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## **MIXED HOUSING DEVELOPMENT, INCLUSIVITY, AND URBAN SUSTAINABILITY NEXUS IN THE CITIES OF THE GLOBAL SOUTH: A SYSTEMATIC BIBLIOMETRIC REVIEW**

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### **ABSTRACT**

Faced with significant challenges, the creation of urban environments in the Global South that foster socio-economic development and upward mobility, access to economic opportunities, efficient use of scarce resources, and social cohesion is fundamental in achieving global and regional sustainability objectives. The South African urban context, in need of significant spatial transformation, mixed housing development, and the elements inherent to its inclusivity, has been identified as an instrument to stimulate social, