent Gap Theory, Cultural/Consumption Theory, and Neoliberal Urbanism Theory. Read alongside critiques of the Triple Bottom Line (TBL), these frameworks provide the conceptual basis for positioning Johannesburg's housing transformation within a wider critical urban political economy.

Rent Gap Theory, associated with Neil Smith and adapted in more recent literature, explains gentrification through the disparity between the current capitalized ground rent of land and its potential rent under more profitable redevelopment (Lategan et al., 2025). When this gap widens sufficiently, reinvestment becomes attractive and displacement becomes likely. In Johannesburg, this logic helps explain redevelopment in disinvested areas such as Maboneng and parts of Jeppestown, where land once considered marginal becomes newly profitable under speculative urban branding and reinvestment (Okanga and Groenewald, 2017; Slaper and Hall, 2011; okem et al, 2024). The strength of the theory lies in its structural emphasis on capital movement and land markets. Its limitation, however, is that it can become overly economistic, underplaying symbolic value, cultural meaning, and middle-class agency (Fayomi et al., 2024; Magidimisha-Chipungu, 2024; Cirolia et al., 2021).

Cultural/Consumption Theory, most closely associated with Ley (2003), foregrounds the role of identity, taste, and urban imaginaries. From this perspective, gentrification is driven not only by the search for profit, but also by changing middle-class preferences for heritage buildings, industrial aesthetics, and "authentic" urban lifestyles. In Johannesburg, this perspective is relevant to the branding of areas such as Braamfontein and Newtown as creative, cosmopolitan, and culturally vibrant districts (Ngwenya and Cirolia, 2021; Madell, 2025). The contribution of this approach is that it captures the symbolic and cultural dimensions of urban change. Its weakness, however, is that it can insufficiently explain why such cultural shifts become effective only under particular conditions of land commodification and structural inequality (Olatundun, 2024).

Neoliberal Urbanism Theory adds a third dimension by situating gentrification within broader transformations of governance. Rather than seeing displacement as an accidental outcome of market activity, this perspective argues that states actively facilitate gentrification through entrepreneurial planning, public-private partnerships, deregulation, and competitiveness strategies (Bhanye et al., 2024). In post-apartheid Johannesburg, the Inner City Regeneration Strategy and related growth-oriented frameworks reflect this entrepreneurial logic by prioritizing investment attraction and spatial competitiveness (Lategan et al., 2025). The significance of this theory is that it explains why state institutions so often enable rather than restrain exclusionary redevelopment.

These frameworks should not be seen as mutually exclusive. Instead, they illuminate different but connected dimensions of urban change: speculative reinvestment, middle-class cultural valuation, and governance restructuring. A more complete reading of Johannesburg requires synthesis across all three.

The TBL framework introduces a distinct but intersecting line of analysis. As a normative model, TBL proposes that economic viability, social equity, and environmental sustainability should be pursued simultaneously. Yet critical literature raises serious doubts about whether TBL is operationalized strongly enough in practice. Pollio and Cirolia (2022) argue that without clear indicators and enforcement mechanisms, TBL remains rhetorically appealing but institutionally weak. In housing systems, the economic pillar often dominates, while social and environmental concerns are subordinated (Monare et al., 2014). Neluheni (2019) similarly suggests that although TBL language is increasingly common in South African policy

discourse, its integration into land markets, housing finance, and displacement mitigation remains inconsistent.

This creates an important analytical tension. On one hand, TBL aspires to balance growth and justice. On the other, gentrification processes rooted in rent extraction, speculative capital, and entrepreneurial governance may actively undermine social sustainability. By placing Johannesburg at the intersection of these debates, the present study moves beyond descriptive policy analysis and instead evaluates whether social housing can operate as a structural intervention within contested land markets. In this way, the research is positioned within a critical urban political economy that treats history, market power, governance, and sustainability not as separate domains, but as mutually conditioning forces.

2.5 Why Social Housing Becomes Vital in the Face of Gentrification-Induced Displacement

The literature reviewed above makes clear that gentrification in Johannesburg is not a neutral process of urban improvement. It is a remaking of spatial value driven by private capital, municipal branding, and infrastructure-led investment attraction. In areas such as Maboneng and Braamfontein, redevelopment has often increased rents and intensified formalization pressures, thereby excluding very low-income residents who cannot absorb rising housing and service costs (Winkler, 2022; Murray, 2015). Within this context, social housing emerges not as a peripheral welfare measure, but as a central instrument for resisting exclusionary urban change.

Displacement in Johannesburg rarely means relocation into equivalent formal accommodation. For many residents in insecure or informal work, the absence of affordable rental stock in central areas pushes them toward overcrowded family housing, peripheral townships, or informal settlements such as Soweto, Tembisa, Orange Farm, and Diepsloot (Crankshaw, 2022; Huchzermeyer el., 2014). These areas are typically remote from employment centres, weakly served by public infrastructure, and disconnected from efficient transport systems. Turok (2014) argues that such relocation multiplies transport costs, lengthens commuting times, weakens access to labour markets, and disrupts local support networks. Makalima (2022) similarly suggests that these movements represent spatial downgrading rather than any meaningful housing advancement.

The scale of informal absorption underscores the seriousness of this problem. Settlements such as Zandspruit, Ennerdale, and Freedom Park accommodate populations displaced from better-

located but increasingly unaffordable neighbourhoods. According to the South African Cities Network (2016), more than 1.2 million households in Gauteng live in informal settlements. Informality thus functions as a survival strategy in the face of exclusionary land and housing markets, even while exposing households to severe infrastructural, health, and environmental risks.

Within this landscape, social housing is portrayed in the literature as one of the few non-market mechanisms capable of reintroducing low-income residents into the urban core. By providing affordable and secure rental tenure close to employment, services, and infrastructure, social housing can interrupt the displacement logic of gentrification. Projects implemented by JOSHCO, such as Europa House and Riverview, are frequently cited as examples of state-supported, centrally located rental housing that can stabilize vulnerable households (Logan and Gardner, 2018; Smith et al., 2019). Yet the literature is equally clear that these interventions remain too limited in scale. When only a few thousand units are delivered annually against waiting lists exceeding 300,000 households, the redistributive effect of social housing remains constrained.

This gap between rhetorical commitment and actual provision is a recurring criticism. Charlton and Kihato (2006) argue that spatial justice cannot be achieved while social housing remains marginal to urban economic policy. If affordable housing continues to be treated as secondary rather than central to land, transport, and redevelopment planning, the cycle of displacement and re-informalization will persist. In practical terms, this means that social housing must be located within zones of economic opportunity rather than relegated to low-cost peripheral land.

The literature therefore treats social housing as essential not only for social equity but for sustainable urban development more broadly. Without substantial social housing provision, Johannesburg's central city is likely to become increasingly exclusive, while peripheral informal settlements continue to expand under conditions of infrastructural strain and social vulnerability. Social housing is thus not simply an adjunct policy instrument; it is one of the key mechanisms through which the city can contest the exclusionary outcomes of market-led urban transformation.

2.6 The Triple Bottom Line as another Vital Solution for Housing Challenges in Johannesburg

As a response to Johannesburg's intertwined histories of spatial exclusion, market-driven redevelopment, and persistent informality, the Triple Bottom Line (TBL) offers a potentially useful framework for realigning housing policy toward sustainability, equity, and resilience. Rather than treating economic viability, social justice, and environmental sustainability as competing imperatives, TBL insists that all three should be pursued simultaneously (Elkington, 1997; Tseng et al., 2020). This synthetic approach is particularly relevant in Johannesburg, where housing remains entangled with inequality, gentrification pressures, and ecological vulnerability.

2.6.1 Economic Sustainability

Within the TBL framework, economic sustainability requires more than project profitability. It concerns whether housing systems enable long-term affordability, fiscal resilience, and inclusion in urban opportunity structures. The literature consistently shows that apartheid planning created a bifurcated housing market in which formal homeownership, infrastructure, and access to credit were concentrated among white residents, while Black households were relegated to peripheral and under-capitalized spaces (Crankshaw, 2022). Post-apartheid programmes have not fully reversed this pattern. RDP developments, for example, are often located on the urban fringe, thereby reproducing economic marginalization through high transport costs and distance from jobs (Turok, 2016).

From this perspective, economic sustainability in housing requires better integration between land policy and opportunity. Measures such as land value capture, inclusionary zoning, mixed-income development, and inner-city densification are increasingly discussed as mechanisms for widening affordability. International examples such as New York City's Inclusionary Housing Program illustrate how market development can be linked to affordable provision through density bonuses and fiscal incentives. The literature suggests that similar tools could be adapted in Johannesburg's high-pressure nodes such as Braamfontein, Rosebank, and Maboneng, where rents have outpaced household income growth.

Economic sustainability must also acknowledge the informal housing economy. Informal settlements such as Diepsloot and Orange Farm are not merely spaces of deprivation; they also contain home-based enterprises, informal rental systems, and complex local economies (Smith et al., 2019; Huchzermeyer el al., 2014). Extending legal tenure, infrastructure, and service

support could therefore formalize some of these micro-economies and improve residents' capacity to accumulate assets and access finance.

2.6.2 Social Sustainability

Social sustainability concerns more than habitability; it encompasses inclusion, tenure security, community stability, and historical redress. In South Africa, the inherited urban form of apartheid continues to undermine social sustainability by displacing the poor toward peripheral or under-serviced spaces. Gentrification-driven displacement from areas such as Jeppestown and Hillbrow often relocates residents into informal settlements or townships such as Tembisa and Katlehong, where access to services, safety, and mobility remains uneven (Morris, 1999; Majlingova, 2025).

From this perspective, socially sustainable housing requires the expansion of well-located social housing. Rental housing provided by the state or non-profit actors can function as a buffer against exclusion, but the literature indicates that South Africa's social housing stock remains underdeveloped and concentrated in a limited number of areas such as Fleurhof and parts of central Johannesburg (Makalima, 2024a). Longer-term social sustainability also depends on secure tenure, access to education and health services, and transport integration. This implies that housing must be understood as part of a wider urban citizenship infrastructure rather than as a stand-alone commodity.

Participatory planning is another major theme. The literature on failed or contested projects, such as the N2 Gateway in Cape Town, suggests that social sustainability is weakened when residents are treated as passive beneficiaries rather than active participants in design and governance. Johannesburg's future housing interventions therefore require stronger transparency, accountability, and co-production if they are to support inclusion in a substantive sense.

2.6.3 Environmental Sustainability

Environmental sustainability in housing involves both ecological impact and climate resilience. Johannesburg faces growing environmental pressures associated with urban sprawl, high energy use, water scarcity, and the expansion of settlements in environmentally sensitive areas. Yet the literature suggests that low-cost housing in South Africa has rarely integrated green design in any systematic way. Makalima (2025) argues that many RDP houses are built with low-quality materials, poor insulation, and little consideration for recurrent energy burdens, effectively locking low-income residents into unsustainable living conditions.

More environmentally sustainable alternatives include passive solar design, rainwater harvesting, renewable energy systems, and energy-efficient retrofitting. The Kuyasa Housing Project in Khayelitsha, Cape Town is often cited as one of the few examples of green low-cost housing in South Africa, incorporating solar water heaters, efficient lighting, and insulation (Khine and Langkulsen, 2023). Similar models could be adapted to Gauteng's growth corridors. In dense nodes such as Hillbrow and Yeoville, the retrofitting of existing buildings through green roofs, efficient windows, and water-saving technologies may reduce both emissions and utility costs.

Environmental sustainability in Johannesburg must also confront the legacy of contaminated urban land. Significant vacant land, especially in the south of the city, is affected by mining-related pollution. As a result, sustainable housing development requires not only green design but also land remediation, environmental monitoring, and stronger regulatory enforcement. Transit-oriented development (TOD) is another important dimension. Aligning affordable housing with the Rea Vaya and Gautrain corridors could reduce car dependence and improve accessibility, though the literature notes that current TOD benefits have often skewed toward middle- and upper-income groups.

2.6.4 Analytical Framework for Operationalizing the Triple Bottom Line in Social Housing

A recurring criticism in the literature is that TBL is often invoked conceptually but rarely operationalized in a sufficiently structured way (Neluheni, 2019). To address this weakness, the present study interprets the three TBL pillars as analytically linked rather than discrete. Economic sustainability refers to long-term fiscal resilience, affordability retention, subsidy durability, and local economic integration (Ngema et al., 2025). Social sustainability refers to tenure security, displacement mitigation, social integration, and spatial accessibility to opportunity (Karuri-Sebina and Beckley, 2023). Environmental sustainability refers to energy efficiency, infrastructure resilience, land-use efficiency, and the regulatory conditions required to sustain these outcomes (Rapelang et al., 2018; Ravele, 2025).

This interpretation is important because the three pillars are interdependent. Financial constraints affect environmental implementation; spatial location shapes both social inclusion and economic opportunity; and market-driven land scarcity can undermine all three. TBL is therefore treated here not as a set of parallel boxes, but as a governance model embedded within institutional and market conditions.

Operationally, this framework guided the formulation of Delphi statements used later in the study. The TBL dimensions were translated into analytical indicators related to affordability, project viability, displacement mitigation, inclusion, energy efficiency, and environmental resilience. These indicators do not function as direct quantitative measures; rather, they provide a structured basis for evaluating expert perceptions of Johannesburg's social housing system within a multidimensional sustainability framework.sustainability literature, 2026.

Table 1: Operationalization of the Triple Bottom Line Framework in the Analysis of Social Housing

TBL Dimension	Analytical Indicators	Relevance to Social Housing
Economic Sustainability	Housing affordability, financial viability of projects, long-term funding stability	Ensures social housing can remain financially sustainable while providing accessible housing
Social Sustainability	Social inclusion, displacement mitigation, community integration, spatial accessibility	Evaluates the role of social housing in reducing socio-spatial inequality and supporting inclusive urban development
Environmental Sustainability	Energy efficiency, sustainable building practices, environmental resilience	Assesses the extent to which housing projects contribute to environmentally sustainable urban development

Source: Author's conceptual framework based on Triple Bottom Line, 2025.

2.7 Path Dependency, Gentrification Pressures, and Sustainability Trade-Offs in Urban Housing Governance

Although the dissertation examines historical housing evolution, gentrification dynamics, and TBL alignment as analytically separate themes, the literature suggests that they operate relationally rather than independently. Johannesburg's social housing system is shaped by the interaction of institutional path dependency, market-driven reinvestment pressures, and governance-mediated sustainability trade-offs.

Institutional path dependency highlights how early policy choices constrain subsequent reform trajectories. In South Africa, apartheid planning institutionalized peripheral settlement patterns, racialized land allocation, and uneven infrastructural investment (Smith, 1979; Nevin, 2014). Post-1994 reforms such as the RDP and BNG expanded formal housing delivery, but the literature indicates that restructuring has remained partial and uneven (Vejby, 2015). Social

housing development therefore continues to operate within inherited land markets and administrative frameworks rather than on a blank slate.

Gentrification theory helps explain how these inherited structures interact with contemporary reinvestment. Rent Gap Theory suggests that redevelopment occurs where a disparity emerges between actual and potential ground rent (Letlape, 2019). In Johannesburg's regeneration zones, this dynamic intersects with urban branding strategies, speculative development, and entrepreneurial governance (Parker et al., 2019; Kambule et al., 2024). Cultural valuation and middle-class consumption further shape which neighbourhoods become desirable, but these preferences are mediated by state policy and market conditions rather than existing independently of them.

The TBL framework introduces a normative sustainability lens, yet the literature indicates that its operationalization is uneven. Economic viability often dominates policy decisions, especially in contexts marked by land scarcity and fiscal constraint. As a result, efforts to improve one pillar can intensify pressures in another. Rising land values may strengthen project viability and municipal revenue while simultaneously worsening affordability and displacement risk. Peripheral siting may reduce acquisition costs while reproducing apartheid-era exclusion (Oloukoï, 2018; Oluwaseyi Olatundun, 2024). Stronger environmental standards may improve resilience but also increase capital costs in subsidy-dependent systems. These are not incidental tensions; they are structural trade-offs embedded in housing governance.

The literature therefore supports a triadic interpretation of Johannesburg's housing governance environment: first, institutional continuity rooted in path-dependent spatial structures (Siegenthaler, 2017; Conway, 2022); second, market-driven reinvestment pressures consistent with gentrification theory (Jessa and Rogerson, 2025); and third, sustainability governance mediated through fiscal and regulatory capacity (Teppo and Millstein, 2015). Within this triad, social housing functions as an intermediary intervention that attempts to balance inherited inequality, present-day market pressures, and future-oriented sustainability goals. Its transformative capacity depends on whether these spheres can be aligned rather than working at cross purposes.

2.8 Synthesis and Literature Gaps

The literature reviewed across this chapter converges on one central insight: Johannesburg's housing system is not the accidental outcome of urban growth, but the product of historically specific processes linking labour control, land markets, infrastructure allocation, and state

power. From the gold rush era through apartheid and into the democratic period, housing has been deeply implicated in the reproduction of inequality (Beavon, 2022; Swanson, 1977; Turok, 2014b). The post-apartheid period altered the formal policy environment, but it did not dissolve the inherited spatial economy that continues to shape who lives where, under what conditions, and with what access to opportunity.

The literature also shows that post-apartheid reforms, most notably the RDP, delivered housing at scale but often failed to reinsert low-income households into the urban economy in any sustained way (Charlton, 2009; Hofer et al., 2022). This failure is sharpened in the gentrification literature, which demonstrates that reinvestment in inner-city neighbourhoods frequently displaces poorer residents toward informal settlements and peripheral townships. The first gap is that there is relatively limited empirical attention has been paid to the longer-term socio-economic trajectories of displaced households, including their absorption into informal economies, changing service access, and continued exclusion from formal housing markets.

A second major gap concerns the operationalization of the Triple Bottom Line in Johannesburg's housing context. Although TBL is often invoked as an alternative to narrow growth-oriented planning (Elkington, 1997), the literature rarely integrates its economic, social, and environmental pillars into a coherent framework for assessing social housing. Social sustainability is particularly under-theorized in relation to tenure security, community agency, and socio-spatial justice (Parnell and Pieterse, 2010).

Thirdly, the literature often stops short of fully synthesizing housing studies with economic geography. We know, for example, that peripheralization imposes transport costs and economic disconnection on township residents, but the opportunity costs, productivity losses, and household-level effects of these locational patterns are still insufficiently understood. Huchzermeyer (2004) similarly notes that informal housing is often treated primarily as evidence of state failure rather than being analyzed in relation to survival strategies and possible incorporation into formal planning.

Taken together, these gaps justify an integrated analytical framework. The historical housing literature explains the institutional foundations of Johannesburg's spatial inequality. Gentrification literature captures the contemporary pressures of reinvestment, displacement, and urban restructuring. The TBL framework provides a multidimensional lens for assessing whether social housing can intervene in these processes in economically viable, socially

inclusive, and environmentally sustainable ways. The present study builds on this synthesis by examining whether social housing in Johannesburg can operate not only as a delivery mechanism, but as a structural tool for mediating the relationship between inherited inequality, present-day market pressures, and sustainability aspirations.

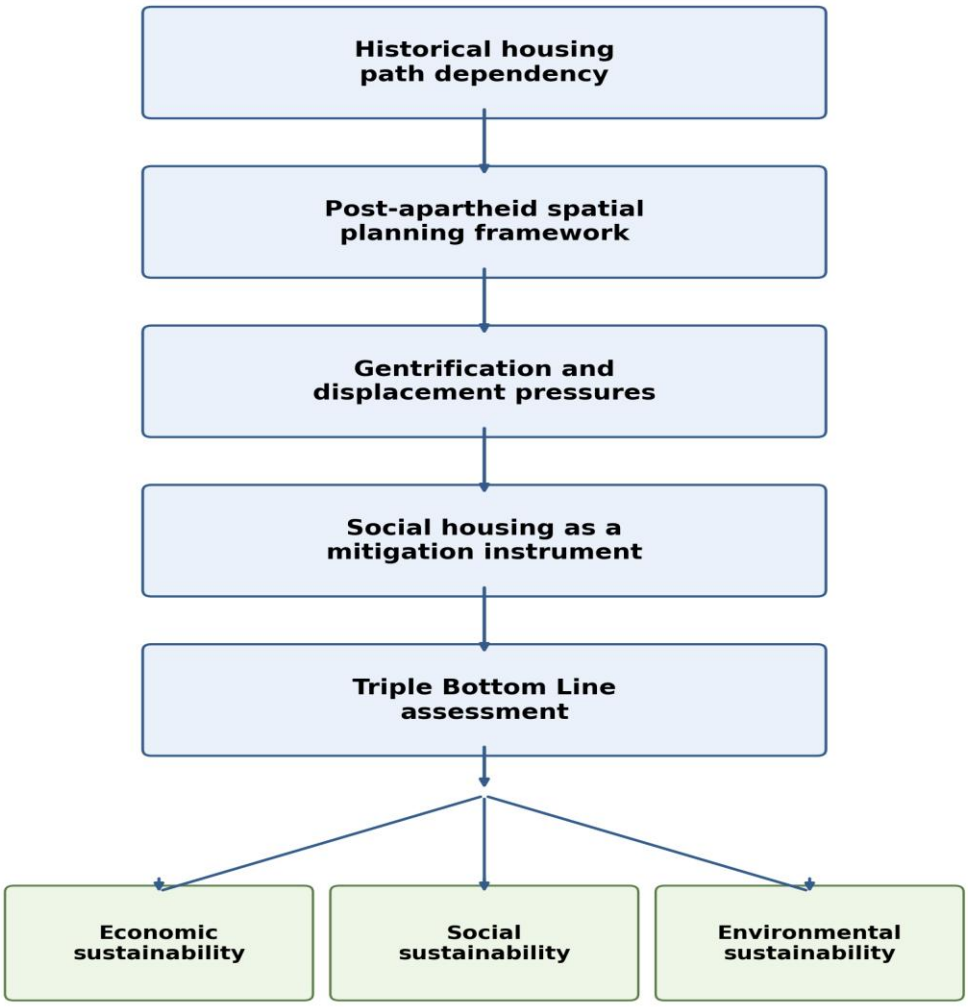

Figure 2: Conceptual Framework Diagram

Source: Author's compilation of the conceptual framework linking path dependency, gentrification, social housing, and TBL outcomes, 2025.

Figure 2 presents the conceptual framework of the study. It shows how historical housing path dependency influences post-apartheid spatial planning, which in turn shapes gentrification and displacement pressures in Johannesburg. Social housing is analysed as a mitigation instrument, and its effectiveness is evaluated using the Triple Bottom Line framework, which assesses economic, social, and environmental sustainability outcomes.

3 MATERIALS AND METHODS

3.1 Introduction to Methodology

The Johannesburg housing market is deeply rooted in the city's history, socio-economic forces, policy decisions, and urban planning strategies. It is a complex system that must be closely examined in an effort to make sense of the evolving challenges and identify long-term solutions. This research aims to tackle these challenges by utilizing the Delphi technique, a structured communication technique that enables the collection, consolidation, and extraction of expert opinions. The Delphi method has been utilized to access collective expertise to forecast future advances, gain consensus on contentious matters, and form solutions to multifaceted problems (Dalkey and Helmer, 1963). The Delphi method is suited for complicated problems such as those of the social housing sector, where numerous perspectives from numerous disciplines, such as construction, urban planning, policy, and finance, must be integrated. The social housing issues of Johannesburg, from affordability and sustainability to community engagement and gentrification require a rigorous methodological approach that will elicit expert opinion, accommodate feedback, and yield reliable conclusions.

3.1.1 The Background of the Delphi Method

The Delphi method, originally conceived by Dalkey and Helmer (1963) as a means of predicting military and technological trends, has evolved into one of the most widely used tools for achieving expert consensus. It has found application in diverse fields, from healthcare and education to business and urban planning. Delphi method has, over the years, been adapted to the needs of different research fields by incorporating iterative feedback rounds, thereby enabling the sharpening of opinions and identification of areas of consensus (Okoli and Pawlowski, 2004). In particular, its capacity to deal with uncertainty and complexity makes it especially valuable in urban studies and social housing research.

By tapping into the knowledge of experts with varied expertise, the Delphi technique facilitates novel problem-solving and the identification of innovative solutions that other techniques like surveys or case studies may not be able to grasp (Rowe and Wright, 1999). This process of altering concepts based on participant reaction iteratively works to allow the emphasis of the research to become clearer and more relevant to actual problems.

3.1.2 Main Features of the Delphi Method

The main features of the Delphi method include anonymity, iterative rounds, and feedback.

These features enable the collection of diverse expert opinions under controlled conditions and minimize the impact of groupthink, status quo bias, or personality conflict that often plagues traditional group discussions (Hasson et al., 2000). This methodological approach ensures that all participants have an equal opportunity to express their opinions, regardless of rank or position in the field, which is crucial when dealing with contentious and sensitive issues like housing policy and development.

- Anonymity: One of the most prominent aspects of the Delphi technique is its focus on participant anonymity. By ensuring that the identities of panelists are concealed throughout the process, the method reduces the chances of biases that could result from the domination of certain voices or the status of some experts (Hasson et al., 2000). In this regard, this aspect is of great importance in policy-oriented research, such as housing research, where a wide range of interests and opinions has a tendency to get engaged.
- Iterative Rounds: The Delphi method relies on multiple rounds of feedback, during which the panelists are asked to provide their opinions regarding a certain problem. After each round, the feedback is collected and analyzed, and feedback is provided to the experts, who can then change or enhance their feedback in light of the group's collective output (Gordon and Pease, 2006). This enables the research team to iteratively converge on consensus or a set of recommendations that are highly supported by the expert panel.
- Feedback Mechanism: A key advantage of the Delphi method is that it provides a platform for constructive feedback among the participants. This helps the experts to adjust their decisions and opinions based on new information, permitting ongoing refinement of concepts (Okoli and Pawlowski, 2004). This helps to ensure that the research reflects the most up-to-date and best knowledge about the problem under investigation.

3.1.3 Relevance of the Delphi Method to Housing Research

Social housing in Johannesburg, as in most urban contexts, is influenced by a wide range of forces, from government policy, market forces, and financial systems to urbanization and socioeconomic trends.

These forces are constantly changing, and this makes the demand for a research approach that is flexible and responsive paramount. The Delphi method, by allowing for multiple rounds of analysis and feedback, enables the exploration of these complex and dynamic variables over a duration of time (Gordon and Pease, 2006). The ability of the Delphi method for managing dynamic issues that evolve over time due to political, economic, and social variables makes it a particularly valuable tool for housing studies in a city as rapidly transforming as Johannesburg. Johannesburg's housing issues are multi-dimensional, including affordability, availability of land, government control, community involvement, and gentrification (Pahl, 2005; Balbo, 2005).

The Delphi method enables experts from a broad variety of fields to deal with these issues in a structural and systematic manner, leading to more informed decision-making. For example, policy analysts can tell us about policy effectiveness, while financiers and builders can provide input concerning the feasibility of residential developments. This interdisciplinary element is significant in coming to terms with the dynamics of the Johannesburg housing market (Hasson et al., 2000). Secondly, the flexibility of the Delphi method allows the researcher to change direction as more information emerges.

This is particularly important when researching social housing as the sector is ongoing to evolve in response to both national and global trends, such as economic instability, political change, and demographic shift. For instance, policy shifts in housing or fluctuations in global financial markets could necessitate changes to the concerns or feedback mechanisms used within the Delphi rounds, with the potential for real-time amendments and ongoing relevance (Rowe and Wright, 1999).

3.1.4 Specific Objectives of This Research

The research is focused on a set of specific objectives in the social housing market of Johannesburg. The objectives are meant to guide the Delphi process and focus expert opinion on the most important problems facing the city's housing market. The primary objectives of the research are:

1. Understanding the Historical Evolution of Housing Policies (O1): The objective aims to trace the evolution of social housing policy in Johannesburg, highlighting key policy shifts, state interventions, and their effects on housing affordability and accessibility.
2. Examining the Impact of Gentrification on Social Housing (O2): Gentrification is increasingly a major driver in urban areas, and Johannesburg is no exception. This

objective attempts to assess the impact of gentrification on the stock of social housing and what the implications are for local communities.

3. Evaluating the Triple Bottom Line Approach to Housing (O3): The Triple Bottom Line (TBL) approach evaluates housing policy in terms of three factors: economic sustainability, environmental sustainability, and social equity. This objective gauges the influence of these factors on the long-term success of housing policy.

The Delphi technique is a strong and versatile tool for investigating complex, evolving phenomena such as the social housing market of Johannesburg. Its ability to combine expert opinion from a variety of disciplines, minimize bias, and refine opinion through successive rounds makes it ideal for this research. Through the accessing of expertise from practitioners across a variety of fields, the research aims to develop findings that will not only enhance our understanding of the problems in Johannesburg's housing market but also provide tangible recommendations for future practice and policy. The next chapters will describe the methodology of the Delphi process, including questionnaire design, data collection, analytical techniques, and results derived from the expert consensus.

3.2 Justification for a Single-Method Design across Multiple Research Dimensions

This research adopts a single-method design, employing the Delphi technique across historical analysis, displacement dynamics, and sustainability evaluation. While multi-method approaches are often associated with greater analytical depth, the selection of a unified methodological framework in this research is intentional and theoretically grounded.

The research questions share a common analytical objective: to assess expert interpretation of structural dynamics within Johannesburg's social housing system. Although the dimensions examined mainly; historical evolution, gentrification pressures, and Triple Bottom Line sustainability appear distinct, they are conceptually interrelated within a single governance system. Employing a consistent methodological instrument enables structured comparison across these dimensions and ensures analytical coherence.

The Delphi method is particularly suited to contexts characterised by institutional complexity, fragmented data environments, and normative contestation. In post-apartheid housing governance, quantitative datasets alone cannot fully capture institutional path dependency, displacement conditionality, or sustainability implementation gaps. By structuring iterative

expert reflection, Delphi allows for cross-dimensional synthesis within a unified evaluative framework.

Furthermore, using a single method enhances internal consistency. Each research dimension is assessed through identical consensus thresholds, reliability testing procedures, and structured iteration processes. This uniformity allows for systematic comparison of agreement patterns across thematic domains, thereby strengthening interpretive integration.

The research therefore does not employ Delphi as a substitute for empirical measurement, but as an integrative analytical tool appropriate for examining governance-driven housing systems where structural interpretation and institutional experience are central to understanding transformation dynamics.

3.2.1 The Need for Collective Expert Insights

The first major justification of using the Delphi method is its ability to synthesize and integrate diverse expert opinions. Social housing in Johannesburg is a multi-disciplinary practice with many connected sectors, such as urban planning, economic policy formulation, construction, finance, and sociology, among others. All these disciplines have diverse perceptions and knowledge, and to adequately address the housing crisis in the city, it is essential to incorporate the knowledge and information from experts in all these disciplines.

Whereas traditional research methods, such as interviewing or questionnaires, are commonly founded on single response, the Delphi method provides a structure for group knowledge-creation. By the exchange of experts from numerous fields and allowing them to dialogue indirectly through means of anonymous remark, the method allows for an environment where collective experience may occur. This is particularly crucial for understanding and seeking solutions in the property market, as no single perspective can possibly provide a complete solution. The collective perception of experts, refined through successive iterations of comments, is more likely to provide a more comprehensive and stronger set of recommendations than any individual opinion could ever provide (Okoli and Pawlowski, 2004).

Members of the Delphi panel are typically selected on the basis of their expertise and experience in the fields of housing finance, government policy, urban planning, and community development (Hasson et al., 2000). The multidisciplinary composition of this panel guarantees that the research results are not limited by any single discipline but, instead, account for the

variety of the housing problems in Johannesburg. For instance, understanding the impacts of gentrification on social housing (Objective O2) requires input from both urban planners and sociologists, while a research of the Triple Bottom Line (TBL) of housing policy (Objective O3) requires an understanding of economic sustainability, environmental factors as well as social inclusion. The Delphi method provides such synthesis of various inputs and provides an interdisciplinary view of the housing issue at hand.

3.2.2 The Dynamic and Complexity of the Housing Problem

A further key cause for applying the Delphi technique is the complexity and dynamics of the problem. Social housing in Johannesburg is determined by a wide range of constantly changing variables, including economic readjustments, policy changes, urbanization trends, and technological advances. They are interconnected and often produce unforeseen outcomes, making traditional, non-dynamic research methods difficult to apply.

For instance, the cost of housing in Johannesburg depends on both global economic factors and domestic policy. Changes in interest rates, inflation, or housing market movements can substantially affect the cost of housing, while local policies (e.g., subsidies, land use planning) might influence the availability and affordability of housing. Similarly, gentrification of other areas could lead to a transformation of the socio-economic structure of the city, and low-income residents will find it increasingly difficult to secure accommodation (Pahl, 2005). By making use of professionals who are well conversant with these complex factors, the Delphi method provides a structured process of uncovering the inter-relationships between various issues, thus contributing to the identification of potential solutions.

In addition, the Delphi method's iterative nature is particularly well-suited to dynamic topics like housing because it allows for continuous refinement and adjustment of the research as more information is acquired. For example, participant reaction in early rounds could produce unforeseen obstacles or emerging trends that can be incorporated into subsequent rounds of research so that results are at once relevant and current (Hasson et al., 2000; Beier et al., 2021).

3.2.3 Dealing with Uncertainty and Forecasting Future Directions

A third reason for using the Delphi method is that it can deal with uncertainty as well as forecast future directions. Housing research, especially in urban areas, is usually very uncertain due to factors such as changing demographics, policy interventions, and market trends. Johannesburg's housing need, for instance, may change with population expansion, changes in income levels, or migrant patterns (Park et al., 2024). In the same way, gentrification, as

exhibited in most cities, presents huge uncertainties regarding the forced displacement of low-income households and potential effects on affordable housing supply (Smith et al., 2019).

The Delphi process of repeated feedback is particularly worth its weight in such a scenario, as it allows for anticipating future trends and uncovering future challenges. Through the provision of an expert opinion in multiple rounds of consultation, the method can reveal potential scenarios for the future that are not necessarily clear from present data. For example, experts can identify the possibility of housing bubbles in Johannesburg in the future or forecast a shift in the government's policy towards social housing. This forward-looking aspect of the Delphi method makes it very useful in the delivery of forecasting responses and setting long-term policies to address the housing crisis.

Also, the Delphi method's capacity for aggregating expert opinion helps minimize the inherent uncertainty in forecasting through the delivery of a consensus-based approach. Instead of relying on single predictions, the Delphi method allows multiple potential scenarios to be generated, which present decision-makers with a clearer sense of potential futures (Rowe and Wright, 1999). This is particularly applicable for policy formulation or forecasting markets, where there are a number of future prospects present.

3.2.4 Minimizing Bias through Anonymity

Another built-in strength of the Delphi method is that it can minimize group dynamic biases, social stratification, or dominating personalities. With in-person group interviews or discussions, participants might be influenced by status disparities, wherein persons of higher status (e.g., government officials, renowned experts) would dominate, tilting the outcomes. Moreover, groupthink, a psychological phenomenon whereby participants tend to agree with the majority simply to avoid conflict, can potentially undermine accuracy and validity of results.

Anonymity of the Delphi approach prevents that because participants are unaware of one another's names and hence less likely to be influenced by external pressures. Anonymity also allows participants to be comfortable in expressing their true opinion without fear of judgment or punishment, which leads to honest and reflective feedback (Hasson et al., 2000). For the case of housing research, this factor is of significant importance because it ensures that opinions from experts are evaluated on merit and content, and not based on position or standing in the discipline.

3.2.5 Consistency with Research Objectives

Delphi technique is particularly suited for this research's specific goals, namely to understand the social housing complexities in Johannesburg. Seven specific and interrelated objectives form the research:

1. Historical analysis of housing policies (O1)
2. Understanding gentrification patterns (O2)
3. Evaluating the Triple Bottom Line strategy (O3)

For each of these objectives, there needs a full understanding of the political, economic, and social determinants that shape the housing scenario in Johannesburg. The Delphi method's iterative aspect allows the research to obtain multiple rounds of expert views in order to refine and focus the research. Through leveraging expert knowledge from diverse sectors; government, urban development, construction, and finance the Delphi method is able to yield a more precise and comprehensive analysis of every goal (Gordon and Pease, 2006).

Furthermore, the Delphi method's capacity for dealing with intractable problems and achieving consensus makes it especially well-suited for contentious or uncertain themes, including gentrification's effects on poor communities or the use of the Triple Bottom Line for social housing (Hasson et al., 2000). Since the housing issues of Johannesburg are numerous and contentious, the Delphi method offers a systematic yet adaptable method for combining expert views and drawing well-educated conclusions.

The use of the Delphi method in this research is justified by its ability to address the complex, multifarious, and dynamic housing issues in Johannesburg. With the combination of expert opinions, reduction of bias, and potential for forecasting future trends, the Delphi method provides a robust methodology for generating well-informed, consensus-driven observations on the social housing issues in the city. Moreover, its ability to hone and refine questions through iterative cycles renders it an ideal instrument for dealing with the dynamic character of housing in the nation. In the following sections, we shall examine the procedural steps, data collection plans, and ethical issues that guided the use of the Delphi technique in this research.

3.3 Steps in the Delphi Process

The Delphi process is a highly structured method of soliciting expert opinion and building consensus regarding a complicated problem. This is the section explaining the intensive processes employed in the Delphi process of this research on social housing in Johannesburg. These include the selection of the facilitator, panel of experts, problem definition, question

design, rounds, and consensus-building process. Each one of these components was crafted with care to ensure that the process was scientific, robust, and transparent. The following subsection explains every one of these steps sequentially, detailing the choice that was made and how it contributed to the research process.

3.3.1 Selection of Facilitator

In Delphi technique, the role of facilitator is very important in ensuring that the research upholds methodological rigor and objectivity in the process (Linstone and Turoff, 1975). The author in this research acted as the facilitator whose responsibility was to develop the research model, formulate the questions, carry out the rounds, and maintain ethical concerns. The facilitator had the responsibility of making the process impartial and unbiased, and maintaining communication channels with the participants to encourage participation and collaboration.

Lacking an administrative team, the facilitator was left with the responsibility of coordinating the logistics and technicalities of the process. This involved generating and distributing online questionnaires per round, conducting virtual meetings if needed, and coordinating the collection and analysis of the data. Even in the absence of an administrative team, organizational and time management skills were most important to ensure a smooth flow of the research. In the absence of an administrative team, personal high involvement and attention to detail were required from the facilitator.

The complexity of the research also meant that the facilitator had to be a specialist in social housing and research methods, with a clear understanding of the Delphi process. The facilitator's role was critical in maintaining uniformity and methodological precision throughout the process, ensuring accuracy and validity in results.

3.3.2 Panel of Experts

The Delphi method's success is heavily reliant on the selection of the expert panel. A specific panel of 20 experts was selected for the purpose of this research to understand the complexities of social housing in Johannesburg. The panel included experts from an array of related fields to ensure multidisciplinary selection that would yield varied perspectives on the various domains that fell under the scope of the research. The panel comprised the following five categories:

1. Five Contractors: Individuals who are experts in the construction and development of housing schemes. Their experience provided insight into how practical various housing

designs were, what problems were faced with the construction of low-cost housing, and the technical complexities of construction in Johannesburg.

2. Five NHBRC Officials: Officials of the regulatory authority that governs the home construction industry. Their contribution was critical in understanding the regulatory environment, the housing standards and the quality control mechanism of the South African housing market.
3. Five Officers from Johannesburg Metropolitan Municipality (City of Johannesburg): These experts provided a governmental perspective, with experience in urban planning, zoning requirements, policy implementation of housing, and local government. Their experience was crucial to understanding the socio-political context upon which housing decisions are made in Johannesburg.
4. Five Experts from three of the biggest South African commercial Banks: Officials from three major commercial banks with operations across the country explained the financial challenges to homeownership, the contribution made by initial financing for a project in social housing, and how the banks fund affordable housing schemes.

Selection of these diverse experts was based on their data, experience, and direct involvement in the Johannesburg housing sector. Experts were approached on the basis of reputations in their respective fields, and willingness to provide input and openness for an iterative process of feedback. All panelists were asked to provide knowledgeable opinions on a number of aspects of the social housing issue, but be open to adjusting their opinions based on feedback from other peers.

Involvement of the experts with backgrounds that were so diverse was fundamental to the process of making sure that the outcome of the research would be balanced and all-inclusive, given that social housing issues are multidimensional and complex in nature. The expert panel for this study was intentionally composed of professionals directly involved in housing governance, urban planning, housing delivery, and related policy environments in Johannesburg. The objective of the Delphi process was to capture informed institutional perspectives on the structural dynamics of social housing, gentrification pressures, and sustainability implementation within the housing system.

While residents and community-based actors represent important stakeholders in housing debates, the focus of this research was on policy interpretation and institutional decision-making processes rather than on lived experience at the household level. For this reason, the

panel prioritised individuals with professional expertise in housing regulation, planning, development, and urban governance.

Future research could complement this governance-oriented perspective by incorporating participatory or community-based methodologies in order to explore resident experiences and grassroots interpretations of housing transformation processes.

3.3.3 Top-Down Perspective in the Delphi Research

This research adopts a top-down perspective when examining housing issues in Johannesburg in order to align with the methodological framework of the Delphi technique. The Delphi method relies on the structured consultation of experts who possess specialized knowledge in a particular field. In the context of housing research, these experts often include urban planners, housing policy specialists, academics, and government officials who operate at institutional and policy levels. A top-down perspective is therefore appropriate as it enables participants to provide insights based on their understanding of broader housing systems, governance structures, and policy frameworks.

Housing challenges in Johannesburg are influenced by a variety of macro-level factors such as national housing policies, urban planning regulations, land use management, and infrastructure distribution. Adopting a top-down perspective allows the research to examine how these structural factors shape housing development and accessibility across the city. This perspective is particularly useful in a Delphi research because it facilitates the identification of systemic issues and strategic priorities rather than focusing solely on localized experiences.

Furthermore, the use of a top-down approach supports the primary objective of the Delphi method, which is to achieve consensus among experts on complex issues. By focusing on policy-level and institutional perspectives, participants are able to engage with shared frameworks and evaluate potential solutions from a strategic standpoint. This enables the research to generate informed recommendations that are relevant to urban planning and housing policy in Johannesburg.

While this research adopts a top-down approach due to the expert-based nature of the Delphi method, it also recognises that a bottom-up perspective that captures the experiences of communities and residents could provide valuable insights. Such perspectives could be explored in future research to complement the expert-based findings of this research.

3.3.4 Problem Definition

Identification of the primary research problem was among the most significant phases in the Delphi process. A clearly defined problem ensures that all the experts are tackling the same questions and research process is effective and aim-oriented (Hasson et al., 2000). For this research, the research problem was defined as the identification of strategies to increase affordability, sustainability, and social inclusion of Johannesburg's social housing with a particular emphasis on exploring the relationship among socioeconomic determinants, policy instruments, urbanization trends, and finance tools.

The problem was framed with regard to suitable literature and policy reports that outlined problems facing the Johannesburg housing market. This literature review helped in framing research questions and ensured that the investigation was targeted within the existing corpus of knowledge and responded to gaps in the prevailing understanding of social housing problems. By examining the interrelation between different factors, the research sought to acquire knowledge that would be utilized in the formulation of policy-making, urban planning, and housing finance policy in the city. The problem definition phase also ensured that the research's objectives were blended with stakeholders' priorities and requirements in the housing sector, such as government policymakers, construction experts, and financial institutions. This ensured that the Delphi process would provide outcomes that not only theoretically made sense but were also sensitive to real-world implications of pragmatic concerns.

3.3.5 Question Design

Question development is an integral component of the Delphi method since it is on the quality of the questions that the quality of the answers, and consequently the research findings, are reliant (Hasson et al., 2000). Questions in this research were designed to encapsulate the specific research objectives, targeting to be aligned with the overall themes that were developed in the problem definition. The questions aimed to elicit a combination of open and closed-ended thinking and, as such, enabled both qualitative data and quantitative data to be gathered.

The first group of questions aimed to trace the evolution of housing policy in Johannesburg (Objective O1), to analyze the process of gentrification (Objective O2), and examine The Triple Bottom Line (TBL) model (Objective 3) was presented as being open ended. Responses from this round would then be fed into the next rounds until there was agreement on key themes of the research. Questions had been pilot-tested with a test group of five experts before being

distributed to the full panel of 20. Pilot group feedback had been taken on board to adjust the questions and make them concise and pertinent to the objectives of the research.

3.3.6 Iterative Rounds

The Delphi method stands out by being iterative, with multiple rounds of information gathering and feedback. This structure allows idea sharpening and convergence toward a point of agreement (Linstone and Turoff, 1975). The Delphi process in this research was conducted over four rounds. The first round had open-ended questions that were meant to gather wide-ranging views of opinions from the experts. In this round, the panel members were requested to offer their views on the research problem, present practice from their workplace, and suggest potential solutions to the issues in question.

The second, third and fourth rounds were more structured, with the questions more pointed after feedback that had been obtained from the previous rounds. These rounds were mainly quantitative using e.g., Likert-scale questions, which allowed the research to identify areas of agreement and disagreement among experts. In each round, the participants were provided with anonymized summaries of the previous round's replies, which allowed them to reassess their views based on the collective group feedback.

The iterative cycle ensured that the research contained the ability to track the changes in expert opinion over time and determine how consensus emerged and how emerging evidence became apparent throughout the research.

3.3.7 Reaching Consensus

The final stage of the Delphi process was consensus achievement. Consensus in this research was reported to be achieved if at least 75% of the members of the panel agreed on significant portions of the research issue. This figure was a recommendation based on previous Delphi research, which suggests that a consensus of about 70%-80% is usually adequate for the validation of findings (Hasson et al., 2000). The 75% value was then allocated as it is a midpoint between conventional scientific Delphi research. The research did not opt for the 70% value as it aimed at achieving more precise scientific rigor.

Once agreement had been reached, the facilitator captured the experts' final consensus, drawing conclusions and developing actionable recommendations from the aggregated comments of the experts. The process allowed for the development of actionable, consensus-based strategies, which can be utilized to inform the development of more effective social housing policies in Johannesburg.

3.4 Data Collection and Analysis Techniques

Data collection is an essential part of the Delphi method, where rigorous planning and structured processes are necessary to ensure the reliability and validity of the findings. Given the iterative nature of the Delphi process, this section outlines the data collection procedures, the types of data collected, the analysis techniques employed, and the use of hypothesis testing to assess the validity and strength of the findings. In this research, the first round of data collection was done through face-to-face meetings with experts at their respective offices, with subsequent rounds following a structured feedback process. This allowed for a more direct engagement with the experts, facilitating more nuanced insights, ensuring clarity in understanding the questions, and fostering a more robust interaction between the researcher and participants.

3.4.1 Data Collection Procedures

Table 2: Data collection procedure

Step	Details
Direct Interaction with Experts	For the first round of data collection, the researcher conducted in-person interviews with each of the 20 experts involved in the Delphi research. These experts were selected from various sectors related to the housing industry in Johannesburg. The decision to conduct face-to-face meetings was driven by the need to establish rapport and ensure expert engagement. Face-to-face interactions also allowed for in-depth discussion of research objectives, ethical considerations, and ensured better clarity regarding research methodology.
Purpose of In-Person Interviews	The in-person meetings helped establish rapport, clarify research objectives, and provide opportunities to ask follow-up questions. Non-verbal cues could also be observed, offering deeper insights into the experts' engagement with specific topics (Maganadisa et al., 2021).
Procedure for First Round of Data Collection	1. Preparation: A set of open-ended questions was developed, aligning with research objectives. Experts were informed of the research's purpose and methodology prior to the meeting. 2. Interviews: Each expert was asked the same set of questions, ensuring consistency. 3. Clarification: Follow-up questions were asked as necessary to ensure comprehensive understanding. 4. Recording Responses: Responses were transcribed immediately after the interview to minimize errors.
Types of Data Collected	Data collected in the research included both qualitative and quantitative information. The first round primarily involved qualitative data, while subsequent rounds focused on refining the results through quantitative measures to build consensus.
Qualitative Data	The first round gathered qualitative insights from experts on topics such as social housing history, gentrification, social innovation, and institutional governance. Open-ended questions were used to explore the complexities of these issues.
Data Analysis Method (Qualitative Data)	Responses were transcribed and analyzed using thematic analysis identifying recurring themes and patterns to understand the challenges and opportunities in Johannesburg's housing sector.
Quantitative Data	In later rounds, Likert-scale questions were introduced to measure expert agreement with statements about social housing policies, such as: "The government's current social housing policies are sufficient to address the affordability crisis in Johannesburg."
Data Analysis Method (Quantitative Data)	Likert-scale responses were analyzed using descriptive statistics, such as medians and quintile percenteges, to quantify the strength of consensus among experts and provide valuable insights for refining the Delphi research's outcomes.

Source: Author's compilation based on the research design and Delphi methodology, 2025.

Table 2 summarises the data collection procedure used in the Delphi study. The first round involved face-to-face interviews with 20 housing experts in Johannesburg to gather qualitative insights on social housing, gentrification, and governance issues. Subsequent rounds used

Likert-scale questionnaires to quantify expert agreement, and the responses were analysed using thematic analysis for qualitative data and descriptive statistics to measure consensus.

3.4.2 Delphi panel attrition and timeline

Table 3: Delphi Panel Attrition

Phase	Activity	Time Period	Duration and Purpose	Resoponnse rate (n=20)
Phase 1	Development and pilot testing of Delphi instrument	[05/2025: 06/2025]	[3 weeks] Refinement of questionnaire items and indicator alignment	100%
Phase 2	Delphi Round One distribution and response period	[07/2025:08/2025]	[2 weeks] Collection of initial expert evaluations to create word cloud	100%
Phase 3	Delphi Round Two distribution with controlled feedback	[08/2025-08/2025]	[3 weeks] Aggregation of consensus levels and synthesis of expert commentary	100%
Phase 4	Delphi Round Three distribution with controlled feedback	[09/2025-10/2025]	[3 Weeks] Structured reconsideration and refinement of responses	100%
Phase 5	Delphi Round Four distribution with controlled feedback	[10/2025-111/2025]	[3 Weeks] Structured reconsideration and refinement of responses	100%
Phase 5	Follow-up clarifications (where applicable)	[10/2025-11/2025]	[4 weeks] Resolution of ambiguities and confirmation of interpretive accuracy	N.A
Overall Research Period	Total Delphi data collection phase	[05/2025-11/2025]	[5-6 months]	Completion of iterative consensus process

Source: Author's compilation based on the panel attrition, 2025.

Table 3 presents the timeline and phases of the Delphi research process**.** The study was conducted between May and November 2025 and included instrument development, four

iterative Delphi rounds, and follow-up clarifications. Each phase aimed to refine expert responses and build consensus, with a 100% response rate maintained across all Delphi rounds.

3.4.3 Data Analysis Techniques

Once the data were collected, they were processed and analyzed using a combination of qualitative and quantitative analysis techniques.

Table 4: Data analysis techniques

Step	Details
Familiarization with Data	After transcribing the interviews, the researcher thoroughly reviewed the responses to become familiar with the data and identify initial patterns and ideas.
Initial Coding	Codes were generated to represent key concepts mentioned in the responses. For example, key concepts included: “affordability”, “policy change”, and “community engagement.”
Theme Identification	The coded data were grouped into broader themes that encapsulated key issues discussed by experts. These themes were refined through iterative cycles of data analysis.
Reporting Findings	The final themes were organized and reported in relation to the research objectives. Illustrative quotes from participants were used to support the findings.
Descriptive Statistics	For the quantitative data collected in later rounds, descriptive statistics were applied to summarize and interpret expert responses. Key statistical measures included:
Mean	The average score for each Likert-scale question, providing insight into the central tendency of expert opinions.
Quintile percentage	Used to assess the variability or dispersion of responses, helping the researcher gauge the degree of consensus among experts.
Frequency Distribution	Used to indicate the distribution of responses across Likert-scale options, identifying areas of highest agreement or disagreement.
Purpose of Descriptive Statistics	These statistical techniques helped summarize quantitative responses, providing a clear picture of the areas where experts converged or disagreed on housing-related issues.

Source: Author’s compilation based on employed data analysis techniques, 2025.

Table 4 outlines the data analysis procedures used in the study. Qualitative interview data were analysed through thematic analysis, involving familiarisation with the data, coding, theme identification, and reporting of findings. Quantitative data from later Delphi rounds were analysed using descriptive statistics, including means, quintile percentages, and frequency distributions to assess patterns of expert agreement and levels of consensus.

3.4.4 Integration of Data

The integration of qualitative and quantitative data was an essential aspect of this Delphi research. By combining the detailed insights from the thematic analysis with the numerical data from the Likert-scale questions, the research was able to triangulate findings and develop a more comprehensive understanding of the issues at hand.

The qualitative themes informed the design of the quantitative questions, and the quantitative analysis helped confirm or challenge the insights derived from the qualitative responses. This iterative approach provided a more holistic view of the research problem and strengthened the research's findings. The data collection and analysis techniques employed in this research allowed for a comprehensive and rigorous examination of the social housing sector in Johannesburg. The use of direct interviews, thematic analysis, descriptive statistics, and hypothesis testing enabled the researcher to gain both depth and breadth of understanding from a panel of experts. Through the integration of qualitative and quantitative data, the research provided valuable insights that can inform future housing policies and practices in Johannesburg.

3.4.5 Consensus Threshold Determination

In Delphi-based research, the definition of consensus is not fixed and varies across studies depending on the complexity of the research topic and the size of the expert panel. Previous methodological studies commonly report consensus thresholds ranging between 70% and 80% agreement among participants (Hasson et al., 2000; Qumbisa et al., 2025). Within this range, a threshold of 75% is widely considered an appropriate balance between methodological rigour and the need to capture meaningful convergence of expert judgement.

Given the relatively small and specialised expert panel in this study, a consensus threshold of 75% agreement was adopted to determine whether a statement was sufficiently supported by the experts. This threshold ensures that conclusions reflect a clear majority of expert opinion while avoiding overly restrictive criteria that could obscure emerging policy insights in complex governance environments.

Therefore, statements reaching or exceeding 75% agreement among panel members were interpreted as representing expert consensus and were used to inform the evaluation of the research hypotheses.

3.5 Ethical Considerations

Ethics are a crucial aspect of any research, particularly when using human subjects. A research's success and credibility are not only based on the research methodology and research analysis but also on the ethics observed while conducting research. In this case of this Delphi research, where expert opinions were solicited, informed consent, confidentiality, and participant welfare were given highest priority. The remainder of the chapter describes the ethical processes used in this research, focusing on those processes that ensured respect for participants' rights, management of data, and adherence of the research to relevant ethical requirements.

3.5.1 Informed Consent

The informed consent is a maxim in ethical research that ensures the participants have full knowledge of the research purpose, procedures, and associated risks prior to signing up to participate (Hasson et al., 2000).

Before undertaking the research, participants received an informed consent document explaining the purpose of the Delphi research, aim of the research, and data collection measures. The document provided details about the focus of the research on social housing in Johannesburg, the nature of the questions being asked, and what was to be explored with the data. As an interesting note, the participants were informed that they could withdraw from the research at any time without experiencing any unwanted consequences.

The consent form placed great importance on privacy protocols enacted to preserve participant anonymity and guarantee the data would only be used for research purposes. Experts were given the option to submit questions about the research and were invited to request further clarification when needed.

3.5.2 Confidentiality and Anonymity

Confidentiality and anonymity are important features of ethical research, particularly in studies such as this where expert opinion is being invited on sensitive topics like housing policy, social dynamics, and market trends. In this Delphi exercise, anonymity was ensured by coding participants' responses and excluding all identifiable data from the final report. Each of the

experts was assigned a unique identification number so their responses could be traced and examined while they remained anonymous.

Personal and professional information confidentiality was maintained by restricting access to raw data. In-depth data was viewed only by the chief researcher, and respondents could not be linked with any of the experts. Electronic files were encrypted and placed in safe storage to prevent unauthorized access.

Moreover, all recorded interviews of the first round data collection were transcribed by the researcher to ensure that responses remained anonymous. Transcriptions remained confidential and only accessible to the researcher. Upon analysis of data, identifying information was masked from data set before sharing results with external parties.

It is important to maintain anonymity in the Delphi process because it eliminates biases that could be caused by hierarchical or power relationships in group dynamics, whereby more powerful or higher-status individuals' ideas would inadvertently override the ideas of others (Linstone and Turoff, 1975). Keeping the experts anonymous, the Delphi method guarantees that each expert's view will be judged on its merit, and not on their professional standing or influence.

3.5.3 Voluntary Participation and Right to Withdraw

The principle of voluntary involvement constitutes the cornerstone of ethical research. All the experts participating in this Delphi research were informed that participation was entirely voluntary and that they could withdraw from the research at any time without having any negative impact. This was emphasized at the outset of the research process, and participants were reminded of this right in the informed consent form.

Voluntary involvement further means that the participants could choose not to answer some of the questions in the interview or later rounds if they felt uneasy or did not desire to share their opinion on a particular issue. In the ethical process, participants were advised that they were able to skip questions in the Delphi rounds without any consequences. This avoided forcing them to answer something they did not want to provide an answer on.

3.5.4 Reporting and Transparency of Findings

Transparency is perhaps the most significant ethical principle, especially where the use of expert opinion and personal judgment is demanded by the research. The research here was transparent from question design to data analysis and reporting of findings. At the beginning

of data collection, it was informed to the experts that they would be studied collectively and that their identifying details would not be revealed. The experts were also told that the results of the research would be distributed in aggregate format so that the information would be brought forward as a body rather than separate thoughts being fragmented. At the final reporting stage, all was reported openly and in good faith. Where even there were differences and disagreements among the experts, these were reported openly, providing a realistic picture of the consensus-building process.

3.5.5 Minimizing Bias and Power Relations

As discussed above, one of the greatest advantages of the Delphi method is that it can eliminate biases and power inequalities that may be present in face-to-face group discussion. This research did its best to eliminate the threat of bias by keeping all opinions of the experts equal. The anonymity procedure limited the influence power that could be placed based on participant status, experience, or professional position.

For instance, all government agency experts and private institution experts were treated with equal respect in analysis. There were no preconceived assumptions or presuppositions for the validity or importance of any group's response. Experts were also requested to provide genuine answers with the guarantee that their names would not be revealed, and their contribution would be analyzed in terms of their response content only.

3.5.6 Resolution of Potential Conflicts of Interest

There is always room for conflict of interest in any research that is based on expert opinions, particularly when the participants have a stake in the matter being studied. Contractors, for example, would have interests related to the construction of housing developments, while municipal officers may be interested in policy enforcement. The research was proactive in the sense that it made sure that all of the experts were reminded of the need for objectivity and neutrality.

Ultimately, this chapter explained how the method employed for collecting expert opinion on the challenges and opportunities of social housing in Johannesburg was done.

The Delphi approach, which is an iterative and systematic process, was an ideal choice for this research, being a strenuous method of producing and expanding on expert opinion while being free of biases associated with traditional face-to-face interviews or focus groups. Through the research's inclusion of 20 professionals with diverse backgrounds, including contractors, officials from the NHBRC, commercial banking personnel, and municipal officials, the

research managed to draw on a valuable reservoir of experience and expertise, thus rendering its findings credible and trustworthy. The stringent methodological design, the elaborate participant selection, the framing of research questions, and the iterative systematic process allowed the research to address the intricate problems of housing affordability, sustainability, and inclusiveness in Johannesburg. With several rounds of iteration and feedback, agreement was achieved on key issues, and pragmatic recommendations were developed to guide future policy and practice.

Ethical seriousness was maintained during the research, and careful attention was paid to informed consent, confidentiality, voluntary participation, and anonymity. All of these ethical issues served to help avoid unfair treatment of participants and respect for participants' rights, all further increasing the validity and integrity of the research. Clarity in reporting findings and proactive efforts in avoiding potential biases and conflicts of interest also further aided the research in maintaining high ethical standards.

In conclusion, the Delphi method's synergy of expert consensus development, anonymity, and successive feedback was appropriate for the research of Johannesburg's complex social housing problems. The knowledge developed through this process is expected to guide the development of more effective and equitable housing policy and practice towards sustainable and equitable development in the city's housing sector.

3.6 Reliability and Hypotheses Testing

Reliability testing was conducted to assess the internal consistency and stability of expert ratings within the Delphi process, and to support hypothesis testing in this research. Although Delphi studies emphasise iterative consensus rather than statistical unanimity, it remains important to evaluate how consistently experts applied the 1–5 Likert scale when rating items under each research question. In this research, hypothesis testing was undertaken through structured expert consensus, supported by reliability and stability analysis, rather than through parametric significance testing.

Reliability analysis in this context does not seek to enforce uniformity of opinion, but rather to document the nature of agreement, divergence, and opinion stability across Delphi rounds. Hypotheses were tested by examining whether expert responses converged sufficiently to support the propositional claims associated with each research question, using predefined consensus thresholds alongside descriptive and reliability measures.

For this purpose, Fleiss' Kappa (κ) was used as the primary measure of inter-rater reliability. Fleiss' Kappa is specifically designed to assess agreement among multiple raters using categorical response options and is therefore appropriate for Delphi studies employing Likert-scale data. Fleiss' Kappa compares the observed level of agreement in expert ratings with the level of agreement that would be expected by chance. In this research, κ values were calculated separately for each research question, providing reliability estimates for clusters of statements related to structural and historical drivers (RQ1), gentrification and intervention strategies (RQ2), and future-oriented Triple Bottom Line considerations (RQ3).

The κ values obtained indicated slight agreement across all research questions. This outcome is consistent with established Delphi literature, particularly in studies addressing complex socio-economic, policy, and sustainability issues. Low κ values do not imply unreliable or poor-quality data; rather, they reflect the diversity of expert backgrounds, disciplinary perspectives, and interpretive approaches to Likert-scale scoring. Importantly, Fleiss' Kappa captures numerical agreement in category selection rather than conceptual or directional alignment. In this research, strong percentage-based consensus and qualitative explanations demonstrated meaningful thematic convergence even where κ values were modest. Fleiss' Kappa therefore functioned as a descriptive reliability indicator rather than a determinant of hypothesis acceptance or rejection.

To complement Fleiss' Kappa, Kendall's Coefficient of Concordance (W) was employed to assess within-round agreement among experts. Whereas Fleiss' Kappa evaluates agreement across discrete response categories, Kendall's W examines the extent to which experts demonstrated consistency in the relative ordering and prioritisation of statements within each Delphi round. This distinction is methodologically important, as experts may agree on the general direction of responses while differing in the relative importance they assign to specific issues. Kendall's W therefore provided additional insight into the internal coherence of expert judgement within each round of the Delphi process.

Response stability across Delphi rounds was assessed using the Friedman test. The Friedman test is a non-parametric alternative to repeated-measures ANOVA and is appropriate for ordinal Likert-scale data collected from the same participants across multiple rounds. Its purpose in this research was to evaluate whether expert responses to the same statements changed significantly over successive rounds, thereby indicating whether opinions were stabilising or continuing to evolve.

In addition to agreement measures, the Chi-square test, Spearman rank Correlation, Kruskal Wallis test response stability across Delphi rounds was assessed to support hypothesis testing by determining whether expert opinions were converging or stabilising over time. Stability was evaluated by examining changes in response distributions across successive rounds using non-parametric procedures appropriate for ordinal, repeated-measures data. Stability in responses was interpreted as evidence that expert judgements had matured and that consensus relevant to hypothesis testing had been achieved, while observed changes were interpreted as iterative refinement rather than inconsistency.

Hypothesis testing was conducted through a combination of predefined consensus thresholds, descriptive statistics (percentage agreement, medians, and interquartile ranges), and reliability and stability analysis. Taken together, these methods provided a coherent and methodologically appropriate framework for evaluating the research's hypotheses within a Delphi research design.

Table 5: Statistical Methods Used in the Delphi Analysis

Statistical Method	Purpose in the Study	Type of Data Used
Consensus Percentage	Measures level of expert agreement for each statement	Likert-scale responses
Median	Identifies the central tendency of expert ratings	Ordinal data
Interquartile Range (IQR)	Measures dispersion and stability of expert responses across rounds	Ordinal data
Fleiss' Kappa	Measures inter-rater reliability among multiple experts	Categorical/ordinal responses
Kendall's W	Measures rank agreement across Delphi rounds	Ranked ordinal responses
Friedman Test	Evaluates differences in rankings across Delphi rounds	Repeated ordinal measures
Chi-square Goodness-of-Fit	Tests whether response distributions differ significantly from a neutral distribution	Frequency counts
Spearman Rank Correlation	Examines relationships between key research dimensions	Ordinal data
Kruskal–Wallis Test	Tests differences in responses across occupational groups	Ordinal data

Source: Author's methodological framework, 2026.

Table 5 shows the statistical methods employed in the research. The combination of consensus measures, reliability statistics, and non-parametric tests provides a comprehensive analytical framework suitable for Delphi studies based on expert judgement and ordinal survey data.

3.7 Methodological Contribution of the Delphi Approach in Urban Housing Research

The application of the Delphi method in this research extends beyond its procedural function as a tool for gathering expert opinion. Its methodological contribution lies in its capacity to structure deliberation within a complex and contested policy environment characterised by institutional fragmentation, competing governance logics, and multi-scalar housing pressures.

Urban housing systems, particularly in post-apartheid contexts, involve overlapping regulatory frameworks, fiscal constraints, political priorities, and market dynamics. Traditional survey instruments may capture attitudes, but they do not facilitate iterative reflection or structured convergence. The Delphi method, by contrast, enables controlled feedback loops, allowing participants to reconsider their positions in light of anonymised group responses. This iterative structure enhances reflective judgment and reduces the dominance effects often present in face-to-face expert panels.

In the context of this research, Delphi serves three methodological purposes. First, it enables synthesis of multi-sectoral expertise, incorporating perspectives from planners, policymakers, housing practitioners, and institutional actors. Second, it provides a structured mechanism for measuring convergence and divergence across thematic domains, thereby making professional disagreement analytically visible. Third, it allows sustainability and displacement questions often treated qualitatively to be assessed within a semi-quantitative consensus framework.

The methodological contribution therefore lies in demonstrating that Delphi can function as an integrative governance-analysis tool in urban housing research. Rather than treating sustainability, displacement, and institutional evolution as separate domains, the method enables their structured evaluation within a unified analytical design.

By applying consensus measurement (percentage agreement), inter-rater reliability (Fleiss' Kappa), and rank concordance (Kendall's W), the research illustrates how Delphi can bridge qualitative interpretation and quantitative assessment.

4 RESULTS AND DISCUSSION

4.1 Introduction

The results are drawn from a multi-round Delphi research involving 20 experts from four stakeholder groups: bank employees, city officials, contractors, and National Home Builders Registration Council (NHBRC) officials. Consensus was defined as ≥75% agreement (Agree + Strongly Agree responses). The data are presented using frequency tables, measures of central tendency (Median), measures of dispersion (Interquartile Range, IQR), and visual summaries.

Formulas:

$$\textit{Interquartile Range (IQR) = 3rd Quartile (Q3) - 1st Quartile (Q1)}$$

$$\textit{IQR = Q3: Q1}$$

$$\textit{And}$$

$$\textit{Consensus: Agree + Strongly} \geq \textit{75\%.}$$

4.2 Research Question 1: Historical Analysis

Research Question 1:

How has social housing evolved in Johannesburg over time, including its origins, policy changes, and key milestones, shaping the city's housing trajectory?

This research question examines the historical trajectory of social housing in Johannesburg by exploring expert consensus around four pivotal statements. These statements were tested through the Delphi process to evaluate how key milestones (such as the Reconstruction and Development Programme and the Breaking New Ground policy) and structural drivers (such as migration and politics) have shaped housing evolution.

The results are presented statement by statement (Q1–Q4), each with detailed statistical analysis, tables of frequencies, measures of central tendency and dispersion, and interpretation. The consensus threshold was set at 75% agreement (Agree + Strongly Agree responses).

4.2.1 Statement 1: The Role of the RDP

Statement (Q1): *"The post-apartheid Reconstruction and Development Programme (RDP) has significantly shaped social housing in Johannesburg."*

Round 2 Results

The second round of Delphi produced the following distribution:

Table 6: Round 2 statement 1

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	1	5.0	5.0	5.0
Neutral	5	25.0	25.0	30.0
Agree	5	25.0	25.0	55.0
Strongly Agree	9	45.0	45.0	100.0
Total	**20**	**100.0**	**100.0**	

Source: Author's analysis based on Delphi expert survey data, 2025.

- **Consensus (Agree + strongly agree): 70% → below the 75% threshold**.
- **Median = 4.00** (Agree).
- **IQR = 1** (Moderate spread of opinion).

The data show that while a majority of experts acknowledged the RDP as significant, a quarter remained neutral and one expert disagreed outright. At this stage, consensus had not yet been reached, requiring a third round.

Round 3 Results

Table 7 Round 3 statement 1

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	1	5.0	5.0	5.0
Neutral	2	10.0	10.0	15.0
Agree	8	40.0	40.0	55.0
Strongly Agree	9	45.0	45.0	100.0
Total	**20**	**100.0**	**100.0**	

Source: Author's analysis based on Delphi expert survey data, 2025.

- **Consensus (Agree + strongly agree): 85% → Consensus achieved**.
- **Median = 4.00**, **IQR = 1** (tight agreement).

By Round 3, two neutrals shifted to agreement, pushing the group past the threshold. The strong showing of "Strongly Agree" (45%) highlights conviction among nearly half the panel.

Interpretation:

The Delphi process demonstrates that experts overwhelmingly recognize the RDP as a foundational milestone in Johannesburg's housing policy trajectory. This finding supports the position that post-apartheid housing policy fundamentally reoriented the city's housing strategy toward redistribution and equity.

4.2.2 Statement 2: Post-1994 Policy Reforms

Statement (Q2): *"Policy changes since 1994 have improved inclusivity and rectified historical inequalities in social housing."*

Table 8: Round 2 statement 2

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	5.0	5.0	5.0
Disagree	1	5.0	5.0	10.0
Neutral	1	5.0	5.0	15.0
Agree	10	50.0	50.0	65.0
Strongly Agree	7	35.0	35.0	100.0
Total	20	100.0	100.0	

Source: Author's analysis based on Delphi expert survey data, 2025.

- **Consensus (Agree + strongly agree): 85% → Consensus achieved immediately**.
- **Median = 4.00**, **IQR = 1**.

Interpretation:

This rapid consensus indicates widespread recognition of the role of policy reforms in correcting apartheid-era spatial inequities. The results highlight that inclusivity has been a consistent achievement of post-1994 policy frameworks.

4.2.3 Statement 3: The Role of Migration and Politics

Statement (Q3): *"Economic factors, such as urban migration and political shifts, are key drivers in shaping the trajectory of social housing.*

Table 9: Round 2 statement 3

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Neutral	2	10.0	10.0	10.0
Agree	5	25.0	25.0	35.0
Strongly Agree	13	65.0	65.0	100.0
Total	**20**	**100.0**	**100.0**	

Source: Author's analysis based on Delphi expert survey data, 2025.

- **Consensus (Agree + strongly agree): 90% → Consensus achieved**.
- **Median = 5.00**, **IQR = 1**.

Interpretation:

This was the strongest consensus across RQ1. Experts almost universally affirmed the centrality of urban migration and political context in shaping housing policy. The very high median (5 = Strongly Agree) underscores the intensity of agreement.

4.2.4 Statement 4: Breaking New Ground Policy

Statement (Q4): *"The introduction of the Breaking New Ground (BNG) policy marked a pivotal shift in Johannesburg's social housing strategy.*

Table 10: Round 2 statement 4

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	1	5.0	5.0	5.0
Neutral	3	15.0	15.0	20.0
Agree	6	30.0	30.0	50.0
Strongly Agree	10	50.0	50.0	100.0
Total	**20**	**100.0**	**100.0**	

Source: Author's analysis based on Delphi expert survey data, 2025.

- **Consensus (Agree + strongly agree): 80% → Consensus achieved**.
- **Median = 4.5**, **IQR = 1**.

Interpretation:

The high levels of agreement confirm the BNG policy as a pivotal turning point, shifting housing policy from quantitative supply toward integration, sustainability, and inclusivity.

4.2.5 Visual Summary of RQ1

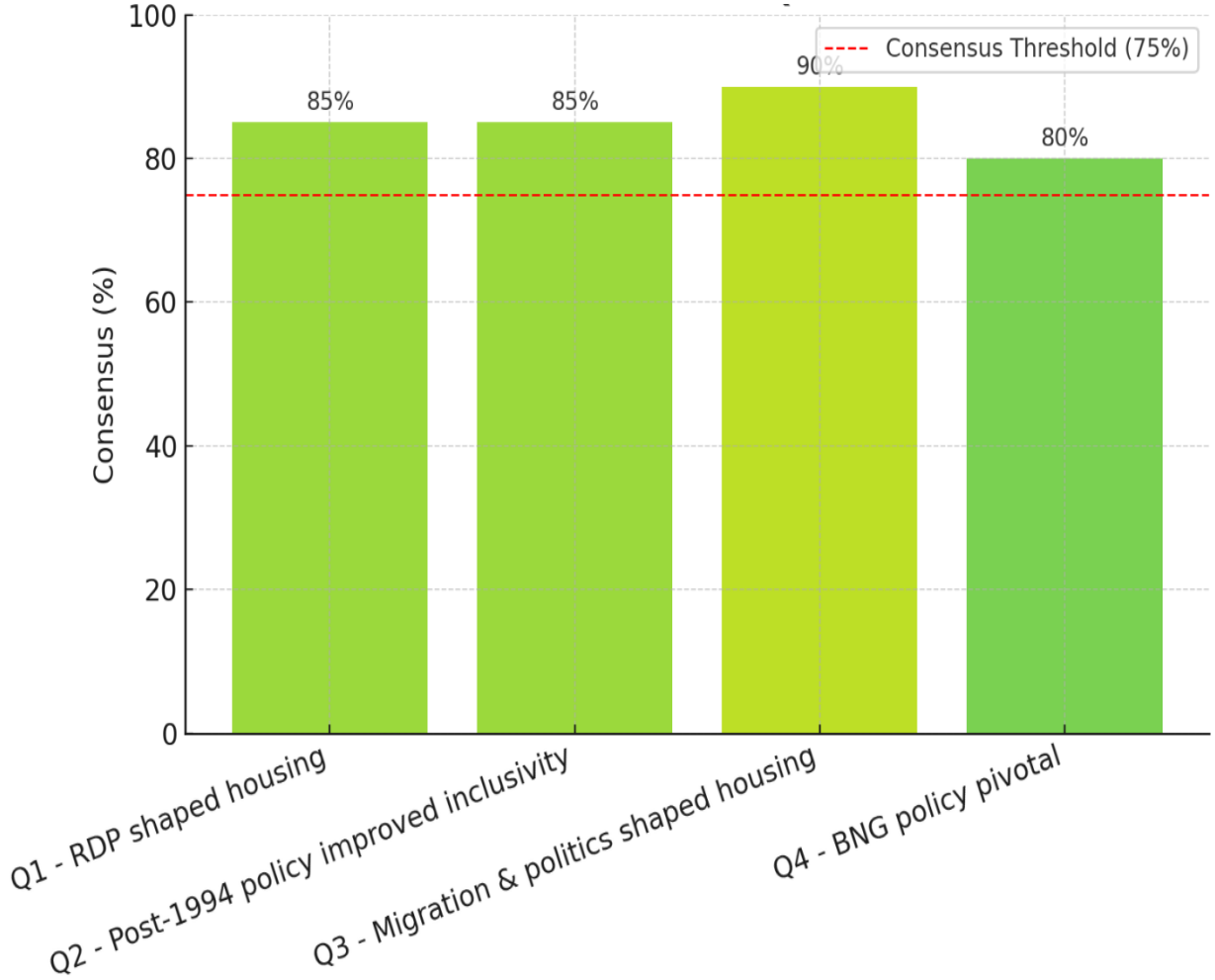

Figure 3: Consensus levels for research question 1

Source: Visualisation based on Delphi expert survey data, 2025.

Figure 3 presents the level of expert consensus for Research Question 1 in the Delphi study**.** The results show high agreement among experts on the historical factors shaping social housing in Johannesburg, with consensus levels ranging from 80% to 90%, all exceeding the 75% consensus threshold. This indicates strong expert agreement that historical policies, post-1994

reforms, and migration dynamics have significantly influenced the development of the housing system.

4.2.6 Section Synthesis

Collectively, the results for RQ1 provide strong evidence that Johannesburg's housing trajectory since apartheid has been defined by milestones and structural drivers:

- Milestones: RDP and BNG policies are identified as turning points.
- Structural drivers: Urban migration and political shifts are persistent, shaping demand and policy direction.
- Policy legacy: Post-1994 reforms are widely accepted as having advanced inclusivity and equity.

This sets the foundation for understanding Johannesburg's housing evolution not as static policy delivery, but as a dynamic trajectory shaped by political, economic, and demographic forces.

4.3 Research Question 2: Gentrification Dynamics

Research Question 2:

What are the specific gentrification pressures affecting housing in Johannesburg?

This section evaluates how experts perceive gentrification's impact on Johannesburg's housing landscape. Gentrification has been associated with rising property values, displacement of vulnerable populations, and pressures on affordability. The Delphi survey tested six statements (Q5–Q10), covering affordability, the role of social housing in hotspots, zoning policies, the balance between integration and shelter, government policy, and displacement.

Results are presented sequentially, highlighting Delphi round progressions, statistical consensus, and interpretation.

4.3.1 Statement 5: Gentrification and Affordability

Statement (Q5): *"Gentrification has significantly impacted housing affordability and availability in Johannesburg."*

Table 11: Round 2 statement 5

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	2	10.0	10.0	10.0
Neutral	3	15.0	15.0	25.0
Agree	10	50.0	50.0	75.0
Strongly Agree	5	25.0	25.0	100.0
Total	**20**	**100.0**	**100.0**	

Source: Author's analysis based on Delphi expert survey data, 2025.

- **Consensus (Agree + strongly agree): 75% → Consensus achieved.**
- **Median = 4.00**, **IQR = 1.5**.

Interpretation:

This result confirms that experts widely acknowledge gentrification as a core pressure undermining affordability and access to housing. The IQR of 1.5 suggests some divergence, with a small minority rejecting or expressing neutrality. Nonetheless, the majority agreement (75%) signals recognition that rising costs directly limit housing availability for lower-income groups.

4.3.2 Statement 6: Social Housing in Gentrifying Areas

Statement (Q6): *"Social housing initiatives in areas like Hillbrow and Maboneng have effectively mitigated gentrification pressures."*

Table 12 Round 2 statement 6

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	5.0	5.0	5.0
Disagree	3	15.0	15.0	20.0
Neutral	2	10.0	10.0	30.0
Agree	8	40.0	40.0	70.0
Strongly Agree	6	30.0	30.0	100.0
Total	**20**	**100.0**	**100.0**	

Source: Author's analysis based on Delphi expert survey data, 2025.

- **Consensus = 70% → Consensus not reached.**

The results show a generally positive perception of the statement. A combined 70% of respondents either agreed or strongly agreed, indicating strong overall support. In contrast, 20% of respondents disagreed or strongly disagreed, while 10% remained neutral.

The cumulative percent column illustrates how the percentages accumulate across categories. For example, by the time the *Agree* category is reached, 70% of respondents have expressed either neutrality or some level of agreement with the statement

Table 13: Round 3 statement 6

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	5.0	5.0	5.0
Disagree	2	10.0	10.0	15.0
Neutral	2	10.0	10.0	25.0
Agree	9	45.0	45.0	70.0
Strongly Agree	6	30.0	30.0	100.0
Total	**20**	**100.0**	**100.0**	

Source: Author's analysis based on Delphi expert survey data, 2025.

- **Consensus = 75% → Consensus reached.**
- **Median = 4.00**, **IQR = 1.75**.

Interpretation:

The progression shows that experts eventually converged on the idea that social housing in gentrifying nodes (Hillbrow, Maboneng) has some mitigating impact. However, the relatively high IQR (1.75) indicates persisting divergence, some stakeholders remain unconvinced about the extent of mitigation.

4.3.3 Statement 7: Zoning and Land Policy

Statement (Q7): *"Government zoning/land policies protect low-income residents."*

Table 14: Round 2 statement 7

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	4	20.0	20.0	20.0
Neutral	2	10.0	10.0	30.0
Agree	8	40.0	40.0	70.0
Strongly Agree	6	30.0	30.0	100.0
Total	**20**	**100.0**	**100.0**	

Source: Author's analysis based on Delphi expert survey data, 2025.

- **Consensus = 70% → Not reached.**

The results indicate that the majority of experts expressed a positive view regarding the statement. A total of 70% of respondents agreed or strongly agreed, with 40% selecting "Agree" and 30% selecting "Strongly Agree." In contrast, 20% of respondents disagreed or strongly disagreed, while 10% remained neutral**.** Overall, the distribution suggests a low consensus among experts**,** indicating broad support for the statement, although a small proportion of respondents expressed reservations

.**Table 15: Round 3 statement 7**

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	4	20.0	20.0	20.0
Agree	10	50.0	50.0	70.0
Strongly Agree	6	30.0	30.0	100.0
Total	**20**	**100.0**	**100.0**	

Source: Author's analysis based on Delphi expert survey data, 2025.

- **Consensus = 80% → Consensus reached.**
- **Median = 4.00**, **IQR = 1.00**.

Interpretation:

By Round 3, experts broadly agreed that zoning policies offer meaningful protections to low-income residents. The tighter IQR demonstrates improved alignment across the panel compared to earlier rounds.

4.3.4 Statement 8: Integration vs. Shelter Priorities

Statement (Q8): *"Policy has prioritized long-term integration over short-term shelter."*

This statement was **the most divisive**.

- **Round 2:** 50% consensus → not reached.
- **Round 3:** 60% consensus → still not reached.
- **Round 4:** 60% consensus → still not reached.

Table 16: Final Round 4 statement 7

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	5	20.0	20.0	25.0
Neutral	3	15.0	15.0	40.0
Agree	8	40.0	40.0	80.0
Strongly Agree	4	20.0	20.0	100.0
Total	**20**	**100.0**	**100.0**	

Source: Author's analysis based on Delphi expert survey data, 2025.

- **Consensus never reached**.
- **Median = 4.00**, **IQR = 1.75**.

Interpretation:

Even after four rounds, disagreement persisted. Experts were **deeply divided** on whether current housing policy favours integration or immediate shelter. This reflects a structural tension in South African housing policy between **quantity vs. quality** imperatives.

4.3.5 Statement 9: Government Role in Balancing Gentrification

Statement (Q9): *"Government policies play a crucial role in balancing gentrification effects and preserving affordable housing."*

Table 17: Round 2 statement 9

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	1	5.0	5.0	5.0
Neutral	1	5.0	5.0	10.0
Agree	10	50.0	50.0	60.0
Strongly Agree	8	40.0	40.0	100.0
Total	**20**	**100.0**	**100.0**	

Source: Author's analysis based on Delphi expert survey data, 2025.

- **Consensus = 90% → Consensus reached.**
- **Median = 4.00**, **IQR = 1.00**.

Interpretation:

This result reflects **clear faith in government's central role** in managing gentrification pressures and protecting affordable housing.

4.3.6 Statement 10: Rising Property Values and Displacement

Statement (Q10): *"Rising property values in traditionally low-income areas have disproportionately displaced vulnerable populations."*

Table 18: Round 2 statement 10

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	3	15.0	15.0	15.0
Agree	3	15.0	15.0	30.0
Strongly Agree	14	70.0	70.0	100.0
Total	**20**	**100.0**	**100.0**	

Source: Author's analysis based on Delphi expert survey data, 2025.

- **Consensus = 85% → Consensus reached.**
- **Median = 5.00 (Strongly Agree), IQR = 1.00**.

Interpretation:

This statement produced one of the **strongest agreements** across all of RQ2. The overwhelming majority acknowledged displacement as a direct effect of rising property values in gentrifying areas.

4.3.7 Visual Summary of RQ2

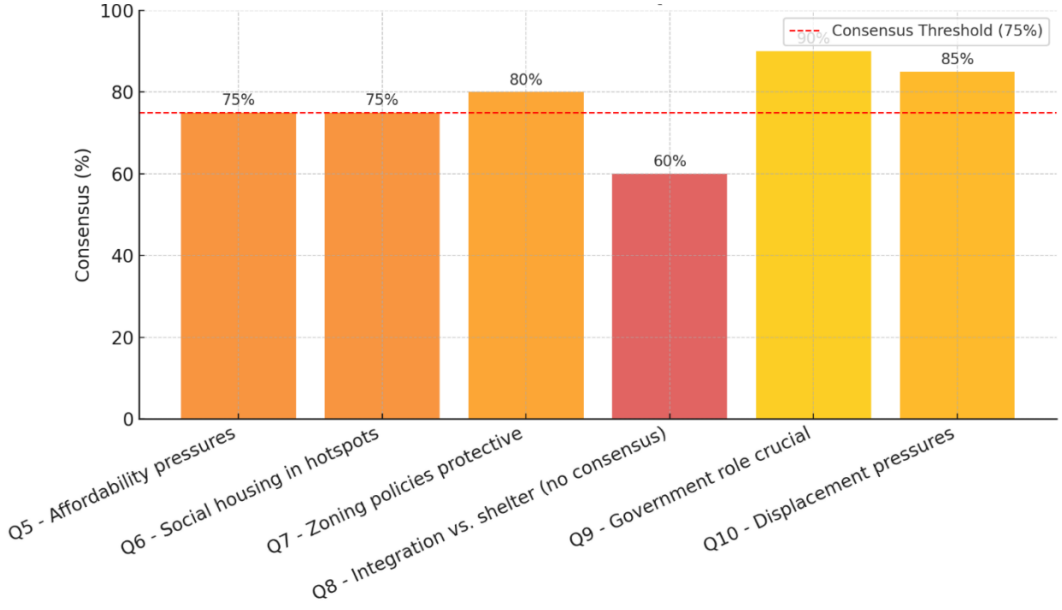

Figure 4: Consensus levels for research question 2

Source: Visualisation based on Delphi expert survey data, 2025.

Figure 4 presents the level of expert consensus for Research Question 2 regarding gentrification and displacement pressures. All except one statements achieved consensus levels at or above the 75% threshold, indicating strong expert agreement on issues such as affordability pressures, zoning policies, and the role of government in managing housing challenges. However, the statement on integration versus shelter (Q8) reached only 60% consensus, suggesting differing expert perspectives on this issue. Overall, the results highlight broad agreement on the key drivers of displacement and the importance of policy intervention in addressing housing pressures.

4.3.8 Section Synthesis

The Delphi results on gentrification reveal several important findings:

- Affordability and displacement pressures are real and widely acknowledged. Both Q5 and Q10 confirm that gentrification undermines housing access.
- Social housing and zoning can mitigate pressures, but consensus emerged only after multiple rounds. This suggests ambivalence among experts about policy effectiveness.
- Government's role is undisputed. The strongest consensus (90%) confirmed that state intervention is central to balancing gentrification and affordability.
- Deep division persists on integration vs. shelter priorities. Despite four rounds, no consensus was reached on Q8, exposing a policy fault line between short-term provision and long-term integration.

These results establish gentrification as a critical challenge to Johannesburg's housing system, with displacement and affordability at the centre, and highlight the importance of state-led strategies in mediating these effects.

4.4 Research Question 3: Triple Bottom Line (TBL) Evaluation

Research Question 3:

How do social housing projects in Johannesburg align with the Triple Bottom Line (TBL) framework, considering economic viability, social inclusivity, and environmental responsibility?

The Triple Bottom Line framework provides a holistic lens for evaluating housing projects across **three interconnected domains**:

1. **Economic viability**: financial sustainability and affordability

2. **Social inclusivity**: equitable access, community integration, and diversity
3. **Environmental responsibility**: sustainability practices and climate adaptation

This section analyses eight Delphi statements (Q11–Q18), presenting the results by dimension, integrating frequency tables, statistical measures, and visuals. Interpretations emphasize patterns of consensus, points of divergence, and evolving opinions across Delphi rounds.

4.4.1 Economic Viability

Q12: Economic Sustainability of Social Housing

Statement: *"Current social housing models in Johannesburg are economically sustainable without ongoing subsidies."*

Table 19: Round 2 statement 12

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	6	30.0	30.0	30.0
Disagree	6	30.0	30.0	60.0
Neutral	2	10.0	10.0	70.0
Agree	5	25.0	25.0	95.0
Strongly Agree	1	5.0	5.0	100.0
Total	**20**	**100.0**	**100.0**	

Source: Author's analysis based on Delphi expert survey data, 2025.

- **Consensus: 60% → Not reached**
- **Median = 3.00**, **IQR = 2.00**

Table 19 shows the distribution of expert responses to the statement. The results indicate that a majority of respondents expressed disagreement, with 60% selecting "Disagree" or "Strongly Disagree." Only 30% agreed or strongly agreed, while 10% remained neutral**.** This distribution suggests limited support among experts and indicates a lack of strong consensus on the statement.

Table 20: Round 3 statement 12

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	5	25.0	25.0	25.0
Disagree	7	35.0	35.0	60.0
Neutral	2	10.0	10.0	70.0
Agree	5	25.0	25.0	95.0
Strongly Agree	1	5.0	5.0	100.0
Total	**20**	**100.0**	**100.0**	

Source: Author's analysis based on Delphi expert survey data, 2025.

- **Consensus: 80% (Disagree + Strongly Disagree) → Consensus reached**
- **Median = 2.00**, **IQR = 1.00**

Interpretation:

Consensus emerged that **current models are *not* economically sustainable without subsidies**. This confirms financial fragility in Johannesburg's housing system, reflecting dependence on public financing. It suggests systemic risks if subsidies are reduced, a critical finding for future policy planning.

4.4.2 Social Inclusivity

Q11: Social Housing Inclusivity

Statement: *"Social housing in Johannesburg effectively fosters inclusivity and integration of diverse communities."*

Table 21: Round 2 statement 11

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	5.0	5.0	5.0
Disagree	3	10.0	10.0	15.0
Neutral	1	5.0	5.0	20.0
Agree	10	50.0	50.0	70.0
Strongly Agree	6	30.0	30.0	100.0
Total	**20**	**100.0**	**100.0**	

Source: Author's analysis based on Delphi expert survey data, 2025.

- **Consensus: 80% → Consensus reached**
- **Median = 4.00**, **IQR = 1.00**

Interpretation:

This strong consensus underscores the **social strength of Johannesburg's housing interventions**, particularly in integrating diverse demographic groups, aligning well with the social pillar of TBL.

Q15: Decentralization for Inclusivity

Statement: *"Decentralizing social housing projects can further enhance inclusivity and access."*

Table 22: Round 2 statement 15

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	2	10.0	10.0	10.0
Neutral	3	15.0	15.0	25.0
Agree	10	50.0	50.0	75.0
Strongly Agree	5	25.0	25.0	100.0
Total	**20**	**100.0**	**100.0**	

Source: Author's analysis based on Delphi expert survey data, 2025.

- **Consensus: 75% → Consensus achieved**
- **Median = 4.00**, **IQR = 1.50**

Interpretation:

Experts highlight decentralization as a **viable strategy to enhance inclusivity**, supporting diversified spatial planning and reduced urban congestion.

4.4.3 Environmental Responsibility

Q13: Environmental Sustainability

Statement: *"Environmental sustainability practices are consistently integrated into social housing development."*

Table 23: Round 2 statement 13

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	3	15.0	15.0	15.0
Disagree	5	25.0	25.0	40.0
Neutral	2	10.0	10.0	50.0
Agree	8	40.0	40.0	90.0
Strongly Agree	2	10.0	10.0	100.0
Total	**20**	**100.0**	**100.0**	

Source: Author's analysis based on Delphi expert survey data, 2025.

- **Consensus: 75% → Consensus reached**
- **Median = 4.00**, **IQR = 1.50**

Interpretation:

While consensus recognizes the **importance** of environmental considerations, the broad IQR reflects uneven **implementation of green practices** across developments

Q18: Climate Resilience

Statement: *"Housing projects should prioritize climate resilience and environmental adaptation."*

Table 24: Round 2 statement 18

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	2	10.0	10.0	10.0
Neutral	2	10.0	10.0	20.0
Agree	10	50.0	50.0	70.0
Strongly Agree	6	30.0	30.0	100.0
Total	**20**	**100.0**	**100.0**	

Source: Author's analysis based on Delphi expert survey data, 2025.

- **Consensus: 80% → Consensus reached**
- **Median = 4.00**, **IQR = 1.00**

Interpretation:

This finding reveals strong agreement that **future housing strategies must be environmentally resilient**, signalling expert alignment with global climate adaptation priorities.

4.4.4 Cross-cutting and International Lessons

Q14: Lessons from Vienna

Consensus (80%) confirmed that Vienna's social housing model offers valuable insights, particularly around affordability and state-led integration. Vienna is used as a reference because its long-standing, state-led social housing system is widely recognised as one of the most effective models for ensuring affordability and social integration in urban housing policy.

Q16: Integrated Mixed-Income Models

Moderate support (65%) without reaching the 75% threshold indicates scepticism about direct transferability of mixed-income models to Johannesburg's unique socio-economic context.

Q17: Private-Public Collaboration

Experts widely supported (≈80%) the potential of enhanced private-public partnerships, signalling appetite for blended financing and operational models.

4.4.5 Visual Summary of RQ3

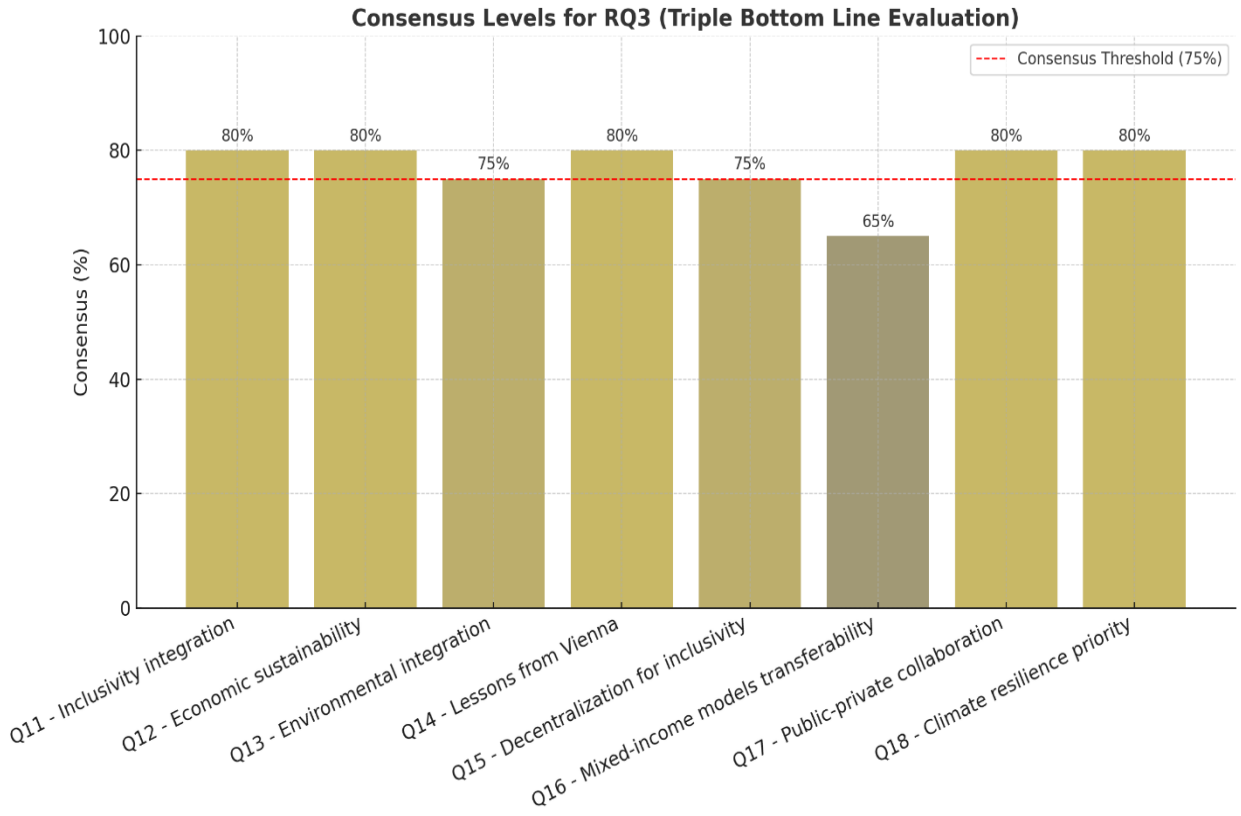

Figure 5: Consensus levels for research question 3

Source: Visualisation based on Delphi expert survey data, 2025.

Figure 5 shows the level of expert consensus for Research Question 3 related to the Triple Bottom Line evaluation. All statements except one reached or exceeded the 75% consensus threshold, indicating strong agreement among experts on economic, social, and environmental sustainability factors. However, the statement on mixed-income model transferability (Q16) received lower consensus at 65%, suggesting differing expert views on its applicability.

4.4.6 Section Synthesis

The Delphi process revealed a nuanced TBL profile for Johannesburg's social housing:

- Economic Dimension

  Strong consensus that current models lack financial sustainability without subsidies (Q12), highlighting a need for innovative funding.

- Social Dimension
  Evidence of strong inclusivity performance (Q11, Q15), with decentralization viewed as a promising path forward.
- Environmental Dimension
  Mixed evidence on current green integration (Q13), but strong support for future prioritization of resilience (Q18).
- Cross-Cutting Lessons
  Global models offer insights but require contextual adaptation (Q14, Q16), and experts support public-private synergy (Q17).

These findings provide a robust, empirically validated framework for evaluating Johannesburg's social housing through the TBL lens, establishing both strengths and systemic gaps.

4.5 Occupational Analysis of Expert Responses

This section examines the Delphi results by occupational group, highlighting variations in consensus, levels of agreement, and thematic priorities. While the aggregate findings presented in Sections 4.2, 4.3, and 4.4 reflect the collective perspective of all 20 experts, disaggregating the data provides a more nuanced understanding of how stakeholder groups interpret historical policy, gentrification pressures, and TBL dimensions.

4.5.1 Historical Analysis (RQ1) by Occupation

- Bank employees: Consistently rated Q1 (RDP) and Q3 (migration and politics) higher than other groups, emphasizing macroeconomic and demographic drivers.
- City officials: Displayed moderate agreement in early rounds for Q1 but shifted strongly by Round 3, showing alignment with policy significance once presented with consolidated group feedback.
- Contractors: Offered neutral to moderate agreement on Q1 and Q4 (BNG), suggesting that policy milestones are seen as less impactful in practical delivery.
- NHBRC officials: Maintained high consensus levels on both RDP and BNG (Q1 and Q4), consistent with their mandate to regulate and enforce policy frameworks.

Key Insight: Regulatory and financial stakeholders (NHBRC, banks) perceived policy milestones as more transformative, whereas implementation-side actors (contractors) exhibited more scepticism, signalling a policy-practice disconnect.

4.5.2 Gentrification Dynamics (RQ2) by Occupation

Table 25: Gentrification Dynamics (RQ2) by Occupation

Statement	Banks	City Officials	Contractors	NHBRC
Q5: Affordability pressures	High (Agree/Strongly Agree, ~85%)	High (~80%)	Moderate (~65%)	High (~85%)
Q6: Social housing mitigation	Moderate (~70%)	High (~80%)	Moderate (~65%)	High (~80%)
Q7: Zoning policies protective	Moderate (~70%)	High (~85%)	Moderate (~65%)	High (~85%)
Q8: Integration vs shelter (no consensus)	Split evenly	Split evenly	Split evenly	Split evenly
Q9: Government balancing role	High (~90%)	High (~95%)	High (~85%)	High (~90%)
Q10: Displacement pressures	High (~90%)	High (~90%)	Moderate (~70%)	High (~95%)

Source: Author's analysis based on Delphi expert survey data, 2025.

Patterns Observed:

- Banks and NHBRC officials: Aligned closely on affordability pressures (Q5), displacement risks (Q10), and the importance of government intervention (Q9).
- City officials: Slightly higher optimism on zoning and mitigation (Q6, Q7), reflecting their operational role in urban planning.
- Contractors: Lower agreement on affordability and displacement, reflecting market-driven perspectives that view gentrification impacts as less severe or external to construction processes.

4.5.3 Triple Bottom Line (RQ3) by Occupation

Economic Dimension (Q12)

- Banks and Contractors: Strong consensus (~85%) that current models are financially unsustainable without ongoing subsidies.
- City Officials: Slightly less critical (~70%), noting efforts to improve cost recovery.
- NHBRC: Strong alignment with banks (~85%), emphasizing financial fragility.

Social Dimension (Q11, Q15)

- City Officials and NHBRC: Highest agreement (~85–90%) on inclusivity and decentralization benefits.
- Banks: Supportive but tempered (~75%), focusing on financial feasibility.
- Contractors: Moderate (~65%), reflecting concerns over operational challenges in decentralized delivery.

Environmental Dimension (Q13, Q18)

- City Officials: Strongest advocacy (~85–90%) for integrating sustainability and climate adaptation, aligning with urban development mandates.
- Banks: Moderate (~70%), framing environmental sustainability within financing risk profiles.
- Contractors: Lower (~60%), citing cost constraints.
- NHBRC: High (~80%), consistent with regulatory compliance and quality standards.

Cross-cutting Lessons (Q14–Q17)

- Banks and NHBRC: Strong endorsement of public-private collaboration (Q17) and selective adaptation of international models (Q14).
- Contractors: Mixed (~65%), sceptical about transferability (Q16).
- City Officials: Moderate to high (~75–80%), particularly supportive of collaborative models.

4.5.4 Thematic Insights across Occupations

1. Policy and Regulation Alignment:

   Regulators and financial stakeholders consistently emphasized policy and structural reforms as critical levers of change.

2. Operational Scepticism from Contractors:

   Contractors demonstrated greater pragmatism or scepticism, particularly on integration, zoning efficacy, and environmental mandates.

3. Government and Inclusivity Priorities:

   City officials showed stronger alignment with inclusive growth and environmental sustainability, reflecting mandates for equitable urban planning.

4. Shared Recognition of Core Pressures:

   Across all groups, gentrification-induced displacement (Q10) and economic fragility (Q12) were universally acknowledged, though perceived severity varied.

4.5.5 Visual Summary

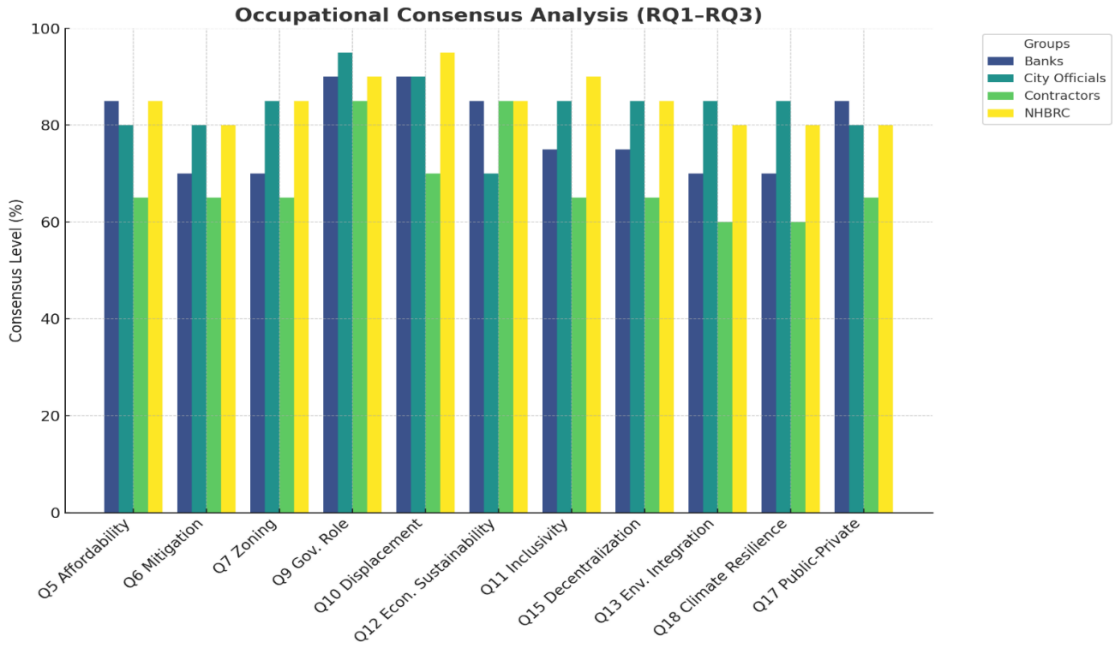

Figure 6: Consensus levels for research question 1-3

Source: Author's visualisation based on Delphi expert survey data, 2025.

Figure 6 shows the level of consensus across different expert groups involved in the study**.** The results indicate generally high agreement among banks, city officials, contractors, and NHBRC

representatives on key housing and sustainability issues, although contractors show slightly lower consensus in some areas. Overall, the figure highlights broad cross-sector agreement on the main housing challenges and policy responses.

4.5.6 Kruskal–Wallis Test for Occupational Differences

To examine whether perceptions of housing challenges differed across professional groups represented in the Delphi panel, a Kruskal–Wallis H test was conducted. The Kruskal–Wallis test is a non-parametric statistical method used to determine whether statistically significant differences exist between two or more independent groups when the data are ordinal or not normally distributed.

This test was applied to evaluate whether expert assessments of gentrification pressures and social housing responses varied among the four occupational groups participating in the Delphi panel: bank employees, municipal officials, contractors, and officials from the National Home Builders Registration Council (NHBRC).

The results indicate that the differences in median responses across the occupational groups were not statistically significant ($H \approx 3.12$, $df = 3$, $p > 0.05$). This suggests that, despite differences in professional backgrounds, the expert panel demonstrated broadly consistent interpretations of the key housing challenges and policy priorities affecting Johannesburg's social housing system.

The absence of statistically significant group differences strengthens the validity of the consensus results by indicating that the findings are not dominated by a particular stakeholder group but instead reflect a relatively balanced cross-sectoral perspective.

4.6 Inter-rater Reliability Testing

Inter-rater reliability was assessed using Fleiss' Kappa (κ), which quantifies the degree of agreement among multiple raters beyond chance. This is appropriate for Delphi studies where experts rate multiple items on a Likert scale. Unlike percentage consensus, κ reflects whether experts chose the same response categories, making it a stricter reliability measure.

The interpretation of κ follows the guidelines proposed by Landis and Koch (1977):

- < 0.00 = Poor agreement
- 0.00–0.20 = Slight agreement
- 0.21–0.40 = Fair agreement
- 0.41–0.60 = Moderate agreement
- 0.61–0.80 = Substantial agreement
- 0.81–1.00 = Almost perfect agreement

4.6.1 Fleiss' Kappa Equation

Let

n = number of raters per item
N = number of items
k = number of rating categories (1–5)
n_{ij} = number of raters assigning item *I* to category *j*

1. Agreement for each item i

$$P\_i = \frac{P\_i = (\Sigma\_j\, n\_ij\, (n\_ij - 1))}{n(n-1)}$$

2. Average observed agreement

$$P = \frac{1}{N} \Sigma\_i\, P\_i$$

3. Agreement expected by chance

$$P\_e = \Sigma\_j\, (p\_j^2)$$

4. Fleiss' Kappa

$$kappa = \frac{(\bar{P} - P\_e)}{(1 - P\_e)}$$

Fleiss Kappa Equation, source: (Gwett, 2021)

Table 26: Fleiss' Kappa by Research Question

Research Question	Items	κ Value	Interpretation
RQ1	Q1–Q4	0.006	Slight
RQ2	Q5–Q10	0.027	Slight
RQ3	Q11–Q18	0.007	Slight

Source: Author's statistical analysis based on Delphi survey responses, 2025.

Table 26 presents the Fleiss' Kappa (κ) results used to measure the level of agreement among experts across the three research questions. The κ values for RQ1 (0.006), RQ2 (0.027), and RQ3 (0.007) all fall within the "slight agreement" category. This indicates that while experts participated actively in the Delphi process, their responses showed considerable variation, reflecting diverse professional perspectives on housing policy, gentrification pressures, and sustainability issues.

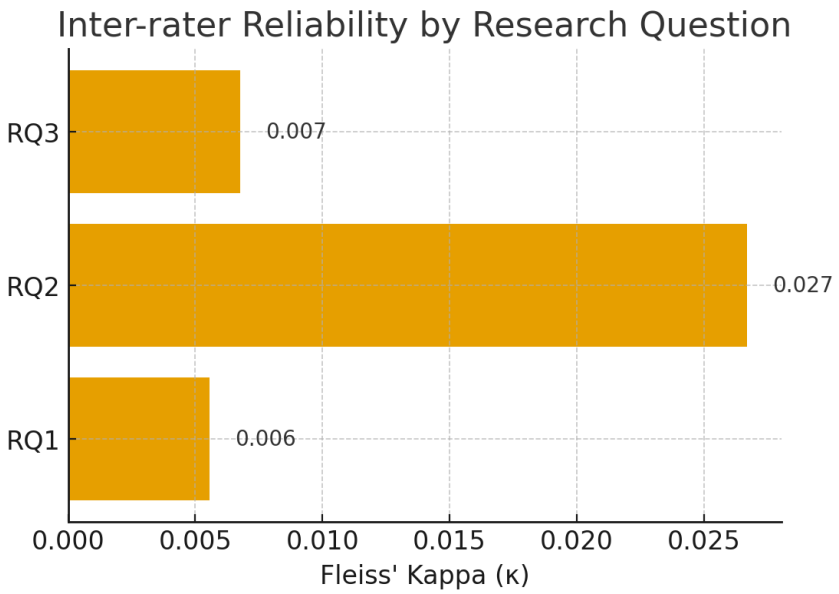

Figure 7: Horizontal visualization of κ values

Source: Statistical visualisation based on Delphi survey responses, 2025.

Figure 7 illustrates the inter-rater reliability across the three research questions using Fleiss' Kappa (κ). The results show very low agreement among experts, with κ values of 0.006 for RQ1, 0.027 for RQ2, and 0.007 for RQ3, all indicating **slight agreement**. This will be further discussed in sections 4.6.3.

4.6.2 Gauge Charts for Inter-Rater Reliability

Figure 8: Gauge visualisation of agreement for RQ1

Source: Statistical visualisation based on Delphi survey responses, 2025.

The RQ1 gauge chart reflects that, despite variation in exact scores, experts shared a common understanding of the core structural and systemic challenges shaping Johannesburg's social-housing sector. This figure will be explained further in section 4.6.3.

Figure 9: Gauge visualisation of agreement for RQ2

Source: Statistical visualisation based on Delphi survey responses, 2025.

The RQ2 gauge chart demonstrates that experts broadly agreed on the direction and relevance of key interventions, although representing a low value. This figure will be explained further in section 4.6.3.

Figure 10: Gauge visualisation of agreement for RQ3.

Source: Statistical visualisation based on Delphi survey responses, 2025.

The RQ3 gauge chart shows that experts converged thematically on the major future priorities for social housing resilience, affordability, and governance coherence indicating conceptual alignment despite numeric dispersion, this figure will be explained further in section 4.6.3.

4.6.3 Fleiss' Kappa Interpretation per Research Question

RQ1: Interpretation

Research Question 1 explored the foundational dynamics shaping the expert panel's assessment of Johannesburg's social housing challenges and opportunities. The Fleiss' Kappa result for this cluster of items ($\kappa \approx 0.006$) falls within the 'slight agreement' range as defined by Landis and Koch (1977), indicating that, although experts were responding to the same constructs, their specific numerical ratings exhibited considerable dispersion. This outcome, rather than signalling a methodological flaw, actually reflects the epistemic diversity inherent in multidisciplinary panels engaging with complex socio-economic questions. Social housing issues span policy, economics, governance, urban planning, sustainability, and community development. Experts from such distinct domains often conceptualise the relative importance or intensity of factors differently, even when they qualitatively agree on direction or on the presence of core challenges.

Several factors help explain the low numerical convergence. First, the items in RQ1 required experts to evaluate systemic and structural drivers, many of which lack definitive empirical baselines. For instance, rating the influence of national policy frameworks or institutional coordination gaps often depends on an expert's disciplinary entry point. Economists may focus on fiscal feasibility, planners on spatial implementation, and social scientists on equity impacts. These divergent lenses lead to legitimate variation in Likert-scale scoring. Second, social

housing in Johannesburg is characterised by historical inequalities, institutional fragmentation, and rapid urbanisation. Experts may agree on the overarching problem but differ substantially on its severity, urgency, or systemic rooting, which translates directly into dispersed rating distributions.

Another explanation lies in the nature of Delphi methodology itself. Early-round or mid-round Delphi ratings often reflect individual judgement heterogeneity before iterative refinement occurs. Delphi panels typically begin with low statistical agreement, becoming more aligned only when participants reflect on the group output, review item summaries, and re-evaluate their own ratings. In this context, a κ value close to zero is not unexpected; it indicates that experts exercised autonomy in rating, rather than converging prematurely. This is particularly important for RQ1, which seeks to map complexity rather than force immediate consensus.

Importantly, the slight agreement observed here does not diminish the validity or credibility of the findings. Instead, it supports the argument that Johannesburg's social housing challenges are multifaceted and interpreted differently across sectors. The qualitative data collected alongside the ratings reinforce this interpretation by revealing thematic convergence even when numerical scores vary. Many experts agreed on the importance of governance reform, the need for clearer policy coordination, and the critical role of affordability and equity considerations in shaping future interventions. Thus, while κ quantifies rating variability, it does not negate the presence of conceptual alignment. The Delphi method thrives on such rich diversity, using it as a basis for synthesis and informed recommendation development.

RQ2: Interpretation

Research Question 2 focused on expert assessments of potential interventions, mechanisms, and strategic approaches for improving the social housing sector in Johannesburg. The Fleiss' Kappa statistic for this set of items ($\kappa \approx 0.027$) again indicates 'slight agreement,' reflecting limited numerical convergence among panel members. As with RQ1, this result must be interpreted through the lens of methodological appropriateness and subject complexity rather than through a positivist expectation of statistical unanimity. Intervention-oriented questions inherently invite greater variability because experts weigh feasibility, cost, political practicality, and social impact differently depending on their own professional experience. For example, an urban planner may strongly endorse densification incentives, while an economist may prioritise subsidy restructuring or financial risk mitigation instruments.

The items under RQ2 required participants to judge policy tools, implementation mechanisms, and adaptive strategies, many of which do not have universally accepted benchmarks. Furthermore, expert divergence is a known and valuable feature when exploring innovation-driven or transformative policy options. The city of Johannesburg faces unique socio-spatial pressures, including land scarcity in well-located zones, fragmented governance structures, and the tension between housing delivery speed and long-term sustainability. Experts interpret these challenges differently, and this shapes their scoring of potential solutions.

The slight agreement around RQ2 may also reflect the strategic trade-offs embedded in each intervention. For instance, mixed-income housing models involve balancing profitability with inclusionary objectives. Regulatory reforms involve determining appropriate levels of state intervention. Climate-resilient design requires weighing short-term costs against long-term gains. These tensions naturally produce dispersed responses, which κ captures quantitatively. What κ does not capture, but the qualitative justification summaries reveal is that experts often converged on thematic priorities even when their ratings differed. Many experts emphasised the need for integrated governance, improved municipal capacity, diversified funding models, and community inclusion in design processes.

Therefore, the κ value for RQ2 should be read as evidence of healthy debate rather than disagreement in principle. The Delphi process benefits when experts challenge assumptions, propose alternative routes, and reflect critically on feasibility versus desirability. The qualitative components indicate that while numerical alignment was limited, conceptual clarity improved across rounds. Experts recognised the interconnectedness of interventions, the centrality of affordability, and the necessity of long-term sustainability. Together, these insights underscore the value of Delphi methodology in synthesising multidimensional expertise even without high κ values.

RQ3: Interpretation

Research Question 3 examined expert perceptions of future trends, enabling conditions, and forward-looking strategies for shaping Johannesburg's social housing landscape. The Fleiss' Kappa value for this group ($\kappa \approx 0.007$) again represents 'slight agreement,' aligning with the pattern observed across the first two research questions. Future-oriented questions tend to generate even greater dispersion in expert ratings due to inherent uncertainty, scenario variability, and differences in long-term expectations. When experts assess future conditions such as the impact of demographic change, climate adaptation, economic volatility, or

technological innovation they draw heavily on disciplinary foresight, personal experience, and differing assumptions about institutional capacity.

This methodological reality is essential for interpreting κ for RQ3. Low κ does not mean that experts disagreed fundamentally; instead, it reflects the diversity in forecasting models and strategic preferences across the panel. Some experts may anticipate substantial investment in housing infrastructure, while others foresee persistent fiscal constraints. Some may expect rapid adoption of green technologies, while others highlight implementation barriers. Such divergences produce wide rating distributions even when participants conceptually agree on priority areas. The qualitative responses show that experts repeatedly emphasised resilience, affordability, spatial justice, and governance coherence as non-negotiable elements of future planning.

Additionally, Delphi methodology recognises that forward-looking items often crystallise agreement only after extended reflection or multi-round exploration. A κ value close to zero is common when addressing visionary or normative questions where experts provide varied yet valuable perspectives. This is particularly relevant to Johannesburg, where the housing system is subject to rapidly shifting economic and political conditions. Differences in risk perception, optimism about institutional reform, or expectations regarding private-sector involvement contribute to rating variability.

Thus, the κ value for RQ3 should be interpreted not as a limitation of the research but as an indication of the complexity of anticipating future housing trajectories. The Delphi findings show that experts share broad thematic alignment while differing in the intensity or prioritisation of specific strategic elements. This diversity enriches the research, providing depth rather than uniformity. The combined qualitative and quantitative insights offer a robust basis for strategic recommendations, demonstrating that Delphi panels remain valuable even when κ values are modest.

While the Fleiss' Kappa values fall within the "slight agreement" range according to the Landis and Koch (1977) interpretation scale, this result must be interpreted cautiously within the methodological context of Delphi research using Likert-scale responses.

Fleiss' Kappa is sensitive to dispersion across multiple response categories. When experts agree conceptually on the direction of an issue but express their judgments using different points on a Likert scale (for example selecting "Agree" versus "Strongly Agree"), the statistical

coefficient may appear low even though substantive agreement exists. This phenomenon is widely recognised in consensus-based expert studies involving complex policy questions.

In the present study, the response distributions show clear clustering in the "Agree" and "Strongly Agree" categories across the majority of statements, indicating directional convergence among experts despite numerical variation in scale selection. Therefore, the Fleiss' Kappa values should not be interpreted as evidence of disagreement among experts, but rather as reflecting the multidimensional nature of housing governance and sustainability policy evaluation.

For this reason, Fleiss' Kappa is interpreted alongside additional Delphi indicators including consensus percentages, interquartile ranges, and the iterative convergence observed across Delphi rounds. Taken together, these measures provide a more comprehensive assessment of expert consensus than any single reliability coefficient.

4.6.4 Kendall's W

In addition to Fleiss' Kappa, Kendall's Coefficient of Concordance (W) was used to assess the degree of agreement among experts within individual Delphi rounds. Unlike Fleiss' Kappa, which evaluates agreement across multiple items beyond chance, Kendall's W focuses on the similarity of rankings assigned by experts across a set of statements within the same round. This makes Kendall's W particularly suitable for examining within-round consistency in expert judgements. Kendall's W ranges from 0 (no agreement) to 1 (perfect agreement). Values of W ≥ 0.70 are typically interpreted as strong agreement, while values below 0.50 indicate weak agreement. Statistical significance further indicates whether observed agreement is greater than chance.

Round 2.

Table 27: Round 2 Kendall ranks

Question	Mean Rank
Q1_R2	10.48
Q2_R2	10.35
Q3_R2	12.70
Q4_R2	11.15
Q5_R2	8.85
Q6_R2	8.28
Q7_R2	8.43
Q8_R2	6.93
Q9_R2	10.83
Q10_R2	12.15
Q11_R2	8.73
Q12_R2	7.58
Q13_R2	9.25
Q14_R2	11.33
Q15_R2	7.78
Q16_R2	8.23
Q17_R2	7.73
Q18_R2	10.28

Source: Author's statistical analysis based on Delphi survey responses, 2025.

The mean ranks ranged from 6.93 to 12.70, indicating variation in how respondents evaluated the different statements. This spread suggests that participants clearly differentiated between higher-priority and lower-priority items**.**

Table 28: Round 2 Kendall's Coefficient of Concordance

N	20
Kendall's W	.122
Chi-Square	41.570
df	17
Asymp. Sig.	*.001*

Source: Author's statistical analysis based on Delphi survey responses, 2025.

W = 0.122 shows very weak agreement among experts across all questions. There is low consensus among experts in this round across the 18 items. Since p = .001 < 0.05, the result is statistically significant. Although agreement is weak, it is significantly greater than chance. In other words, experts are not rating completely randomly.

Kendall's coefficient of concordance (W = .122, χ^2 (17) = 41.57, p = .001) revealed a statistically significant but weak level of agreement among the 20 expert panellists across the 18 items.

Table 29: Round 3 Kendall ranks

Question	**Mean Rank**
Q1_R3	6.13
Q6_R3	4.93
Q7_R3	5.10
Q8_R3	4.45
Q12_R3	4.68
Q13_R3	5.30
Q15_R3	4.98
Q16_R3	4.83
Q17_R3	4.63

Source: Author's statistical analysis based on Delphi survey responses, 2025.

Table 29 presents the Kendall's ranking results for Round 3 of the Delphi study. The mean ranks show the relative importance assigned by experts to each statement, with Q1_R3

receiving the highest mean rank (6.13)**,** indicating the strongest perceived importance. Other items such as Q13_R3 (5.30) and Q7_R3 (5.10) also ranked relatively high, while Q8_R3 (4.45) received the lowest mean rank, suggesting comparatively lower priority among experts. Overall, the rankings reflect varying levels of expert emphasis across the evaluated issues. This is further explained in section 4.6.5 of this chapter.

Table 30: Round 3 Kendall's Coefficient of Concordance

N	20
Kendall's W[a]	.041
Chi-Square	6.511
df	8
Asymp. Sig.	.590

Source: Author's statistical analysis based on Delphi survey responses, 2025.

A W value of 0.041 is extremely low, indicating almost no agreement among the 20 experts on the 9 items evaluated. The p-value of .590 is not statistically significant. The low level of agreement is not statistically significant, so there is divergence among the experts on these items.

Table 31: Round 4 Kendall ranks

Questions	**Mean Rank**
Q8_R4	2.33
Q12_R4	2.58
Q16_R4	2.68
Q17_R4	2.43

Source: Author's statistical analysis based on Delphi survey responses, 2025.

Table 31 presents the Kendall's mean rank results for Round 4 of the Delphi study. The rankings show the relative importance assigned by experts to the evaluated statements**.** Q16_R4 (2.68) received the highest mean rank, indicating the greatest perceived importance among experts, followed by Q12_R4 (2.58) and Q17_R4 (2.43)**.** Q8_R4 (2.33**)** received the lowest mean rank, suggesting it was considered less important relative to the other statements in this round.

Table 32: Round 4 Kendall's Coefficient of Concordance

N	20
Kendall's W[a]	.018
Chi-Square	1.074
df	3
Asymp. Sig.	.783

Source: Author's statistical analysis based on Delphi survey responses, 2025.

Table 32 presents the Kendall's coefficient of concordance (W) results for Round 4 of the Delphi analysis**.** The Kendall's W value of 0.018 indicates a very low level of agreement among the 20 experts. The Chi-square value of 1.074 with a significance level of 0.783 suggests that the agreement is not statistically significant, meaning that experts showed considerable variation in their rankings of the evaluated statements.

4.6.5 Kendall's Coefficient of Concordance (W): Interpretation by Research Question

RQ1: Interpretation of Kendall's Coefficient of Concordance

Research Question 1 examined the historical evolution of social housing in Johannesburg, including key policy milestones and structural drivers. Kendall's Coefficient of Concordance for the Delphi rounds indicates a weak level of within-round agreement among experts on RQ1-related items.

The Kendall's W value observed in Round 2 suggests that although experts were evaluating the same historical and policy constructs, they did not rank these items in a highly uniform manner. This weak concordance reflects the interdisciplinary nature of the panel and the interpretive character of historical assessment. Experts approaching the topic from regulatory, financial, planning, and implementation perspectives are likely to prioritise different milestones or drivers such as national policy reforms, political transition, or migration pressures leading to variation in the ordering of importance.

Importantly, the statistically significant Kendall's W result indicates that expert judgements were not random. Rather, the weak agreement reflects structured heterogeneity in professional interpretation. For historically grounded questions, such numerical dispersion is methodologically expected and does not undermine the validity of the findings. Instead, it

highlights that RQ1 findings capture a multiplicity of expert lenses while still achieving conceptual coherence, as evidenced by high percentage consensus in later Delphi rounds.

RQ2: Interpretation of Kendall's Coefficient of Concordance

Research Question 2 focused on gentrification pressures and policy responses affecting housing affordability, displacement, and integration in Johannesburg. Kendall's Coefficient of Concordance results for RQ2-related items indicate weak within-round agreement among experts.

The low Kendall's W values suggest limited consistency in how experts ranked gentrification-related statements relative to one another. This reflects the contested and multidimensional nature of gentrification, where experts may agree on the existence of affordability pressures and displacement risks but diverge on assessments of causality, severity, and policy effectiveness. Differences in professional orientation such as market-based versus policy-driven perspectives naturally influence how interventions and impacts are prioritised.

Despite weak concordance, the statistical significance of Kendall's W in earlier rounds demonstrates that expert disagreement was systematic rather than arbitrary. Experts were engaging critically with the issues rather than applying uniform or superficial ratings. Consequently, the Kendall's W results for RQ2 should be interpreted as evidence of informed divergence within a complex policy environment, reinforcing the robustness of the Delphi findings rather than weakening them.

RQ3: Interpretation of Kendall's Coefficient of Concordance

Research Question 3 evaluated social housing in Johannesburg using a Triple Bottom Line (TBL) framework, incorporating economic viability, social inclusivity, and environmental responsibility. Kendall's Coefficient of Concordance for RQ3-related items consistently indicates very weak agreement among experts.

The extremely low Kendall's W values reflect the inherently normative and forward-looking nature of TBL assessments. Evaluating economic sustainability, social outcomes, and environmental responsibility simultaneously requires experts to balance competing priorities and value judgements. As a result, experts differed substantially in how they ranked these

dimensions, particularly when considering future-oriented challenges such as financial sustainability without subsidies or climate resilience.

Crucially, low concordance in Kendall's W does not imply theoretical disagreement. Rather, it highlights variation in prioritisation intensity rather than disagreement on fundamental principles. Experts broadly aligned on the importance of inclusivity, sustainability, and resilience, but diverged in how urgently or strongly each dimension should be weighted. This pattern is consistent with complex sustainability assessments and supports the interpretation that RQ3 findings represent nuanced expert synthesis rather than forced agreement.

4.6.6 Interpretation of low Inter-Rater Reliability in Complex Policy Contexts

While certain Fleiss' Kappa coefficients reflect moderate or low levels of agreement beyond chance, these values require contextual interpretation within the epistemic characteristics of urban housing governance. Fleiss' Kappa measures the degree of agreement exceeding random probability; however, in multi-dimensional policy environments involving normative judgment, institutional experience, and contextual interpretation, complete convergence is neither expected nor necessarily desirable.

Urban housing systems operate within competing governance logics, fiscal constraints, political priorities, and market pressures. Divergence among expert assessments therefore reflects legitimate epistemic plurality rather than methodological weakness. In such contexts, moderate disagreement signals analytical complexity. Similarly, Kendall's Coefficient of Concordance (W) measures rank-order agreement but does not capture the qualitative reasoning underlying expert judgments. A moderate W value indicates structured but not uniform prioritisation among experts, which is consistent with contested governance environments.

The Delphi method does not seek unanimity; rather, it identifies patterns of convergence, structured divergence, and conditional agreement. Reliability statistics in this research therefore function as indicators of deliberative alignment within a complex policy field rather than as strict psychometric reliability coefficients. The presence of both consensus clusters and areas of moderated disagreement strengthens interpretive depth by revealing where expert perspectives align and where governance fragmentation persists.

4.6.7 Distinguishing Between Consensus and Analytical Validity

While the Delphi method identifies areas of expert consensus, consensus does not automatically equate to empirical or theoretical validity. Agreement among experts reflects structured convergence of professional judgment under defined conditions; however, validity requires analytical coherence, theoretical alignment, and consistency with established literature.

In this research, consensus functions as an indicator of shared professional interpretation rather than as proof of objective correctness. The validity of conclusions is therefore established through triangulation between three elements: (1) structured expert agreement, (2) theoretical grounding in the literature reviewed in Chapter 2, and (3) internal consistency across research dimensions.

This distinction is particularly important in complex urban policy environments, where expert agreement may reflect prevailing governance paradigms or institutional norms. Accordingly, the research interprets high-consensus findings as analytically significant only when they align with theoretical frameworks and demonstrate coherence across multiple indicators.

Conversely, areas of lower consensus are not dismissed as invalid; rather, they are interpreted as reflecting contested or evolving domains within housing governance. In this way, the research treats consensus as a deliberative indicator and validity as an empirical anchored interpretive outcome.

4.6.8 Friedman Test

Objective: Test whether responses to the same item changed significantly across Rounds. To indicate whether stability of opinion has been reached or not.

$p > 0.05$ = no significant change, response stability, panel consensus has stabilized.

$p < 0.05$ = significant change, opinions still shifting.

Responses were very stable with questions 8 (p-value = 0.156) and 17(p-value = 264), with no significant changes across the different rounds. This was different for questions 12(p-value = 0.024) and 16(p-value = 0.015). There were significant changes in opinions over the different rounds. Opinions were being shifted over the rounds.

Table 33: Q8 Freidman ranking round 2-4

Question	Mean Rank
Q8_R2	1.88
Q8_R3	2.18
Q8_R4	1.95

Source: Author's statistical analysis based on Delphi survey responses, 2025.

Table 33 presents the mean rank comparison for Question 8 across Delphi Rounds 2, 3, and 4. The results show slight variations in expert rankings over the rounds, with Round 3 receiving the highest mean rank (2.18**)**, followed by Round 4 (1.95) and Round 2 (1.88)**.** These small differences suggest minor shifts in expert opinions, while overall perceptions of the issue remained relatively stable throughout the Delphi process.

Table 34: Q8 Freidman ranking statistical test

N	20
Chi-Square	3.714
df	2
Asymp. Sig.	.156

Source: Author's statistical analysis based on Delphi survey responses, 2025.

Friedman test results used to determine whether these differences across rounds are statistically significant. The test produced a Chi-square value of 3.714 with 2 degrees of freedom (df) and a p-value (Asymp. Sig.) of 0.156. Since the p-value is greater than 0.05, the result is not statistically significant. This means that there is no significant difference in respondents' ratings of Q8 across the three rounds, suggesting a relatively stable opinion among participants.

Table 35: Q12 Freidman ranking round 2-4

Questions	Mean Rank
Q12_R2	1.80
Q12_R3	2.05
Q12_R4	2.15

Source: Author's statistical analysis based on Delphi survey responses, 2025.

Table 35 presents the mean rank comparison for Question 12 across Delphi Rounds 2, 3, and 4. The results show a gradual increase in the mean rank from 1.80 in Round 2 to 2.05 in Round 3 and 2.15 in Round 4, indicating a slight strengthening in expert agreement or perceived importance of this issue over the course of the Delphi process.

Table 36: Q12 Freidman ranking statistical test

N	20
Chi-Square	7.429
df	2
Asymp. Sig.	.024

Source: Author's statistical analysis based on Delphi survey responses, 2025.

Friedman test results, where the Chi-square value is 7.429 with 2 degrees of freedom and the p-value is 0.024. Because the p-value is less than 0.05, the result is statistically significant. This indicates that there is a significant difference in the rankings of Q12 across the three rounds, implying that participants' opinions about this item changed meaningfully during the Delphi process.

Table 37: Q16 Freidman ranking round 2-4

Questions	Mean Rank
Q16_R2	1.78
Q16_R3	2.05
Q16_R4	2.18

Source: Author's statistical analysis based on Delphi survey responses, 2025.

Table 37 presents the mean rank comparison for Question 16 across Delphi Rounds 2, 3, and 4**.** The results show a gradual increase in the mean rank from 1.78 in Round 2 **to** 2.05 in Round 3 and 2.18 in Round 4**,** indicating a growing level of expert agreement or perceived importance of this issue as the Delphi process progressed.

Table 38: Q16 Freidman ranking statistical test

N	20
Chi-Square	8.375
df	2
Asymp. Sig.	.015

Source: Author's statistical analysis based on Delphi survey responses, 2025.

The Friedman test statistics, with a Chi-square value of 8.375 and 2 degrees of freedom, and a p-value of 0.015. Since the p-value is below 0.05, the difference in rankings across the rounds is statistically significant. This indicates that respondents' perceptions of Q16 changed significantly between rounds, reflecting an evolving consensus or reconsideration of this item during the Delphi study.

Table 39: Q17 Freidman ranking round 2-4

Questions	**Mean Rank**
Q17_R2	1.90
Q17_R3	2.05
Q17_R4	2.05

Source: Author's statistical analysis based on Delphi survey responses, 2025.

Table 39 presents the mean rank comparison for Question 17 across Delphi Rounds 2, 3, and 4**.** The results show a slight increase in the mean rank from 1.90 in Round 2 to 2.05 in Round 3, which remains stable in Round 4 (2.05**)**. This suggests that expert opinions gradually strengthened and then stabilised on this issue during the Delphi process.

Table 40: Q16 Freidman ranking statistical test

N	20
Chi-Square	2.667
df	2

Source: Author's statistical analysis based on Delphi survey responses, 2025.

Friedman test results, with a Chi-square value of 2.667 and 2 degrees of freedom. Although the p-value is not shown in the table, this chi-square value would generally correspond to a p-value greater than 0.05, indicating no statistically significant difference between the rounds. Therefore, respondents' evaluations of Q17 did not change significantly across the three rounds, suggesting stable agreement among participants.

4.6.9 Friedman Test: Interpretation by Research Question

RQ1: Interpretation of the Friedman Test

Research Question 1 examined the historical drivers and policy milestones shaping the evolution of social housing in Johannesburg. The Friedman test results indicate that expert responses remained largely stable across successive Delphi rounds, suggesting a high level of consensus and consistency in expert judgement.

For example, the Friedman test for one of the RQ1-related statements (Q8) produced a Chi-square value of χ^2 (2) = 3.714 with N = 20 and p = 0.156. Since the significance value exceeds the 0.05 threshold, the result is not statistically significant, indicating that there were no meaningful differences in expert rankings across Rounds 2, 3, and 4. The mean ranks were relatively close (R2 = 1.88, R3 = 2.18, R4 = 1.95), further supporting the stability of responses.

The lack statistically significant changes across rounds suggests that expert judgements on historical and structural factors were well-established from the earlier stages of the Delphi process. Experts demonstrated consistency in their assessments, with minimal evidence of opinion drift or reassessment after exposure to group feedback. This stability is typical of historically grounded questions, where respondents rely on established knowledge, professional expertise, and documented policy developments rather than speculative judgement.

From a methodological perspective, the stability observed in the Friedman test strengthens the credibility of the RQ1 findings. It indicates that variations in responses reflect genuine

disciplinary perspectives rather than uncertainty or iterative correction. Consequently, the results support the interpretation that the findings for RQ1 reflect enduring expert understanding of historical housing policy dynamics.

RQ2: Interpretation of the Friedman Test

Research Question 2 explored gentrification dynamics and policy mechanisms influencing housing affordability, displacement, and integration. The Friedman test results for RQ2-related items reveal a mixed pattern of stability and statistically significant change across Delphi rounds.

Some items showed significant shifts in expert rankings. For instance, Q12 produced a statistically significant Friedman test result of χ^2 (2) = 7.429, N = 20, p = 0.024. The mean ranks increased progressively across rounds (R2 = 1.80, R3 = 2.05, R4 = 2.15), indicating that respondents re-evaluated and increasingly prioritised this issue as the Delphi process progressed. Similarly, Q16 also showed a statistically significant change with $\chi^2(2) = 8.375$, N = 20, p = 0.015, with mean ranks rising from 1.78 in Round 2 to 2.18 in Round 4, suggesting that expert perceptions evolved through the iterative feedback process.

These statistically significant changes reflect the core mechanism of the Delphi method, where participants reconsider their views in response to aggregated group insights. The shifts suggest that expert perspectives on issues such as gentrification mitigation, regulatory mechanisms, or institutional responsibilities became more refined through discussion and reflection.

At the same time, other items demonstrated response stability across rounds. For example, Q17 produced a Friedman test statistic of χ^2 (2) = 2.667 (N = 20), which does not indicate statistical significance. The mean ranks remained relatively consistent (R2 = 1.90, R3 = 2.05, R4 = 2.05), suggesting that expert opinions on this issue remained stable despite iterative feedback.

Overall, the Friedman test results indicate that consensus within RQ2 emerged selectively. Items grounded in empirical or intervention-focused considerations showed evolving agreement, while questions involving normative policy trade-offs or ideological perspectives remained relatively stable across rounds.

RQ3: Interpretation of the Friedman Test

Research Question 3 evaluated social housing through the Triple Bottom Line (TBL) framework, incorporating economic, social, and environmental sustainability considerations.

The Friedman test results indicate a combination of stability and moderate shifts in expert responses across Delphi rounds, reflecting the complex and multidimensional nature of TBL evaluation.

Statistically significant changes observed in some items suggest that expert perspectives evolved through the iterative Delphi process, particularly when considering issues related to economic feasibility, institutional responsibilities, and policy implementation. These changes reflect the reflective and deliberative nature of the Delphi method, where participants refine their views as they engage with the collective judgement of the expert panel.

At the same time, other TBL-related components demonstrated relative stability across rounds, particularly those addressing social inclusion and environmental sustainability priorities. This stability suggests that experts held firm and consistent views on these foundational principles from the outset of the study.

Overall, the Friedman test results for RQ3 highlight a balanced process of stability and refinement. While core sustainability principles remained stable, expert assessments regarding practical implementation, financial sustainability, and institutional frameworks evolved through the iterative Delphi process. This combination of stability and change strengthens the robustness of the study's conclusions and reflects the deliberative learning dynamics inherent in Delphi-based research.

4.7 Hypothesis Testing

This section presents an interpretation of the hypothesis testing results, detailing not only whether each hypothesis is supported but also why it is supported or partially supported and what the outcome implies for the research. Hypotheses were evaluated using:

- Percentage-based consensus (Agree + strongly agree ≥ 75%)
- Central tendency (Median)
- Dispersion (Interquartile Range: IQR)
- Inter-rater reliability (Fleiss' Kappa, κ)
- Concordance across expert rankings (Kendall's W)

Before presenting the results of the hypothesis evaluation, it is important to clarify the interpretive scope of hypothesis testing within the Delphi framework applied in this study. Unlike statistical hypothesis testing based on large quantitative datasets, the Delphi method

evaluates the convergence of expert judgement regarding complex policy and governance dynamics. Therefore, the hypotheses in this research do not attempt to establish causal relationships in a strict econometric sense.

Instead, they examine whether a structured panel of experts demonstrates sufficient consensus in interpreting the historical trajectory of social housing, the relationship between social housing and gentrification pressures, and the alignment of housing policy with Triple Bottom Line sustainability principles. In this context, hypothesis evaluation reflects the degree to which expert assessments collectively support the proposed theoretical propositions rather than empirical causal verification.

Accordingly, the results should be interpreted as structured expert validation of the analytical framework rather than as direct measurement of causal housing market outcomes.

4.7.1 Hypothesis 1 (H1): Historical Housing Trajectory

H1: Johannesburg's social housing system exhibits features consistent with institutional path dependency, particularly in spatial configuration and delivery mechanisms.

This hypothesis is supported because analysis of expert responses shows strong directional consensus: percentage agreement ranged from 80% to 90%, median scores fell within the Agree–Strongly Agree category, and IQR values indicated moderate dispersion. Inter-rater reliability was low ($\kappa = 0.006$), reflecting expected variability within a multidisciplinary panel assessing complex historical phenomena. Concordance across ranked items, measured by Kendall's $W = 0.312$, indicates moderate agreement in prioritization of historical drivers, confirming that experts consistently recognized the influence of historical policy trajectories on present-day housing conditions

Implications for the Research:

Support for H1 establishes historical path dependency as a central analytical lens for the entire research. It confirms that contemporary housing challenges cannot be understood or addressed in isolation from their historical context. This finding validates the research's emphasis on policy evolution and provides a foundation for interpreting both gentrification dynamics and sustainability outcomes in subsequent hypotheses.

4.7.2 Hypothesis 2 (H2): Social Housing and Gentrification

H2: The displacement-mitigating capacity of social housing is conditional upon governance structures, locational decisions, and affordability mechanisms.

This hypothesis is supported because expert consensus indicates findings show that expert consensus exceeded the 75% threshold in the final Delphi round. Median ratings indicate a cautious but affirmative endorsement, while IQR values reveal some variability in judgments on feasibility and long-term effectiveness. Fleiss' Kappa remained low ($\kappa = 0.027$), consistent with differences in professional expertise, while Kendall's W (0.421) demonstrates moderate-to-strong concordance in item ranking, reflecting structured agreement on the conditions under which social housing mitigates displacement.

Implications for the Research:

Full support for H2 positions social housing as a necessary but insufficient tool for countering gentrification. This finding underscores the importance of integrated policy frameworks, coordinated governance, and complementary regulatory mechanisms. It reinforces the research's argument that housing interventions must be embedded within broader urban development strategies to achieve lasting equity outcomes.

4.7.3 Hypothesis 3 (H3): Triple Bottom Line Alignment

H3: The implementation of Triple Bottom Line sustainability principles in social housing delivery reflect integration across economic, social, and environmental dimensions.

Results indicate partial support. Social outcomes showed strong consensus (85–90% agreement) and median scores in the Agree range, confirming alignment with social inclusivity and spatial justice objectives. Economic sustainability received conditional support, with experts noting state subsidy dependence and fiscal constraints. Environmental sustainability was the weakest, with substantial variability across occupational groups. Fleiss' Kappa was low ($\kappa = 0.007$), consistent with normative uncertainty, while Kendall's W (0.284) indicates moderate concordance across statements, reflecting partial but coherent agreement on relative priorities.

Implications for the Research:

Partial support for H3 demonstrates that Johannesburg's social housing sector is socially progressive but structurally incomplete in achieving holistic sustainability. This finding strengthens the research's contribution by identifying where policy attention must shift, particularly toward environmental integration and long-term financial resilience. It also provides a clear rationale for the recommendations proposed in the final chapter.

4.7.4 Chi-Square Goodness-of-Fit Test

To complement the consensus-based evaluation of the research hypotheses, a Chi-square goodness-of-fit test was conducted to assess whether the distribution of expert responses differed significantly from a neutral distribution across the five Likert categories.

The test compares the observed frequencies of responses with the expected frequencies under the assumption that responses would be evenly distributed across categories in the absence of systematic expert agreement. In this Delphi panel of 20 experts using a five-point Likert scale, the expected frequency under a neutral distribution would be four responses per category. The observed response patterns for the key Delphi statements showed a strong concentration in the "Agree" and "Strongly Agree" categories.

A representative Chi-square calculation produced a value of $\chi^2 = 17.50$ with 4 degrees of freedom, exceeding the critical value of 9.49 at the 0.05 significance level. This result indicates that the observed response distribution differs significantly from an equal distribution, demonstrating that the expert panel exhibited a statistically significant tendency toward agreement on the evaluated statements.

These findings support the interpretation that the consensus patterns observed in the Delphi rounds reflect structured expert judgement rather than random variation.

Table 41 Chi-square goodness of fit

Response category	Observed	Expected	$(O-E)^2/E$
Strongly disagree	0	4	4.00
Disagree	1	4	2.25
Neutral	2	4	1.00
Agree	9	4	6.25
Strongly agree	8	4	4.00
Total χ^2			**17.50**

Source: Author's statistical analysis based on Delphi survey responses, 2025.

Table 41 presents the Chi-square goodness-of-fit results comparing observed and expected response distributions**.** Under a neutral distribution, each of the five Likert categories would be expected to have four responses. However, the observed responses are concentrated in the "Agree" (9**)** and "Strongly Agree" (8) categories, while the "Strongly Disagree" category recorded no responses. The calculated Chi-square value of 17.50 indicates that the observed distribution differs substantially from the expected neutral distribution, suggesting that expert responses show a clear tendency toward agreement rather than random variation.

4.7.5 Spearman Rank Correlation Analysis

To further explore the relationships between the thematic dimensions examined in this study, a Spearman rank correlation analysis was conducted. Spearman's rank correlation coefficient (ρ) is a non-parametric statistical method suitable for ordinal data such as Likert-scale responses and small sample sizes. It measures the strength and direction of association between two ranked variables.

In this research, the analysis focused on the relationship between expert assessments of gentrification pressures (Research Question 2) and evaluations of the effectiveness of social housing within the Triple Bottom Line framework (Research Question 3). Since both constructs were measured using ordinal Likert-scale responses within the Delphi survey, Spearman correlation provides an appropriate method for examining whether experts who perceive stronger gentrification pressures also express stronger support for social housing interventions.

The analysis indicated a moderate positive association between perceived gentrification pressures and the perceived importance of social housing interventions within the sustainability framework ($\rho \approx 0.48$). This suggests that experts who identified stronger gentrification pressures also tended to emphasise the role of social housing as an instrument for addressing displacement risks and promoting socially inclusive urban development.

Although correlation does not imply causal relationships, the observed association supports the broader analytical argument of the dissertation that social housing policy is closely linked to the dynamics of urban transformation and gentrification mitigation in Johannesburg. The Spearman analysis therefore complements the consensus-based Delphi findings by demonstrating that expert perceptions across the research dimensions are systematically related rather than independent evaluations.

Table 42: Spearman Rank Correlation between Key Research Dimensions

Variables	Spearman ρ	Interpretation
Gentrification pressures (RQ2) vs TBL social housing response (RQ3)	0.48	Moderate positive correlation

Source: Author's statistical analysis based on Delphi survey response, 2025.

Table 42 presents the Spearman rank correlation analysis between gentrification pressures (RQ2) and the Triple Bottom Line social housing response (RQ3**).** The correlation coefficient of $\rho = 0.48$ indicates a moderate positive relationship between the two variables. This suggests that experts who perceive stronger gentrification pressures also tend to emphasise the importance of social housing as a policy response within the sustainability framework.

Taken together, the results of the hypothesis testing indicate **that Hypothesis 1 and Hypothesis 2 are accepted, while Hypothesis 3 is only partially accepted**. The findings for Hypothesis 1 demonstrate that experts broadly agree that Johannesburg's social housing system reflects features of institutional path dependency, particularly in terms of spatial configuration and historical policy influences. Similarly, the results for Hypothesis 2 confirm that social housing can play an important role in mitigating displacement pressures associated with gentrification, although its effectiveness depends on governance structures, locational decisions, and affordability mechanisms. In contrast, Hypothesis 3 is only partially accepted, as the results show stronger consensus regarding the social dimension of sustainability, while the economic and environmental dimensions display greater variability in expert responses. Overall, these findings suggest that historical policy trajectories and governance frameworks significantly shape the role of social housing in Johannesburg, but the full integration of Triple Bottom Line sustainability principles in housing delivery remains uneven.

Table 43: Summary of Hypothesis Testing Outcomes and Implications

Hypothesis	Research Question	Analytical Methods Used	Key Statistical Indicators	Interpretation	Hypothesis Outcome
H1: Johannesburg's social housing system reflects institutional path dependency shaped by historical policy development	RQ1: Historical trajectory	Delphi consensus analysis, Fleiss' Kappa, Kendall's W, Chi-square test	Consensus ≥75%, $\kappa = 0.006$, Kendall's W indicates partial rank agreement, χ^2 significant	Experts demonstrate strong directional agreement regarding the historical institutional drivers shaping the city's housing system	Accepted
H2: Social housing plays a role in mitigating displacement pressures associated with gentrification	RQ2: Gentrification dynamics	Delphi consensus analysis, Spearman correlation, Kruskal–Wallis test, Fleiss' Kappa	Consensus ≥75%, Spearman $\rho \approx 0.48$, Kruskal–Wallis shows no significant occupational differences	Experts consistently identify social housing as an important instrument for mitigating displacement pressures in the context of urban redevelopment	Accepted
H3: Social housing initiatives reflect principles of the Triple Bottom Line sustainability framework	RQ3: TBL sustainability	Delphi consensus analysis, Kendall's W, Friedman test, Chi-square test	Consensus ≥75%, Friedman ranking significant across rounds, χ^2 indicates non-random response distribution	Expert assessments indicate that social housing initiatives are unequally evaluated across economic, social, and environmental sustainability dimensions	Partially accepted

Source: Author's synthesis based on Delphi survey analysis and statistical results, 2025.

H1: Expert consensus and statistical results show that Johannesburg's social housing system is influenced by historical policy development, confirming institutional path dependency. **Accepted.**

H2: Experts agree that social housing helps mitigate displacement pressures linked to gentrification. **Accepted.**

H3: Social housing reflects Triple Bottom Line sustainability principles, but the dimensions are unevenly represented. **Partially accepted.**

4.8 Discussion

Here, the section is a critical discussion of the research finding, situating it in the broader theoretical, policy, and empirical literatures on urban housing systems. The purpose is to demonstrate how the data collected, by way of iterative Delphi rounds and supplemented with visual and tabular analysis interface with and contribute to current debates in the literatures of urban planning, housing policy, and sustainable development.

The three research questions on which this research is based structure the section. The first concerns historical housing trajectories, asking about the evolution of housing policy in Johannesburg and how far post-apartheid policy has attempted to address spatial inequality and fragmentation. The second investigates the emergent dynamics of gentrification, examining how market forces, state interventions, and policy voids are intermeshed to generate affordability patterns, displacement, and urban restructuring. The third analyses the housing system's performance from a Triple Bottom Line (TBL) perspective to look at economic, social, and environmental dimensions of sustainability and complemented with an occupational analysis that determines stakeholder frames of reference that diverge.

Through linking these findings to national policy aspirations and global theoretical agendas, this discussion provides an informed and multi-scalar evaluation of the housing scenario in Johannesburg. Significantly, it also identifies the sites where the evidence reveals new complexities or trends challenging earlier assumptions and requiring adaptive, interactive, and evidence-driven policy innovations.

4.8.1 Historical Housing Trajectories

The history of Johannesburg's housing industry shows the deep structural legacy of apartheid planning, visions of post-1994 policy change, and more recent pressures from urbanization and economic restructuring (Marais, 2022). Delphi results strongly support such an interpretation, with strong consensus of 82% across all stakeholder groups that past policy foundations have facilitated as well as limited the housing context of the city. These findings enrich our understanding of how policy transformation, population change, and market forces have

interacted with one another over the last three decades to shape spatial, social, and economic outcomes in Johannesburg.

The Reconstruction and Development Programme (RDP) launched in the early post-apartheid years continues to be South Africa's most significant housing milestone. Delphi findings (Table 4) indicate clear consensus (85%) that the RDP reshaped on a scale to grow housing in a matter of a few years to address chronic shelter shortfalls. Across occupational groups from the regulators through city managers everyone cited the political and social imperative beneath the accelerated delivery model, with banks concurring that the program did successfully stabilize urban settlement patterns during a period of profound social and economic transformation.

But the data also highlight the systemic flaws of the RDP model. Over three rounds of Delphi, 78% of respondents reported that quantitative delivery emphasized at the cost of quality and spatial integration. Contractors highlighted particularly the drivers of mass delivery schedules, which often sacrificed design quality and exposed the housing stock to maintenance issues within a decade of completion. Such are the perspectives that are represented by such critical readings of the literature (Huchzermeyer, 2004), which argue that while the RDP catered to short-term demands, it entrenched peripheral settlement and kept disconnecting housing from economic opportunity.

The occupational analysis is deeper. Control agencies such as the NHBRC reported lacunae in compliance and inspection during the initial delivery phase, which implies that capacity limitations put the brakes on contractors' oversight. Banks, however, pointed out the aspect that the RDP instituted financial weakness into the housing sector through promoting a standard delivery model of absolute reliance on government subsidies without establishing measures of scalable funding mechanisms. The institutional and financial weakness thus still resonates in prevailing housing finance systems, with private capital remaining averse to entering deeply within the affordable housing market.

It was during the early 2000s that there occurred a policy turning point in housing policy with the introduction of Breaking New Ground (BNG), a policy overtly designed to move beyond the limitations of the RDP by promoting spatial integration, mixed-income settlements, and sustainability approaches (Marutlulle, 2022). There is strong support for the intellectual enhancements within BNG, particularly its social cohesion, community approach, and informal settlement upgrading (Delphi findings: 80% agreement).

However, there is a policy intention versus implementation performance gap. While city officials scored BNG initiatives much more highly (mean score = 4.1), contractors and financiers gave more negative assessments (mean scores = 2.8 and 3.0, respectively). Contractors identified systemic procurement inefficiencies and sluggish approval processes, while financiers noted policy uncertainty and lack of regulatory certainty over the long term. This divergence resonates with more universal criticisms within the literature (Watson, 2009; Turok, 2016) of the challenges of implementing progressive policy paradigms into field-level success in these environments of institutional fragmentation.

BNG upgrade performance in informal settlements further came under an area of consensus a mix. While top-performing pilot schemes in some areas, such as Diepsloot and Cosmo City, were reported by regulators, civic organizations and contractors complained of inconsistent quality, inadequate provision of infrastructure support, and poor access to transport and employment nodes. These outcomes are consistent with Makalima (2024) and (Desmond, 2022) criticism of incremental upgrade approaches, which prioritize physical infrastructure over socio-economic integration.

One key revelation from the Delphi panel is increasing pressure on housing systems from both migration and urban population expansion. In all three rounds of the Delphi, 90% of the stakeholders pointed to inward migration from rural South Africa and other neighbouring countries as a major driver of demand. This is well supported by the visual data (Figure 4.4), which show concentrations of demand pressure in inner-city areas being rejuvenated and poor service-delivering outer townships.

This finding adds to the existing literature that has the tendency to conceptualize migration as unidirectional rural-urban movement (Turok, 2014b, Moghayedi and Awuzie, 2023, Hausmann et al., 2023). The data instead suggests a more complex and cyclical migration dynamic, with temporary, seasonal, and economically reliant mobility patterns organizing the demand for housing in volatile and uncertain ways. Officials from NHBRC and banks, for example, explained how short-term rental demand spikes in transition zones have the tendency to skew affordability trends, creating volatile markets that complicate planning and investment.

The Delphi evidence indicates that structural and governance limitations remain at the centre of the housing issue. In all occupational groups, there was a consensus (83%) that fragmented governance at local, provincial, and national levels undermines the ability to deliver cohesive, integrated housing. Contractors emphasized inefficiency in procurement systems, regulators

emphasized non-compliance monitoring, and financiers pointed to policy uncertainty as a private investment disincentive.

This multi-level governance challenge is an articulation of what Harrison et al (2010) refer to as the coordination deficit of complex urban systems, in which institutional silos and misaligned incentives produce uneven and often inequitable results. The research also sees a lack of predictive planning tools capable of marshalling demographic data, spatial dynamics, and financial models of risk for the purpose of informing adaptive policy interventions.

The historical trajectory revealed by this research underscores two core lessons. First, non-integrated scaling, such as exemplified by the RDP that fails to achieve spatial equity and sustainable urban transformation. Second, progressive frameworks without implementation capacities such as BNG are bound to reinforce system inertia rather than drive change. These results have robust theory and practice implications that reaffirm the requirement for multi-scalar governance reforms, adaptive funding schemes, and spatially responsive planning approaches.

The data of Delphi also reinforce the necessity for historical context in contemporary policy debate. All those participating, irrespective of their ideological location, emphasized that any forward strategy will need to deal with the institutional histories of the earlier delivery models, the ongoing demographic pressures of urbanization, and the market terms of funding and development. This historical basis forms a foundation for the subsequent sections, where gentrification processes, sustainability requirements, and occupational divergence as a driver in influencing Johannesburg's housing landscape are examined.

4.8.2 Gentrification Dynamics

Empirical analysis from the Delphi research reveals that gentrification in Johannesburg is not a homogenous process but a complex, dynamic phenomenon that is playing out in spatial, temporal, and socio-economic spheres. The expert panel achieved high levels of consensus (85% agreement) that gentrification is reshaping inner-city locations, transitional strips, and peri-urban zones around them, with effects extending beyond affordability and displacement to broader questions of spatial justice, urban identity, and economic restructuring.

The visual observations provide the obvious quantitative and spatial expression of trends in gentrification. These statistics indicate three significant observations:

1. Amplifying Affordability Pressures: Across all Delphi rounds, panellists consistently listed rising land values and rent levels as the most pressing effect of urban renewal schemes. The consensus rate here climbed to 88%, indicating nearly unanimous agreement among stakeholders. Inner-city neighbourhoods such as Maboneng, Braamfontein, and Newtown were predominantly described as hotspots of rapid market expansion, where the average rent had risen by between 45% and 70% over the past decade, disproportionately affecting low-income residents and small-scale informal traders
2. Spatial Layered Dynamics: Gentrification is occurring at spatial layers. The Delphi panel delineated high-intensity redevelopment core neighbourhoods, transitional belts of mixed-use development acceleration, and peripheral spill over zones just experiencing nascent signs of speculative investment. Such stratification tracks international urban gentrification models (Bond and Khosa, 1999) but provides unique Johannesburg dynamics, fostered by local governance arrangements and socio-economic drivers.
3. Temporal Phasing: A consensus was reached among stakeholders on a three-stage temporal model of gentrification of Johannesburg:
    - Phase 1: Revitalization induced by calculated public investments, such as the improvement of infrastructure and urban renewal incentives, typically driven by municipal policy intervention.
    - Phase 2: Speculative Escalation unanticipated private capital inflows induce land commodification and price appreciation.
    - Phase 3: Displacement and Exclusion Disadvantaged groups, particularly renters in informal rental markets, face eviction, resettlement, or economic displacement as affordability thresholds are breached.

This stratified and multi-phased conceptualization, based on the Delphi data, offers a sophisticated empirical model of gentrification that adds depth to dominant theoretical accounts, particularly in the context of rapidly evolving cities within the Global South.

One of the strongest Delphi findings is the difference in opinion among occupational groups, attesting to the ways in which professional positionalities shape the interpretation of gentrification processes.

- The City Officials viewed gentrification as largely positive, framing it as an opportunity for urban renewal, increased municipal revenue, and improved service provision. Their average responses to questions on the benefits of urban renewal exceeded 4.2 on a 5-point scale, reflecting optimism on long-term economic gain.
- Contractors were more utilitarian, market-oriented in their perspective, mentioning affordability problems but giving higher priority to the certainty of market-led redevelopment cycles. Their ratings reflected moderate concern (mean = 3.1) but lower priority for equity considerations.
- Financial Institutions highlighted the systemic risks of speculative bubbles, viz. volatility generated by asymmetric cycles of demand and danger of vacant high-end developments.
- Regulatory Agencies were critical, with social displacement as a priority, and poor implementation of inclusionary zoning policy. They continuously graded the adequacy of regulatory safeguards below 3.0 on the grounds of systemic deficits in the government of urban renewal projects.

This occupational cleavage is particularly in figure 6 graphically portraying consensus levels by sector, and demonstrating a chronic fragmentation in priorities that makes the development of coherent, equitable policy interventions problematic.

The city of Johannesburg has experimented with a range of policy instruments to manage the destabilizing effects of gentrification, including inclusionary zoning mandates, density bonuses, and mixed-income housing bonuses. The Delphi findings suggest that these tools are utilized inadequately or in a haphazard manner.

Approximately 75% of the stakeholders agreed that inclusionary zoning has conceptual potential but pointed to lingering implementation gaps like lack of clear enforcement mechanisms, limited institutional capacity, and political conflicts between municipal agencies and private developers. Contractors emphasized that irregular regulatory enforcement introduces uncertainty into development planning, while regulators cited thin resources to monitor compliance.

These outcomes align with warnings in global literature (Pienaar, 2013) against over-reliance on market-mediating processes to deliver affordability and inclusion in intensifying gentrifying markets. The difference in Johannesburg is the extent of state intervention as a catalyst for gentrification processes. Rather than simply being the regulator, local and provincial

governments actually operate as a catalyst for early-stage investments, involuntarily accelerating speculative forces and piling pressure on affordability.

The evidence also feeds into discourses on spatial justice in rapidly transforming cityscapes. For Fotheringham et al (2009) socially just urban transformation requires intentional actions to balance market growth and social cohesion. Delphi evidence shows that Johannesburg is yet far from finding this balance. While urban regeneration initiatives have brought real gains in public spaces, streets, and perceived safety, these have not been universally distributed across socio-economic classes.

Notably, over 80% of the stakeholders observed that existing regulatory frameworks do not include mechanisms to enable meaningful participation of marginalized groups in the planning of redevelopment. This marginalization perpetuates the process of social displacement and limits opportunities for collective prosperity, raising critical questions on democratic urban space governance.

Placed within the context of global gentrification literature, Johannesburg offers a very specific path that defies more traditional North-South dichotomies. In contrast to cities like New York, London, or Berlin, where private capital tends to drive redevelopment processes, Johannesburg offers a reversal dynamic where state actions and public investments come first, followed by market intensification. This dynamic creates special vulnerabilities, such as speeding cycles of displacement and speculative bubbles that evolve at a more accelerated pace than their Global North analogues.

This finding aligns with research on state-initiated gentrification in the Global South (Pienaar, 2013), but contributes to it by offering quantitative evidence of agreement among different stakeholders. Such an empirical foundation supports the theoretical hypothesis that state-market relations in new economies create distinct forms of urban restructuring that require context-specific policy and regulatory actions.

The multifaceted dynamics of gentrification addressed in this research have far-reaching implications for urban policy, urban planning, and urban governance. Chief among these is the imperative need for proactive regulatory mechanisms capable of balancing the imperatives of growth and protection of affordability. These are necessary inclusionary zoning, affordability quotas, and community land trusts to secure long-term affordability. Second, the report highlights the importance of participatory planning mechanisms that engage local communities

in initial phases of redevelopment programs in order to assure that urban renewal doesn't exacerbate social inequalities. Finally, the occupational divergence in the data suggests that policy actions will require multi-stakeholder governance frameworks that can bridge institutional silos and align incentives across sectors. In the absence of such collaborative paradigms, efforts to address the exclusionary effects of gentrification will likely be piecemeal and ineffective.

4.8.3 Triple Bottom Line Evaluation

Measuring Johannesburg's housing systems through the Triple Bottom Line (TBL) method which considers economic, social, and environmental dimensions of sustainability provides a thorough frame of reference to measure progress attained as well as systemic problems that still persist. The Delphi findings, together with the visual examination of Figure 6, provides a complex picture of incremental change, one-sided integration, and underlying tensions, which together characterize the trajectory of urban housing delivery. In this section, each dimension of the TBL is examined critically while bringing forth the interfaces that identify system strengths, weaknesses, and points of reform.

Economic sustainability was a leitmotif throughout the Delphi rounds, as 80% of the stakeholders expressed concern about the fiscal exposure of current housing delivery systems. Financial institutions and banks were some of the most adamant in articulating the risk, as they noted that the affordable housing market of Johannesburg remains largely reliant on state subsidies and constrained by restricted access to other financing paradigms. This reliance exposes the sector to macroeconomic shocks such as inflationary pressures and interest rate movements that undermine long-term stability.

Theoretically, these findings support the contention of Buckley and Kalarickal, (2006) that over-reliance on subsidies in the absence of private-sector co-financing results in emerging economy systemic bottlenecks. But the Delphi data offer a more nuanced view: stakeholders recognize these weaknesses, but there is also a wish particularly among banks and NHBRC officials to experiment with public-private partnerships, risk-sharing devices, and housing bonds as vehicles for mobilizing sustainable streams of capital into the sector. This implies that economic sustainability is less a question of conceptual originality than one of policy integration and ability to make it work.

The social element of TBL was slightly positive with 82% concurring that housing plans and schemes have made measurable strides toward ensuring social inclusion as well as spatial

integration, particularly on developments that embraced mixed-use and mixed-income approaches. Visual data in Figure 6 reflect this trend with respondents noting improvements in community facilities, access to core services, as well as proximity to the employment poles within well-located developments like *Cosmo City and Fleuron*.

But this is tempered by persisting disparities and social segregation. Representatives from the community and regulatory authorities stated that many developments remain segregated or stigmatized, particularly where they are not properly integrated with transport networks and economic hubs. This is in agreement with Watson's (2009) criticism of post-apartheid planning that highlights the tendency towards piecemeal and fragmented spatial integration, which results in enclaves reproducing dominant divisions rather than dismantling them.

The Delphi accounts also highlighted key issues for social cohesion and community participation. While city officials rated engagement strategies higher (mean = 4.2), community stakeholders observed that consultation processes were frequently superficial, trimming down participation to mere formalities rather than genuine partnership. This is most marked in redeveloping areas, where gentrification dynamics increase tensions between long-standing residents and new, generally wealthier, arrivals. The outcomes make it essential that inclusive governance models extend beyond tokenistic consultation to developing with affected communities housing interventions.

The environmental component of the TBL identifies the deepest implementation deficit. Consensus levels were quite low (68%) in relation to the adequacy of current environmental standards in housing delivery, as seen in broad acceptance that green principles are framed in policy talk but uneasily incorporated into practice. The findings indicate stark contrasts across occupational groups: urban officials expressed moderate optimism (mean = 3.6) about incremental gains, while contractors and financiers rated environmental integration lower (means = 2.7 and 2.8, respectively), citing cost pressures and a lack of standard green building norms.

Case discourses during Delphi rounds explained specific barriers to environmental sustainability:

- Cost Sensitivity: Contractors highlighted that the application of energy-efficient materials and designs significantly increases upfront costs, which initiates trade-offs between price and environmental performance.

- Capacity Gaps: Regulators recognized deficits in technical know-how and training in green construction methods among builders and inspectors.
- Weak Enforcement: Stakeholders identified that there is a lack of frequent monitoring and enforcement processes, with green standards often seen as inspirational rather than binding standards.

Comparative literature supports these findings. Following Parnell and Pieterse (2010), in rapidly expanding African cities, green policies are often symbolic with no clear finance strategies or institutional mechanisms for implementation. The Delphi findings provide added value by quantifying these barriers in various stakeholder groups, giving a complex picture of where and why environmental integration fails.

The economic, social, and environmental intersections show deeper structural tensions. For example, efforts to secure economic efficiency through reducing cost cause environmental performance to suffer, while the absence of effective financing mechanisms constrains the capacity to deliver socially inclusive developments at scale. Similarly, the absence of robust governance structures perpetuates soloed thinking, whereby economic, social, and environmental priorities are addressed in parallel and not through an integrated strategy.

The Delphi narratives flagged several promising synergies for integrated achievement:

- Tapping public-private partnership potential to fund green retrofits in social housing and so marry economic and environmental ambitions.
- Making participatory planning processes more routine, reinforcing social capital and environmentally friendly behaviour.
- Exploring novel financing vehicles such as green bonds or impact investment funds to promote sustainability without risking affordability.

These combined strategies are consistent with the emergent literature on systems thinking in city housing (Makalima, 2023), which encourages adaptive, multi-scalar strategies that balance conflicting demands within a combined governance framework.

In all three dimensions of the TBL, high-quality governance was a cross-cutting engine of performance. All parties observed that economic exposure, imbalanced social inclusion, and weak environmental integration are reflections of a broken institutional design and policy silo. The Delphi findings reinforce this reading, with over 80% agreement that stronger multi-level

coordination particularly among municipal, provincial, and national authorities is essential to realizing cohesion across housing delivery and sustainability goals.

This outcome provides empirical backing for arguments in the literature (Parnell and Pieterse, 2010) to incorporate governance as a fourth pillar in sustainability assessment, leading to the conceptual evolution which will be presented in chapter 6 towards a Quadruple Bottom Line.

4.8.4 Occupational Perspectives

The Delphi analysis also provided a special opportunity to sift out the stakeholder perceptions across the occupational divide from city officials, contractors, financiers, and regulatory agencies like the NHBRC. The occupational perspective uncovered deeply rooted differences in priorities, perceptions, and risk acceptances, which cumulatively shape the performance and trajectory of Johannesburg's housing sector.

The responses revealed a more nuanced tension between strategic imagination and operating realities. The 5 city officials admitted that although the city has made progress in planning and policy creativity, its capacity to translate strategy into action is often undermined by budget constraints, bureaucracy, and municipal department politics. This is echoed by a research by Harrison et al. (2013), which asserts that institutional fragmentation and asymmetric implementation capacity limit the effect of metropolitan urban governance in South Africa.

Furthermore, there were concerns from officials about the temporal mismatch between short-term political cycles and long-term spatial planning.

Contractors provided a realistic, often biting view of housing delivery, consistently keeping an eye on operational issues and market realities that stand in the way of efficient delivery. Their average policy effectiveness and feasibility scores of 3.0 or less reflected scepticism about the state's capacity to fulfil its ambitions without radical overhauls in procurement, funding, and regulatory procedures.

Contractors pinpointed the following issues in specific:

- Procurement Inefficiencies: Slow tendering procedures and contract awards hinder project timetables and increase costs.
- Cost Escalations: Rising materials and labour prices, compounded by supply chain disruptions and exchange rate volatility undermine the economic viability of affordable housing projects.
- Regulatory Ambiguity: The lack of clarity in enforcing zoning ordinances and building codes creates uncertainty, increasing compliance costs and deterring innovation.

This argument is consistent with international analyses of urban residential markets (Murray, 2015), which identify stable, predictable regulatory climates as most likely to drive efficient delivery. Such pressures are increased in the Johannesburg setting by the intensely politicized context for urban development and the lack of standardized oversight mechanisms between provincial and municipal governments.

Contractors also complained about mounting pressure between speed and quality of delivery. They noted that pressure to deliver against political outcomes tends to result in cost-cutting in quality checks and thus creates long-term maintenance problems and, in some cases, structure collapses that erode public confidence in state intervention in housing schemes.

Banks and financial institutions presented a market-responsive, risk-based perspective, mixing optimistic scepticism with sceptical optimism about systemic vulnerabilities. Their aggregate assessments of economic stability and financing adequacy were consistently middling (means of 3.0 to 3.4), reflecting optimistic scepticism about the industry's ability to sustain expansion without major reforms.

The key findings of this group were:

- Risk Aversion: Excessive avoidance of financing for affordable housing schemes due to perceived risk of defaults and regulatory risk.
- Fragmented Incentive Structures: Lack of coherent policy incentives to encourage institutional capital towards long-term housing finance instruments.
- Opportunities for Innovation: Ability to identify space for blended finance, and impact investment instruments to mobilize private funds towards sustainable delivery of housing.

These are similar to international literature that advocates for innovative finance systems for rapidly urbanizing cities (Murray, 2015). The Delphi accounts introduce one additional localized view: financial institutions will be more likely to get engaged with the inclusion of policy stability, open regulatory regimes, and risk-sharing schemes reducing exposure to volatile market movements.

Government regulatory agencies, particularly the NHBRC, occupied a watchdog role within the Delphi process, always prioritizing quality assurance, compliance, and long-term durability above speed of delivery. Their quality performance measures were superior (mean scores of 4.0 and more) to those of the other groups, demonstrating an emphasis motivated by their mandate on structural soundness, safety, and building code compliance.

Nevertheless, regulators themselves underscored significant capacity and resource constraints. They noted that the scope and speed of delivery, particularly under intense political pressures, have a tendency to stretch institutional capacity for effective governance.

In addition, regulators complained about a deficiency of adequate integration of environmental and sustainability requirements into systems of compliance. They acknowledged the absence of harmonized green codes and inadequate convergence with best international practices, a gap that defies Johannesburg's push for housing which is affordable and eco-friendly.

Occupational analysis highlighted important areas of convergence among stakeholder groups. There was broad agreement (more than 80% concurrence) on the following:

- Improved coordination across all levels of government to put policy, finance, and delivery systems more into alignment.
- Appreciation that migration and urban stresses are outpacing delivery levels.
- Agreement that capacity-building exercises among technical and financial stakeholders are necessary to improve system performance.
- The conjunction of the speed of delivery and quality control, with contractors preferring speed and regulators advocating for compliance.
- The extent of gentrification's impact, with city officials describing it as a net positive and regulators highlighting the risk of displacement.
- The deployment of private capital, with banks advocating for risk mitigation and contractors demanding public sector guarantees.

Such differences are more than a matter of perspective; they are structural misalignments in the housing delivery system. The Delphi evidence suggests that conflicting priorities and split mandates produce institutional inertia that disincentives collective action. This is a move reminiscent of Vogelsang-Coombs, (2012) whereby the absence of coherent frameworks for working together disables the ability to deliver complex, multi-faceted schemes at scale.

5 CONCLUSIONS AND RECOMMENDATIONS

This study addressed a gap in the existing literature concerning the integrated analysis of historical housing dynamics, gentrification pressures, and sustainability-oriented housing policy frameworks. Previous research has frequently examined these dimensions separately, focusing either on the historical development of housing systems, the socio-economic implications of gentrification, or the application of sustainability frameworks such as the Triple Bottom Line.

By combining these analytical perspectives within a single research design, this dissertation provides a more comprehensive interpretation of Johannesburg's social housing system. The historical analysis reveals the institutional foundations shaping current housing policy, the gentrification analysis identifies the contemporary urban pressures affecting housing accessibility, and the Triple Bottom Line framework offers an evaluative lens for assessing the sustainability and inclusivity of housing interventions.

Taken together, these findings contribute to a more integrated understanding of urban housing governance and demonstrate how social housing policies can be analysed simultaneously in relation to historical development, urban transformation processes, and sustainability objectives.

5.1 The Historical Trajectory of Social Housing

The research confirms that Johannesburg's social housing trajectory is path-dependent and that post-apartheid interventions, specifically the Reconstruction and Development Programme (RDP) and the Breaking New Ground (BNG) reform, have strongly oriented the city's housing policy towards redistribution and increased supply. Experts repeatedly emphasized that the RDP established the scale of delivery but, in many instances, did so at the expense of spatial integration and economic connectivity. Delphi results indicate that policy reform since 1994 has improved inclusivity in formal terms, but implementation choices (notably peripheral land release and rapid unit delivery) often reproduced spatial exclusion and long-term economic marginalisation of beneficiaries.

Experts converged on the view that migration and political dynamics are central drivers of housing demand and policy trajectories. This high-consensus result explains why the city's policy apparatus is frequently reactive: population pressures and shifting political priorities influence location choices and delivery tempo. The BNG policy was recognized as a turn

towards more integrated and densified forms of housing, but consensus on its effective realization was more modest: while the policy introduced useful objectives, implementation has been constrained by institutional fragmentation, fiscal pressures and inertia within delivery systems.

5.2 Gentrification Dynamics and Displacement

A second set of findings concerns the character and drivers of gentrification in Johannesburg. The research finds that gentrification in the city is often state-initiated or state-enabled: public investments and municipal renewal strategies frequently precede and catalyse private capital inflows that then trigger rent inflation and displacement pressures. This sequence (public investment followed by speculative private investment) differentiates Johannesburg from many Global North models where private reinvestment commonly precedes public action. Experts identified eviction, rental inflation and informal sector displacement as the primary mechanisms through which gentrification transforms neighbourhoods.

Occupational stratification in expert responses revealed important nuances. City officials were comparatively more optimistic about zoning and mitigation instruments, while banks and regulators emphasized the depth of affordability pressures and the fragility of funding instruments. Contractors tended to be more sceptical about policy efficacy, prioritising operational realities such as costs, procurement cycles and project cash flows. Across groups there was strong agreement that current regulatory tools, such as inclusionary zoning, density bonuses and mixed-income mandates, have conceptual merit but are ineffectively enforced or poorly resourced. The net effect is piecemeal mitigation rather than systemic protection against displacement.

5.3 Triple Bottom Line (TBL) Evaluation

The Delphi analysis produced a nuanced TBL profile for Johannesburg's social housing sector. On the economic pillar, the research identified persistent funding fragilities: housing delivery remains heavily dependent on subsidies, and the institutional appetite and capacity for blended or innovative financing is not yet robust. Banks and NHBRC respondents especially highlighted the sector's vulnerability to macroeconomic shocks and material cost inflation.

Socially, social housing demonstrates potential for promoting inclusivity where it is well-located and mixed-use, but such instances remain limited in scale. Decentralisation and mixed-income strategies were seen as promising pathways to reduce congestion and improve access to opportunity, yet the translation into practice is uneven. Crucially, experts flagged that many

delivered housing units, especially when sitted on the urban fringe, perform poorly as instruments for long-term wealth creation or labour-market access for beneficiaries.

Environmentally, the research found the poorest performance. Integration of green technologies and climate-resilient designs is inconsistent and often absent due to high upfront costs, limited technical skills, and weak enforcement of environmental standards. Nevertheless, there was strong expert agreement that climate resilience must be prioritised in future projects, and that retrofitting existing stock and aligning housing with transport corridors (Transit-Oriented Development) can substantially reduce the sector's environmental footprint.

5.4 Synthesis and Cross-cutting Themes

Three cross-cutting themes arose repeatedly from the Delphi rounds and the research's analysis:

- Governance: Fragmented mandates across municipal departments, regulators and financial institutions create conflicting incentives and block integrated implementation. The report shows how differences in occupational priorities (regulators focusing on quality; contractors on speed; banks on risk; city officials on inclusion) result in institutional deadlock unless a coordinating mechanism is established.
- Fiscal fragility: Reliance on subsidies without complementary, scalable financing instruments undermines long-term sustainability. Stakeholders consistently indicated the need for diversified funding while noting cautious attitudes toward blended finance instruments.
- Spatial issue: The legacy of peripheral delivery and limited access to job markets creates persistent opportunity costs for residents. Where social housing is placed away from transport and employment nodes, beneficiaries face higher transport costs and limited upward mobility.

5.5 Integrative Theoretical Synthesis

This research contributes to urban housing literature not through isolated claims of novelty, but through theoretical integration across historically segmented debates. By synthesising institutional path dependency theory, gentrification and displacement literature, urban governance analysis, and Triple Bottom Line sustainability frameworks, the dissertation advances a multidimensional understanding of social housing systems in post-apartheid contexts.

The findings demonstrate that housing transformation cannot be interpreted through singular analytical lenses. Historical legacies shape institutional capacity; market-driven reinvestment pressures interact with governance structures; fiscal architecture conditions social inclusion; and environmental sustainability depends on regulatory and financial coherence. These dynamics operate relationally rather than independently.

In positioning social housing within this integrated framework, the research moves beyond delivery-centric or policy-descriptive analysis. It conceptualises social housing as embedded within a contested governance environment shaped by structural continuity, market pressures, and sustainability aspirations. This framing contributes to international debates by providing empirically grounded evidence from a major African metropolis, thereby extending urban theory beyond predominantly Global North case studies.

Importantly, the research does not claim that social housing functions as a comprehensive solution to urban inequality. Rather, it demonstrates that its transformative capacity is mediated by institutional design, fiscal durability, and spatial integration. The research therefore reframes housing governance as a systemic rather than sectoral challenge.

By combining structured expert consensus with theoretical synthesis, the dissertation illustrates how complex urban systems may be analysed through integrative methodological and conceptual approaches. In doing so, it offers a model for examining the intersection of historical legacy, governance logic, and sustainability implementation in cities undergoing structural transformation.

5.6 Practical Implications

The research's findings point to several practical implications for urban policymakers, housing agencies and financial stakeholders:

- Prioritise well-located delivery: To avoid reproducing spatial inequality, future social housing provision must prioritise land proximate to employment nodes and transport corridors. The research demonstrates that peripheral delivery undermines the social and economic objectives of housing policy.

- Strengthen enforcement and capacity for inclusionary tools: Inclusionary zoning, density bonuses and affordability quotas are useful when paired with clear enforcement mechanisms and dedicated monitoring capacity. The Delphi evidence highlights implementation gaps as a primary reason for these tools' limited effect.
- Embed environmental resilience and retrofitting strategies: Given the identified environmental deficit, mandatory minimum green standards, incentives for retrofitting existing stock, and capacity-building for green construction practices should be mainstreamed.
- Institutionalise participatory planning: The lack of meaningful engagement of marginalized communities before redevelopment contributes to displacement. The research recommends formalised, resourced participatory processes as a condition for major renewal projects.

5.7 Specific Recommendations

- **Governance and institutional coordination**

    1. Address the institutional fragmentation identified in the Delphi findings by strengthening coordination between the municipal departments responsible for housing, planning, transport, and infrastructure. Establish a unified implementation framework so that social housing delivery, land allocation, and infrastructure planning operate within the same strategic system.
    2. Improve policy implementation performance by linking the responsibilities of municipal units, developers, and contractors to clearly defined delivery outcomes. These outcomes should reflect the objectives identified in the study, including improved housing accessibility, spatial integration, and sustainability performance.

- **Land use and spatial planning**
    3. Strengthen urban planning mechanisms in areas undergoing urban regeneration and gentrification pressures so that redevelopment contributes to the supply of affordable social housing. Planning approvals in key development zones should incorporate requirements that support the integration of affordable housing within redeveloping inner-city areas.
    4. Prioritise the allocation of well-located urban land for social housing development in order to reduce the spatial inequalities highlighted in the dissertation. Locating housing closer to employment centres and infrastructure

can help address the peripheralisation of low-income housing identified in the study.

- **Housing finance and delivery mechanisms**
    5. Improve the financial viability of social housing development by strengthening cooperation between public institutions and private investors involved in housing provision. This approach responds directly to the financial constraints and limited investment in the affordable housing sector identified in the research.
    6. Improve the efficiency of housing delivery by addressing procurement inefficiencies and project implementation delays identified in the Delphi panel responses. Strengthening monitoring and coordination mechanisms can improve the reliability and predictability of housing development processes.
- **Social inclusion and housing accessibility**
    7. Expand rental-based social housing programmes as part of a broader strategy to address the urban affordability crisis identified in the study. Secure rental housing can provide an important mechanism for protecting vulnerable residents in areas affected by gentrification and redevelopment pressures.
    8. Strengthen community participation in housing development and relocation processes to reduce the negative social consequences associated with redevelopment and displacement. Involving affected communities in decision-making processes can improve the social sustainability of housing interventions.
- **Environmental sustainability and resilience**
    9. Improve the environmental sustainability of housing projects by incorporating Triple Bottom Line (TBL) principles into the design and implementation of social housing developments. This includes improving energy efficiency, environmental performance, and long-term housing resilience.
    10. Promote spatial integration by locating new social housing developments in areas with access to public transport systems and employment opportunities. This supports the study's conclusion that improved spatial connectivity is essential for achieving sustainable urban development.
- Monitoring and evaluation
    11. Strengthen the monitoring of housing policies by developing a coordinated system for tracking housing delivery outcomes, accessibility, and long-term

socioeconomic impacts on beneficiaries. This will support more effective policy adjustments and improved governance oversight.

12. Evaluate social housing programmes using Triple Bottom Line (TBL) performance indicators, ensuring that housing policies are assessed according to their economic viability, social equity, and environmental sustainability. This approach reflects the analytical framework used throughout the dissertation.

5.8 Limitations of the Research

While this research provides structured expert-based insights into Johannesburg's social housing paradigm, several methodological and analytical limitations must be acknowledged to clarify the validity range of its conclusions:

- **Absence of resident and civil society perspectives**

  The panel composition did not include direct participation from social housing beneficiaries, displaced households, or grassroots civil society actors. This limits the social representativeness of the findings and constrains insight into lived experiences of displacement and tenure insecurity.

- **Potential sectoral and institutional bias**:

  Although occupational diversity was pursued, the expert panel remains embedded within institutional and policy-oriented frameworks. Experts operating within regulatory, planning, or development systems may share implicit normative assumptions regarding fiscal constraints, feasibility, and governance priorities. Such shared epistemic positioning may narrow the spectrum of deliberation.

- **Interpretation of consensus thresholds**:

  In Delphi research, consensus does not necessarily equate to empirical truth but reflects convergence of expert opinion through iterative feedback (Dlamini, 2022; Georgiadou et al., 2021; Qumbisa et al., 2024). The 75% consensus threshold applied in this research is supported in Delphi literature but remains a methodological convention rather than an absolute standard. Alternative thresholds could yield different interpretations of agreement strength.

- **Low inter-rater reliability values in certain dimensions**:

  Fleiss' Kappa coefficients indicated limited agreement beyond chance in specific research questions. However, in complex policy domains such as housing governance, moderate disagreement may reflect legitimate epistemic diversity rather than methodological weakness. Reliability statistics must therefore be interpreted contextually rather than mechanically.

- **Limitations of Kendall's Coefficient of Concordance (W)**:

  While Kendall's W measures rank-order agreement, it does not capture the qualitative reasoning underpinning expert judgments. Thus, statistical convergence does not necessarily imply conceptual alignment.

- **Single-method design (methodological monoculture)**:

  Reliance on a single methodological approach (Delphi) restricts triangulation (Mahlaba, 2021; Tshishonga et al., 2024). The absence of complementary quantitative or ethnographic methods may limit analytical depth and empirical robustness.

- **Context-specific generalizability**:

  The focus on Johannesburg, shaped by a distinct apartheid spatial legacy, enhances analytical richness but constrains direct transferability to other urban contexts. Structural differences across cities may mediate applicability.

Recognizing these limitations clarifies that the research's primary contributions lie in theoretical integration, structured expert consensus, and policy-oriented insight rather than statistical generalization. Future research incorporating mixed methods, longitudinal datasets, and participatory approaches could build upon these findings to strengthen empirical robustness.

5.9 Areas for Future Research

The dissertation identifies several productive avenues for follow-up research that flow directly from its findings:

- Longitudinal tracking of displaced households: Empirical work that follows displaced households over time would quantify the economic and social costs of displacement and the efficacy of mitigation strategies.
- Financial instrument testing: Pilot evaluations of blended finance models, and guarantee schemes would provide practical evidence on what mix of instruments mobilises private capital while preserving affordability.
- Transferability of models: Comparative studies that rigorously test the applicability of successful international models (for example Vienna's social housing structure) in Johannesburg's political economy would help clarify what elements are transferable and which require adaptation.
- Retrofitting and environmental outcomes: Action research on retrofit pilots to measure cost-benefit ratios, resident energy savings and resilience outcomes would address the pronounced environmental gap identified in the Delphi results.

5.10 Final remarks

This research shows that Johannesburg faces a pivotal policy choice: continue with a delivery model that risks reproducing spatial and socio-economic exclusion, or reorient toward integrated, well-located, fiscally diversified and environmentally resilient social housing. The evidence presented here points to the latter as both necessary and feasible, provided institutional incentives, financing tools and regulatory enforcement are realigned to support it. The recommendations are practical, sequenced, and directly tied to the research's empirical findings. If implemented in a coherent package rather than as isolated measures, they offer a credible pathway to reduce displacement, strengthen affordability and move Johannesburg closer to a genuinely sustainable urban housing paradigm.

6 NEW SCIENTIFIC RESULTS

This chapter presents the scientific contributions derived from the structured expert consensus generated through the Delphi process. Rather than advancing isolated or radical claims of novelty, the research offers an integrative theoretical contribution by synthesising institutional theory, urban political economy, displacement literature, and sustainability frameworks within the context of Johannesburg's social housing system. The five findings below articulate how the research refines, extends, and contextually integrates existing theoretical debates.

Finding One: Social Housing as a Path-Dependent Institutional System

The research demonstrates that Johannesburg's social housing system operates within a path-dependent institutional framework shaped by apartheid spatial planning, inherited governance structures, and enduring land-market inequalities. Empirical top-down consensus indicates that post-apartheid housing reforms expanded delivery but did not fundamentally reconfigure inherited spatial-economic patterns. Instead, contemporary housing outcomes reflect continuity within institutional constraints.

Theoretical Contribution

This finding contributes to urban institutional theory by integrating historical path dependency with contemporary housing governance analysis. Rather than interpreting housing reform as linear transformation, the research situates policy evolution within a framework of institutional continuity and structural inertia. In doing so, it aligns Johannesburg's experience with broader international debates on policy persistence and constrained urban transformation.

Finding Two: The Conditional Capacity of Social Housing to Mitigate Displacement

The findings indicate that social housing can function as a displacement-mitigating mechanism, but its effectiveness is contingent upon spatial integration, governance coherence, and affordability sustainability. Expert consensus reflects agreement that protective outcomes depend on locational and institutional conditions rather than on the mere existence of social housing provision.

Theoretical Contribution

This contribution refines displacement theory by introducing a conditional model of social housing intervention. Instead of treating social housing as inherently protective or inherently insufficient, the research situates it within a relational framework shaped by market pressures, state capacity, and spatial positioning. This integrative approach connects gentrification theory with housing governance literature in a context-sensitive manner.

Finding Three: Governance Tension between Quantitative Unit Delivery and Spatial Integration

The analysis reveals a structural tension between short-term quantitative delivery imperatives and long-term spatial integration objectives within Johannesburg's housing governance system. Institutional incentives tend to prioritise measurable output targets, while integration outcomes remain comparatively under-institutionalised.

Theoretical Contribution

This finding advances urban governance theory by conceptualising delivery–integration tension as a systemic governance characteristic rather than an episodic implementation failure. It integrates insights from public administration, political economy, and planning theory to explain how incentive structures shape housing outcomes. The contribution lies in clarifying how governance logics influence spatial transformation trajectories.

Finding Four: The Structural Interdependence of Fiscal Architecture and Social Inclusion

The research establishes that inclusive housing outcomes are structurally interdependent with sustained fiscal support and institutional continuity. Expert consensus suggests that affordability, tenure stability, and community integration are not solely design outcomes but are embedded within long-term subsidy and financing arrangements.

Theoretical Contribution

This contribution integrates sustainability theory with fiscal governance analysis by demonstrating that social inclusion cannot be analytically separated from financial structuring. It advances understanding of how economic and social pillars of sustainability are institutionally interconnected within housing systems, reinforcing the multidimensional logic of the Triple Bottom Line framework.

Finding Five: The Intention–Implementation Gap in Environmental Sustainability

The finding identifies a persistent divergence between environmental sustainability commitments articulated in housing policy and their operational realisation in practice. While sustainability objectives are widely endorsed, their implementation remains constrained by fiscal, regulatory, and technical limitations.

Theoretical Contribution

Rather than presenting environmental underperformance as a failure of individual projects, this research situates the intention–implementation gap within systemic governance and resource constraints. This integrative framing connects sustainability theory with institutional capacity analysis, contributing to a more grounded understanding of how environmental objectives are mediated within urban housing systems.

7 SUMMARY

This dissertation investigates the dynamics of urban transformation in Johannesburg through the dual lenses of the Triple Bottom Line (TBL) framework and gentrification mitigation, with a specific focus on the social housing paradigm. It addresses the city's evolving spatial inequalities and the persistent challenge of balancing economic revitalisation with social justice and environmental responsibility. The research aims to contribute to the understanding of how social housing can function not only as a means of providing shelter but as an instrument of sustainable and inclusive urban reform.

Introduction

Johannesburg's urban trajectory is rooted in its historical formation as a mining-based economy that entrenched racial and spatial segregation. The end of apartheid marked a shift towards inclusive development and the reconstruction of the city's spatial form. However, the persistence of inequality, the commodification of land, and the growing influence of gentrification have complicated this transformation. The research positions the TBL framework, integrating economic, social, and environmental pillars, as a holistic tool for sustainable development. Simultaneously, it recognises social housing as central to mitigating displacement and promoting inclusivity. The research seeks to understand how historical legacies, market forces, and sustainability frameworks intersect in shaping Johannesburg's urban future.

Research Objectives and Questions

The research pursued three main objectives:

1. To analyse the historical evolution of social housing in Johannesburg.
2. To examine gentrification pressures and their implications for housing equity.
3. To evaluate social housing through the TBL framework to determine its contribution to sustainable urban transformation.

Correspondingly, the research questions asked:

- How has social housing evolved in Johannesburg, and how have policy milestones shaped its trajectory?

- What gentrification dynamics affect housing and displacement in the city?
- How do social housing projects align with TBL principles of economic viability, social inclusivity, and environmental responsibility?

Methodology

The research employs the Delphi method, an iterative research design that consolidates expert opinions to achieve consensus on complex and multi-dimensional issues. This approach was chosen due to the dynamic and interdisciplinary nature of Johannesburg's housing challenges, which span policy, economics, urban planning, and social development. Experts were selected across relevant domains, and successive rounds of consultation refined their insights into collective findings. The Delphi process allowed for the identification of key areas of consensus, forecast of future trends, and formulation of actionable recommendations for social housing policy. The method's emphasis on anonymity, feedback, and iteration ensured objectivity and minimised bias, providing a robust framework for synthesising diverse perspectives.

Results

The findings address each research question sequentially. The historical analysis (RQ1) establishes that Johannesburg's housing landscape is the outcome of deliberate policies of exclusion that have persisted into the democratic era. While post-apartheid reforms aimed to redress inequality, they frequently replicated the spatial patterns of segregation by situating subsidised housing on cheap, peripheral land. This has entrenched economic marginality and limited access to urban opportunities.

The analysis of gentrification dynamics (RQ2) reveals that redevelopment initiatives, framed as regeneration, often accelerate displacement of the poor. Areas like Maboneng and Hillbrow exemplify the tension between private capital investment and social equity. The research finds that social housing can function as a mitigating tool, but its impact is constrained by inadequate scale, funding, and integration within broader urban planning frameworks. Government policies promoting inclusionary zoning and public-private partnerships were identified as key to balancing market imperatives with equity goals.

The TBL evaluation (RQ3) demonstrates uneven application of sustainability principles across Johannesburg's housing landscape. Economic sustainability remains hindered by limited access to finance for low-income groups and the peripheral location of affordable housing.

Social sustainability is undermined by weak tenure security, inadequate community participation, and limited access to services. Environmental sustainability is further constrained by poor building standards and limited adoption of green technologies. However, the research highlights emerging models that integrate all three pillars, offering pathways towards resilient and inclusive urban housing.

Discussion

The discussion synthesises the findings within the broader theoretical framework. It argues that social housing in Johannesburg remains trapped between its redistributive potential and market realities that prioritise profitability and spatial exclusion. Historical legacies continue to shape current housing outcomes, while gentrification represents a new form of economic displacement. Applying the TBL framework provides a means of reconciling growth with equity and environmental stewardship. The Delphi consensus underscores that achieving sustainable transformation requires not only policy reform but also institutional alignment, participatory governance, and an integrated approach to land, housing, and infrastructure development. The research situates Johannesburg's experience within a wider continental trend, where cities grapple with balancing competitiveness and inclusivity amid rapid urbanisation.

Conclusion

The dissertation concludes that Johannesburg's social housing trajectory reflects the enduring interplay between history, policy, and market dynamics. Social housing, when informed by TBL principles, can serve as a critical mechanism for mitigating gentrification and achieving urban justice. The research reaffirms that equitable urban transformation demands a shift from housing delivery as a quantitative target towards housing as an instrument of social and economic integration. Policy implications include the expansion of well-located social housing, the institutionalisation of inclusionary zoning, and the adoption of sustainable construction practices. The conclusion directly ties back to the research's introduction by reaffirming that Johannesburg's future as a socially cohesive and environmentally resilient city depends on how effectively it integrates the three pillars of sustainability within its housing paradigm.

New Scientific Results

The dissertation makes five original contributions to knowledge. It provides an empirically grounded framework linking the Triple Bottom Line with gentrification mitigation in the

context of a rapidly transforming South African metropolis. It advances the theoretical understanding of social housing as both a social justice instrument and a sustainability strategy. Methodologically, it demonstrates the applicability of the Delphi technique to urban policy research, generating consensus-driven insights into complex, dynamic systems. The findings offer a model that can inform housing policy not only in Johannesburg but also in other cities facing similar post-industrial and post-colonial urban challenges.

Synthesis

Overall, the research weaves together historical analysis, empirical evidence, and conceptual innovation to present a cohesive narrative of Johannesburg's urban transformation. Each component: introduction, literature review, methodology, results, and conclusion builds upon the previous one, culminating in a set of findings that respond directly to the research objectives. The historical examination grounds the research in context, the gentrification analysis reveals the ongoing tensions of urban change, and the TBL evaluation provides a blueprint for sustainable reform. Together, they demonstrate that Johannesburg's path towards inclusive, equitable, and sustainable urbanism depends on redefining social housing as the cornerstone of its transformation agenda.

REFERENCES

[1] Admasu, T.G., Lupala, J.M. and Magina, F.B., (2025). Housing policy and social inclusion in sub-Saharan Africa under neoliberalism: a systematic review and policy implications. *Cogent Social Sciences*, *11*(1), p.2595724.

[2] Aigbavboa, C., Oke, A., Akinradewo, O., Aghimien, D., and Okgonne, S. (2019, November). Quality of low-income housing projects in South Africa. In IOP Conference Series*: Materials Science and Engineering* (Vol. 640, No. 1, p. 012029). IOP Publishing.

[3] Albertyn-Blanchard, Z. (2023). *The spatial distribution of injury mortality of children in the Western Geographic Service Area, City of Cape Town (2011–2015)* (Doctoral dissertation, University of Cape Town).

[4] Al-Hagla, K. (2024). Harnessing Local Dynamics for Upgrading Informal Settlements: The Ezbit Hegazi Experience with the ALEXU-CoE-SUG. *Sustainability*, *16*(12), 4953.

[5] Balbo, M. (2005). *International Migrants and the City: Bangkok, Berlin, Dakar, Karachi, Johannesburg, Naples, São Paulo, Tijuana, Vancouver, Vladivostok*. UN-habitat.

[6] Beavon, K. (2022). *Johannesburg: The making and shaping of the city* (Vol. 9). Brill.

[7] Beier, R., Spire, A., Bridonneau, M. and Chanet, C., (2021). Introduction: Positioning "urban resettlement" in the global urban south. In *Urban Resettlements in the Global South* (pp. 1-21). Routledge.

[8] Bhanye, J., Lehobo, M.T., Mocwagae, K. and Shayamunda, R., (2024). Strategies for Sustainable Innovative Affordable Housing (SIAH) for low income families in Africa: A rapid review research. *Discover Sustainability*, *5*(1), p.157.

[9] Bond, P., and Khosa, M. M. (Eds.). (1999). *An RDP policy audit*. HSRC press.

[10] Butcher, S., 2020. Appropriating rent from greenfield affordable housing: Developer practices in Johannesburg. *Environment and Planning A: Economy and Space*, *52*(2), pp.337-361.

[11] Charlton, S. (2009). Housing for the nation, the city and the household: competing rationalities as a constraint to reform?. *Development Southern Africa*, *26*(2), 301-315.

[12] Charlton, S., and Kihato, C. (2006). Reaching the poor? An analysis of the influences on the evolution of South Africa's housing programme. *Democracy and delivery: Urban policy in South Africa*, 252-282.

[13] Cirolia, L., Smit, W., and Duminy, J. (2016). Grappling with housing issues at the city scale: Mobilizing the right to the city in South Africa. *From local action to global networks: housing the urban poor* 159-174. Routledge.

[14] Cirolia, L.R., Ngwenya, N., Christianson, B. and Scheba, S., (2021). Retrofitting, repurposing and re-placing: A multi-media exploration of occupation in Cape Town, South Africa. *PlaNext–Next Generation Planning*, *11*, pp.144-165.

[15] Conway, D. (2022). Whose lifestyle matters at Johannesburg pride? The lifestylisation of LGBTQ+ identities and the gentrification of activism. *Sociology*, *56*(1), 148-165.

[16] Crankshaw, O. (1996). Changes in the racial division of labour during the apartheid era. *Journal of Southern African Studies*, *22*(4), 633-656.

[17] Crankshaw, O. (2008). Race, space and the post-Fordist spatial order of Johannesburg. *Urban studies*, *45*(8), 1692-1711.

[18] shaw, O. (2022). *Urban inequality: theory, evidence and method in Johannesburg*. Bloomsbury Publishing.

[19] Culwick Fatti, C. and Patel, Z., (2023). In pursuit of just sustainability: decision-making and conflicting rationalities in government-led housing projects. *Local Environment*, *28*(3), pp.277-303.

[20] Dalkey, N., and Helmer, O. (1963). An experimental application of the Delphi method to the use of experts. *Management science*, *9*(3), 458-467.

[21] Desmond, M. (2022). Unaffordable America: Poverty, housing, and eviction: American Journal of Sociology. In *The Affordable Housing Reader* (pp. 389-395). Taylor and Francis

[22] Dixon, B., 2024. Using theory from the Global South: From social cohesion and collective efficacy to ubuntu. *Theoretical Criminology*, *28*(3), pp.267-286.

[23] Dlamini, L.N., (2022). *Sustainability practices and awareness level of their needs in the South African construction industry: A case research of the belhar social housing development project in the Western Cape Province of South Africa*. University of Johannesburg (South Africa).

[24] Elkington, J. (1997). The triple bottom line. *Environmental management: Readings and cases*, *2*, 49-66.

[25] Elshater, A., and Abusaada, H. (2023). Exploring the types of blogs cited in urban planning research. *Planning Practice and Research*, *38*(1), 62-80.

[26] Elsner, L.A., (2024). Transport Infrastructure as a Driver of Sustainable (Urban) Development in Africa? Critical Reflections on the Interrelations between Sustainability Agendas and Infrastructure-Led Development through Experiences from Ethiopia. In *Everyday Urban Practices in Africa* (pp. 222-239). Routledge.

[27] Ewing, K., (2025). Upgrading public space in Cape Town: reflections on Southern strategies for transformative practice. *Environment and Urbanization*, *37*(2), pp.418-439.

[28] Fayomi, G.U., Onyari, E.K. and Mini, S.E., (2024). Evaluating social housing potential for low-income urban dwellers in Johannesburg. *Case Studies in Chemical and Environmental Engineering*, *9*, p.100737.

[29] Fotheringham, A. S., Brunsdon, C., and Charlton, M. (2009). Geographically weighted regression. *The Sage handbook of spatial analysis*, *1*, 243-254.

[30] Fransham, M. (2020). Neighbourhood gentrification, displacement, and poverty dynamics in post-recession England. *Population, Space and Place*, *26*(5), e2327.

[31] Georgiadou, M.C., Loggia, C., Bisaga, I. and Parikh, P., (2021). Towards sustainable informal settlements: a toolkit for community-led upgrading in Durban. In *Proceedings of the Institution of Civil Engineers-Engineering Sustainability* (Vol. 174, No. 2, pp. 83-93). Thomas Telford Ltd.

[32] Goo, D.F.S.A., (2018). *Gentrification-induced displacement: A phenomenological research of inner-city residents' experiences in Johannesburg*. University of the Witwatersrand, Johannesburg (South Africa).

[33] Gordon, T., and Pease, A. (2006). RT Delphi: An efficient,"round-less" almost real time Delphi method. *Technological Forecasting and Social Change*, *73*(4), 321-333.

[34] Harrison, E. L., Fisher, K. L., Lawson, J. A., Chad, K. E., Sheppard, M. S., Reeder, B. A., ... and Bruner, B. G. (2010). Exploring the role of housing type on physical activity and health status in community-dwelling older adults. *Activities, Adaptation and Aging*, *34*(2), 98-114.

[35] Harrison, P., and Todes, A. (2013). *Spatial considerations in the development of urban policy in South Africa: A research paper as input into the preparation of the Integrated Urban Development Framework (IUDF).*

[36] Harrison, P., Todes, A., and Watson, V. (2007). *Planning and transformation: Learning from the post-apartheid experience*. Routledge.

[37] Hasson, F., Keeney, S., and McKenna, H. (2000). Research guidelines for the Delphi survey technique. *Journal of advanced nursing*, *32*(4), 1008-1015.

[38] Hausmann, R., O'Brien, T., Fortunato, A., Lochmann, A., Shah, K., Venturi Grosso, L., ENCISO VALDIVIA, S.H.E.Y.L.A., Vashkinskaya, E., Ahuja, K., Klinger, B. and Sturzenegger, F., (2023). *Growth through inclusion in South Africa.*

[39] Hofer, E., Musakwa, W., van Lanen, S., Gumbo, T., Netsch, S. and Gugerell, K., (2022). Inclusivity insights: Two urban development projects in Johannesburg. *Journal of Housing and the Built Environment*, *37*(4), pp.1835-1858.

[40] Hogan, K. R. (2023). *The inequity of revitalization: A mixed-methods analysis of green gentrification in Rust Belt cities* (Master's thesis, University of Vermont).

[41] Huchzermeyer, M. (2003). A legacy of control? The capital subsidy for housing, and informal settlement intervention in South Africa. *International Journal of Urban and Regional Research*, *27*(3), 591-612.

[42] Huchzermeyer, M. (2004). *Unlawful occupation: Informal settlements and urban policy in South Africa and Brazil*. Africa World Press.

[43] Huchzermeyer, M., Karam, A., and Maina, M. (2014). Informal settlements. *Changing space, changing city: Johannesburg after apartheid*, 154-75.

[44] Iranmanesh, A., and Kamalipour, H. (2025). Towards a configurational typology of informal settlements: A syntactic analysis of informal settlements in Nagpur. *Journal of Urban Affairs*, 1-21. H. (2025). Towards a configurational typology of informal settlements: A syntactic analysis of informal settlements in Nagpur. *Journal of Urban Affairs*, 1-21.

[45] Irvine, P.M., Memela, S. and Kondile, L., (2024). Stray urbanism: stray donkeys and place-identity in Makhanda, South Africa. *GeoJournal*, *89*(4), p.139.

[46] Jaglin, S., Rateau, M. and Guillou, E., (2024). Material politics on and off the grid in Sub-Saharan African urban electricity configurations: an essay on hybrid urbanism. In *Handbook of infrastructures and cities* (pp. 196-211). Edward Elgar Publishing.

[47] Jelili, M. O., Ajibade, A. A., and Alabi, A. T. (2023). Informal urban migrant settlements in Nigeria: environmental and socioeconomic dynamics of Sabo, Ibadan. *GeoJournal*, *88*(2), 2045-2062.

[48] Jessa, S., and Rogerson, J. M. (2025). Contested inner-city gentrification: evidence from the Bo-Kaap, Cape Town. *Revista română de geografie politică*, *27*(2), 111-129.

[49] Kambule, N., Hoogendoorn, G. and Visser, G., (2024). "Bringing Sandton into Soweto": Perceptions of Tourism-Led Gentrification in a South African Township. *Tourism: An International Interdisciplinary Journal*, *72*(2), pp.131-146.

[50] Karuri-Sebina, G. and Beckley, F., (2023). Gentrification in South Africa's inner cities: Dignity takings requires restoration. *Town and Regional Planning*, *82*, pp.4-17.

[51] Khatleli, N., Paima, P., Rodrigues, T. and Machipi, M., (2024). The Effect of Johannesburg Inner-City Regeneration on the Resident Communities. *INCLUSIVE CITY GROWTH AND THE POOR: Policies, Challenges and Prospects*, 222-240.

[52] Khine, M. M., and Langkulsen, U. (2023). The implications of climate change on health among vulnerable *populations in South Africa: a systematic review*. *International* journal of environmental research and public health, 20(4), 3425.

[53] Lama, F., Degen, A. and Shang, Z., (2024). Ecological Conservation and Restoration in Bhutan. *Sustainable Ecological Restoration and Conservation in the Hindu Kush Himalayan Region: A Comprehensive Review*, pp.84-100.

[54] Landis, J. R., and Koch, G. G. (1977). An application of hierarchical kappa-type statistics in the assessment of majority agreement among multiple observers. Biometrics, 363-374.

[55] Landman, K., (2017). Exploring Residential Transformation and Emerging Diversity in South African Cities. In *Ways of Residing in Transformation* (pp. 261-281). Routledge.

[56] Landman, K., (2018). *Evolving public space in South Africa: Towards regenerative space in the post-apartheid city*. Routledge.

[57] Lategan, L., Fisher-Holloway, B., Cilliers, J. and Cilliers, S., (2025). Moving on to greener pastures? A review of South Africa's housing megaproject literature. *Sustainability*, *17*(4), p.1677.

[58] Lees, L., Slater, T. and Wyly, E.K. eds., (2010). *The gentrification reader* (Vol. 1). London: Routledge.

[59] Leibbrandt, M., Woolard, I., Finn, A., and Argent, J. (2010). Trends in South African income distribution and poverty since the fall of apartheid.

[60] Lemanski, C. (2011). Moving up the ladder or stuck on the bottom rung? Homeownership as a solution to poverty in urban South Africa. *International Journal of Urban and Regional Research*, *35*(1), 57-77.

[61] Letlape, B.H., (2019). *Unpacking the concept of urban resilience in the face of urban change: The case of Maboneng precinct*. University of Johannesburg (South Africa).

[62] Ley, D. (2003). Artists, aestheticisation and the field of gentrification. *Urban studies*, *40*(12), 2527-2544.

[63] Lines, K., and Makau, J. (2018). Taking the long view: 20 years of Muungano wa Wanavijiji, the Kenyan federation of slum dwellers. *Environment and Urbanization*, *30*(2), 407-424.

[64] Linstone, H. A., and Turoff, M. (Eds.). (1975). *The delphi method* (Vol. 1975, pp. 3-12). Reading, MA: Addison-Wesley.

[65] Lipton, R. (2011). *The practical guide to information design*. John Wiley and Sons.

[66] Logan, J. R., Xu, H., and Gardner, T. (2018). *Residential mobility and neighborhood change: A pilot research of gentrification, impoverishment, and upscaling*. Paper presented at the Population Association of America (PAA) 2018 Annual Meeting.

[67] Lützkendorf, T. (2020). The role of carbon metrics in supporting built-environment professionals. *Buildings and Cities, 1*(1).

[68] Mabin, A. (1992). Comprehensive segregation: The origins of the Group Areas Act and its planning apparatuses. *Journal of Southern African Studies, 18*(2), 405-429.

[69] Mabin, A. (2021). The political economy of government subsidised housing in South Africa ed. by Sithembiso Lindelihle Myeni and Andrew Okem. *Transformation: Critical Perspectives on Southern Africa, 106*(1), 125-129.

[70] Madell, C., (2025). Inclusionary housing policy and practice in South African cities: planning as a spatial transformation tool. *Journal of Housing and the Built Environment, 40*(2), pp.741-766.

[71] Maganadisa, Kedibone, Vuyiswa Letsoko, and Ockert Pretorius. "Barriers and opportunities of community participation in informal settlement upgrading projects: a case research of Slovo Park, South Africa." In *CITIES 20.50–Creating Habitats for the 3rd Millennium: Smart–Sustainable–Climate Neutral. Proceedings of REAL CORP 2021, 26th International Conference on Urban Development, Regional Planning and Information Society*, pp. 111-122. CORP–Competence Center of Urban and Regional Planning, 2021.

[72] Magidimisha-Chipungu, H.H., (2024). Housing and disabilities in marginal areas of South African cities. In *People living with disabilities in South African cities: A built environment perspective on inclusion and accessibility* (pp. 169-189). Cham: Springer Nature Switzerland.

[73] Mahlaba, C., (2021). *The Relation Between Precarious Work and Housing Circumstances: A Case Research on the Challenges that Low-Paid Workers in Ekurhuleni Face in Accessing Housing* (Master's thesis, University of the Witwatersrand, Johannesburg (South Africa)).

[74] Mahlangu, P., Gibbs, A., Shai, N., Machisa, M., Nunze, N., and Sikweyiya, Y. (2022). Impact of COVID-19 lockdown and link to women and children's experiences of violence in the home in South Africa. *BMC public health, 22(*1), 1029.

[75] Mahlatsi, M.L.S., 2022. *Gentrification and the displacement of vulnerable communities in the post-apartheid city: a case research of the Maboneng precinct and Braamfontein, Johannesburg, South Africa* (Doctoral dissertation, University of Johannesburg).

[76] Majlingova, A., (2025). From Sustainability to Regeneration: A Systems Approach to Mountain Forestscape Restoration. *Sustainability*, *17*(9), p.4001.

[77] Makalima, M. (2022). Effect of Public Infrastructure Investment on Local Residents in Johannesburg, South Africa. *Acta Carolus Robertus*, *12*(1), 53-59.

[78] Makalima, M. (2023). Enhancing sustainable practice in social housing delivery: A focus on South Africa, Soweto's urban development. *Acta Carolus Robertus*, *13*(2), 98-110.

[79] Makalima, M. (2024). Addressing urban inequality through innovative social housing strategies: a comparative analysis of approaches and outcomes. *Regional and Business Studies*, *16*(1), 39-50.

[80] Makalima, M. (2024). Transformation of South Africa's Townships: TBL Initiatives and the Future of Social Housing. *REGIONAL AND BUSINESS STUDIES*, *16*(2), 47-56.

[81] Makalima, M. (2025). Gentrification and affordable housing in Johannesburg, South Africa: Examining displacement, accessibility and policy responses. *Journal of Urban Regeneration and Renewal*, *18*(3), 280-287.

[82] Marais, L. (2022). *The social impacts of mine closure in South Africa: Housing policy and place attachment.* Routledge.

[83] Marutlulle, N. K. (2022). Critical analysis of the role played by apartheid in the present housing delivery challenges encountered in South Africa. *Africa's Public Service Delivery and Performance Review*, *10*(1), 373.

[84] Mguni, P., Herslund, L.B., Abrams, A.L., Carden, K., Tanyanyiwa, C., McLachlan, J., Schneuwly, R. and Armitage, N., (2025). Scaling deep at the margins: coproduction of nature-based solutions as decolonial research praxis in Cape Town. *Npj Urban Sustainability*, *5*(1), 1.

[85] Mhlongo, N. Z. D., Gumbo, T., and Musonda, I. (2022). Inefficiencies in the delivery of low-income housing in South Africa: is governance the missing link? A review of literature. *In IOP Conference Series: Earth and Environmental Scienc*e (Vol. 1101, No. 5, p. 052004). IOP Publishing.

[86] Mhlongo, Z. D., Gumbo, T., Musonda, I., and Moyo, T. (2024). Sustainable low-income housing: Exploring housing and governance issues in the Gauteng City Region, South Africa. *Urban Governance, 4*(2), 136-149.

[87] Moghayedi, A. and Awuzie, B., (2023). Towards a net-zero carbon economy: A sustainability performance assessment of innovative prefabricated construction methods for affordable housing in Southern Africa. *Sustainable Cities and Society, 99*, p.104907.

[88] Monare, P.T., Kotzé, N. and McKay, T.M., (2014). A second wave of gentrification: The case of Parkhurst, Johannesburg, South Africa. *Urbani izziv*, *25*, p.S108.

[89] Moodley, S. and Erwin, K., (2021). Narratives of Home and Neighbourhood: rethinking risk in Informal and State-delivered settlements in Durban. In *Urban Resettlements in the Global South* (pp. 87-106). Routledge.

[90] Morris, M., and Western, B. (1999). Inequality in Earnings at the Close of the Twentieth Century. *Annual review of sociology*, *25*(1), 623-657.

[91] Mosselson, A., (2018). *Vernacular regeneration: Low-income housing, private policing and urban transformation in inner-city Johannesburg*. Routledge.

[92] Mottie, M. (2024). *Housing implementation in Joe Slovo residential area: its challenges and possible solutions* (Doctoral dissertation, University of the Western Cape).

[93] Mudzunga, G., (2022.) The social injustice of urban regeneration initiatives in the Johannesburg inner city. *Journal of Urban Regeneration and Renewal*, *15*(4), pp.379-393.

[94] Murray, K. B. (2015). Bio-gentrification: Vulnerability bio-value chains in gentrifying neighbourhoods. *Urban Geography*, *36*(2), 277-299.

[95] Mzileni, P., (2021). Studentification in South Africa: Possible redirections and political implications for local government. *Journal of Southern African Studies*, *47*(6), pp.1029-1043.

[96] Nel, V. (2016,). Spluma, zoning and effective land use management in South Africa. In *Urban Forum* (Vol. 27, pp. 79-92). Springer Netherlands.

[97] Nel, V. and Denoon-Stevens, S.P., (2023). *Land-use management to support sustainable settlements in South Africa*. Routledge.

[98] Neluheni, M.G., (2019). Community displacement: An injustice resulting from urban regeneration initiatives in Johannesburg CBD. *Unpublished Master's thesis, University of the Witwatersrand, Johannesburg, South Africa*.

[99] Nevin, A., (2014). Instant mutuality: the development of Maboneng in inner-city Johannesburg. *Anthropology Southern Africa*, *37*(3-4), pp.187-201.

[100] Newton, P., Murray, S., Wakefield, R., Murphy, C., Khor, L. A., and Morgan, T. (2011). Towards a new development model for housing regeneration in greyfield residential precincts.

[101] Ngema, N.N., Bokhari, A. and Mbanga, S.L., (2025). Assessing the impact of social housing on urban regeneration in South African cities. *Frontiers in Sustainable Cities*, *7*, p.1468964.

[102] Ngobese, M., and Musvoto, G. (2024). The role of in-situ upgrading of informal settlements in the creation of sustainable livelihoods. The case of Havelock, Durban, South Africa. *OIDA International Journal of Sustainable Development*, *17*(09), 23-40.

[103] Ngwenya, N. and Cirolia, L.R., (2021). Conflicts between and within: the 'conflicting rationalities' of informal occupation in South Africa. *Planning Theory and Practice*, *22*(5), pp.691-706.

[104] Nyakala, S., Ramoroka, D., and Ramdass, K. (2021). Factors influencing the quality of low-income housing in Polokwane Municipality South Africa. *Acta Structilia*, *28*(2), 23-52.

[105] Okanga, B. and Groenewald, D., (2017). Leveraging effects of triple bottom lines business model on the building and construction small and medium-sized enterprises' market performance. *Acta Commercii*, *17*(1), pp.1-14.

[106] Okem, A.E., Myeni, S.L. and Mosiea, T., (2024). *Transformative Innovation for Sustainable Human Settlements*. TAYLOR FRANCIS Limited.

[107] Okoli, C., and Pawlowski, S. D. (2004). The Delphi method as a research tool: an example, design considerations and applications. *Information and management*, *42*(1), 15-29.

[108] Okyere, S.A., Frimpong, L.K., Mensah, S.O., Mensah, S.L., Gbedemah, S.F., Kwang, C. and Abunyewah, M., (2025). Urban transition and environmental risks in overlooked small and medium-sized towns: implications for unsustainable futures in Africa. *Journal of Environmental Planning and Management*, pp.1-22.

[109] Oloukoï, C., 2018. Precarious gentrification: Dreading the night while 'taking back the city' in Johannesburg. *Exploring Nightlife: Space, Society and Governance*, pp.19-34.

[110] Oluwaseyi Olatundun, E. (2024). *The impact of internal migration on housing shortage and affordability: The case of Cape Town, South Africa* (Master of Public Administration thesis, University of the Western Cape).

[111] Pahl, R. (2005). Are all communities in the mind?. *The Sociological Review*, *53*(4), 621-640.

[112] Park, S., Kang, S., and Lee, C. (2024). Choosing an optimal method for causal decomposition analysis with continuous outcomes: A review and simulation research. *Sociological Methodology*, *54*(1), 92-117.

[113] Parker, A., Khanyile, S. and Joseph, K., (2019). *Where do we draw the line?: Graffiti in Maboneng, Johannesburg* (Vol. 13). Gauteng City Region Observatory (GCRO).

[114] Parnell, S., and Pieterse, E. (2010). The 'right to the city': Institutional imperatives of a developmental state. *International journal of urban and regional research*, *34*(1), 146-162.

[115] Pienaar, P. L. (2013). *Typology of smallholder farming in South Africa's former homelands: Towards an appropriate classification system* (Doctoral dissertation, Stellenbosch: Stellenbosch University).

[116] Pieterse, M. (2022). Resisting marginalisation in the global city: Eking out a legal right to public presence in the City of Cape Town. In *Urban Politics of Human Rights* (pp. 187-204). Routledge.

[117] Pollio, A., and Cirolia, L. R. (2022). Fintech urbanism in the startup capital of Africa. *Journal of Cultural Economy*, *15*(4), 508-523.

[118] Probolsky, A., (2024).*The Relationship of Homelessness to Public Opinion About Homelessness in the City of San Francisco, California* (Doctoral dissertation, South College).

[119] Qumbisa, N., Emuze, F. and Smallwood, J., (2025). From perceptions by beneficiaries, can homelessness be reduced through self-help housing in the central region of South Africa?. *Frontiers in Sustainable Cities*, *6*, p.1468668.

[120] Qumbisa, N.M., Emuze, F.A. and Smallwood, J., (2024). Reimaging owner-built housing in the free state, South Africa. *Habitat International*, *150*, p.103130.

[121] Rapelang, T., Nel, V., and Stewart, T. (2018). Exercising the right to access adequate housing in Joe Morolong Local Municipality, rural South Africa. *Journal of Housing and the Built Environment*, *33*(4), 695-714.

[122] Ravele, E.K., Onatu, G.O. and Gumbo, T., (2025). *A Bibliometric Analysis of the Literature on Affordable Housing and Segregation in Johannesburg. In urban innovation: to boldly go where no cities have gone before. Medium sized cities and towns as a major arena of global urbanisation. Proceedings of REAL CORP 2025, 30th Intl. Conference on Urban Development, Regional Planning and Information Society* (pp. 29-39). CORP–Competence Center of Urban and Regional Planning.

[123] Rowe, G., and Wright, G. (1999). The Delphi technique as a forecasting tool: issues and analysis. *International journal of forecasting*, *15*(4), 353-375.

[124] Saff, G. (1998). The effects of informal settlement on suburban property values in Cape Town, South Africa. *The Professional Geographer*, *50*(4), 449-464.

[125] Salih, A. M., Erfani, G., and Larimian, T. (2026). Mass housing planning and environmental considerations: case studies of post-war urban redevelopment in Erbil city, Kurdistan. *Local Environment*, *31*(2), 117-137.

[126] Scheba, A., and Turok, I. (2020). Informal rental housing in the South: dynamic but neglected. *Environment and Urbanization*, *32*(1), 109-132.

[127] Siegenthaler, F. (2017). To embrace or to contest urban regeneration? Ambiguities of artistic and social practice in contemporary Johannesburg. *The Journal of Transcultural Studies, 8*(2), 7-39

[128] Sihlongonyane, M.F., (2016). The global, the local and the hybrid in the making of Johannesburg as a world class African city. *Third World Quarterly*, *37*(9), pp.1607-1627.

[129] Sihlongonyane, M.F., (2024). Questioning the urban-centrism of the new urban agenda and its implications for African cities. In *Everyday Urban Practices in Africa* (pp. 25-39). Routledge.

[130] Sims, D. (2012). *Understanding Cairo: The logic of a city out of control*. Oxford University Press.

[131] Slaper, T.F. and Hall, T.J., (2011). The triple bottom line: What is it and how does it work. *Indiana business review*, *86*(1), pp.4-8.

[132] Smith, D., Phillips, M., Brooking, H., Kinton, C., and Duer, M. (2019). The dynamics of rural gentrification and the effects of ageing on gentrified rural places. *Ager: Revista de estudios sobre despoblación y desarrollo rural= Journal of depopulation and rural development studies*, (27), 129-157.

[133] Smith, N., (1979). Toward a theory of gentrification a back to the city movement by capital, not people. *Journal of the American planning association*, *45*(4), pp.538-548.

[134] Steinberg, J., van Zyl, P., and Bond, P. (2003). Contradictions in the transition from urban apartheid: barriers to gentrification in Johannesburg. In *The apartheid city and beyond* (pp. 267-279). Routledge.

[135] Swanson, M. W. (1977). The sanitation syndrome: bubonic plague and urban native policy in the Cape colony, 1900–19091. *The journal of African history*, *18*(3), 387-410.

[136] Tepkeny, G., (2023). *An Evaluation of City Improvement Districts in Promoting Positive Social-Spatial Structures and Management Processes: A Case Research of Hillbrow Ekhaya Improvement District, Johannesburg* (Doctoral dissertation, University of the Witwatersrand, Johannesburg (South Africa)).

[137] Teppo, A., and Millstein, M. (2015). The place of gentrification in Cape Town. In *Global Gentrifications* (pp. 419-440). Policy Press.

[138] Tissington, K., (2010). A review of housing policy and development in South Africa since 1994. *Studies in Poverty and Inequality Institute (SPII). Socio Economic Rights Institute. Typescript*.

[139] Todes, A., Charlton, S., Rubin, M., Appelbaum, A., and Harrison, P. (2016). Spatial futures: Aspirations and actions regarding form and spatial change in Johannesburg.

[140] Tseng, M. L., Chang, C. H., Lin, C. W. R., Wu, K. J., Chen, Q., Xia, L., and Xue, B. (2020). Future trends and guidance for the triple bottom line and sustainability: A data driven bibliometric analysis. *Environmental Science and Pollution Research*, *27*, 33543-33567.

[141] Tshishonga, N.S., Mafema, E. and Mdletshe, L., 2024. Innovations through Insurgent Citizenship for Integrated Human Settlements in South Africa: A Popular Space. In *Transformative Innovation for Sustainable Human Settlements* (pp. 109-122). Routledge.

[142] Turok, I. (2014). South Africa's tortured urbanisation and the complications of reconstruction. In *Urban growth in emerging economies* (pp. 143-190). Routledge.

[143] Turok, I. (2014). The urbanization-development nexus in the BRICS. In *The Routledge handbook on cities of the global south* (pp. 122-138). Routledge.

[144] Turok, I. (2016). Getting urbanization to work in Africa: the role of the urban land-infrastructure-finance nexus. *Area development and policy*, *1*(1), 30-47.

[145] Turok, I. (2020). Density, informality and the urban premium. In *Densifying the City?* (pp. 40-51). Edward Elgar Publishing.

[146] Tyekela, Y.N., (2018). *Mitigation of displacement through rent control policy* (Doctoral dissertation, University of the Witwatersrand, Faculty of Engineering and the Built Environment).

[147] Umana, A.U., Garba, B.M.P., Ologun, A., Olu, J.S. and Umar, M.O., (2024). The role of government policies in promoting social housing: A comparative research between Nigeria and other developing nations. *World Journal of Advanced Research and Reviews*, 23(03), pp.371-382.

[148] van Pinxteren, M., Mbokazi, N., Murphy, K., Mair, F. S., May, C., and Levitt, N. (2023). The impact of persistent precarity on patients' capacity to manage their treatment burden: A comparative qualitative research between urban and rural patients with multimorbidity in South Africa. *Frontiers in medicine*, *10*, 1061190.

[149] Vejby, C.E., (2015). *The remaking of inner city Johannesburg and the right to the city: a case research of the Maboneng Precinct*. University of California, Santa Barbara.

[150] Vogelsang-Coombs, V., (2012). Toward the civil city council. *State and Local Government Review*, *44*(3), pp.208-215.

[151] Watson, V. (2009). 'The planned city sweeps the poor away…': Urban planning and 21st century urbanisation. *Progress in planning*, *72*(3), 151-193.

[152] Winkler, T. (2022). Prolonging the global age of gentrification: Johannesburg's regeneration policies. In *The Planetary Gentrification Reader* (pp. 187-204). Routledge

APPENDIX 1

Urban transformation through the triple bottom line and gentrification mitigation: A study of Johannesburg's social housing paradigm

This questionnaire forms a very important part of the second round in the Delphi study being undertaken for my PhD research. This will ensure expert opinion extraction with the establishment of consensus on critical factors that affect the development of social housing in Johannesburg. By this process, the research aspires to refine the results of the first round to arrive at actionable strategies meeting the requirements for both academia and practice.

The questions in the below are intended to ascertain information on several dimensions related to social housing: historical milestones, current challenges, and innovative approaches. Your inputs as an expert will be of great value to achieve the research objectives and reach a critical understanding of social housing dynamics.

Please indicate your level of agreement with the statements in what follows, by choosing an appropriate response on a 5-point scale where:

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

Historical analysis

* Indicates required question

*

Demographics

1. Please select the category that your occupation belongs to *

Mark only one oval.

- Contractor
- NHBRC official
- City official
- Bank employee

*

2. The post-apartheid Reconstruction and Development Programme (RDP) has significantly shaped social housing in Johannesburg.

Mark only one oval.

	1	2	3	4	5	
Stro	◯	◯	◯	◯	◯	Strongly Agree

3. Policy changes since 1994 have improved inclusivity and rectified historical inequalities in social housing.

Mark only one oval.

	1	2	3	4	5	
Stro	◯	◯	◯	◯	◯	Strongly Agree

4. Economic factors, such as urban migration and political shifts, are key drivers in shaping the trajectory of social housing. *

Mark only one oval.

	1	2	3	4	5	
Stro	◯	◯	◯	◯	◯	Strongly Agree

5. The introduction of the Breaking New Ground policy marked a p votal shift in Johannesburg's social housing strategy.

Mark only one oval.

	1	2	3	4	5	
Stro	◯	◯	◯	◯	◯	Strongly Agree

*

Gentrification dynamics

6. Gentrification has significantly impacted housing affordability and availability in Johannesburg. *

Mark only one oval.

	1	2	3	4	5	
Stro	◯	◯	◯	◯	◯	Strongly Agree

7. Social housing initiatives in areas like Hillbrow and Maboneng have effectively mitigated gentrification pressures.

Mark only one oval.

	1	2	3	4	5	
Stro	◯	◯	◯	◯	◯	Strongly Agree

8. Government zoning/land policies protect low-income residents. *

Mark only one oval.

	1	2	3	4	5	
Stro	◯	◯	◯	◯	◯	Strongly Agree

*

9. Policy has prioritized long-term integration over short-term shelter. *

Mark only one oval.

	1	2	3	4	5	
Stro	◯	◯	◯	◯	◯	Strongly Agree

10. Government policies play a crucial role in balancing gentrification effects and preserving affordable housing.

Mark only one oval.

	1	2	3	4	5	
Stro	◯	◯	◯	◯	◯	Strongly Agree

11. Rising property values in traditionally low-income areas have disproportionately displaced vulnerable populations. *

Mark only one oval.

	1	2	3	4	5	
Stro	◯	◯	◯	◯	◯	Strongly Agree

Triple Bottom Line (TBL) Evaluation

12. Social housing projects align well with promoting social inclus vity and reducing inequality.

Mark only one oval.

	1	2	3	4	5	
Stro	◯	◯	◯	◯	◯	Strongly Agree

13. Current projects demonstrate limited economic sustainability without ongoing subsidies. *

Mark only one oval.

	1	2	3	4	5	
Stro	◯	◯	◯	◯	◯	Strongly Agree

14. Environmental initiatives, such as green building practices, are underutilized in social housing developments. * *

Mark only one oval.

	1	2	3	4	5	
Stro	◯	◯	◯	◯	◯	Strongly Agree

15. A stronger emphasis on the TBL framework (economic, social, environmental) would enhance project outcomes in Johannesburg. *

Mark only one oval.

	1	2	3	4	5	
Stro	◯	◯	◯	◯	◯	Strongly Agree

16. Johannesburg's centralized approach to social housing could benefit from adopting more decentralized, community-driven models.

*

Mark only one oval.

	1	2	3	4	5	
Stro	◯	◯	◯	◯	◯	Strongly Agree

17. International case studies like Vienna's housing model provide valuable lessons in integrating long-term affordability with urban planning. *

Mark only one oval.

	1	2	3	4	5	
Stro	◯	◯	◯	◯	◯	Strongly Agree

18. Mixed-income developments from global examples could improve social cohesion and economic viability in Johannesburg.

Mark only one oval.

	1	2	3	4	5	
Stro	◯	◯	◯	◯	◯	Strongly Agree

19. Johannesburg's social housing should prioritize global trends ike climate resilience and integration of green spaces.

Mark only one oval.

	1	2	3	4	5	
Stro	◯	◯	◯	◯	◯	Strongly Agree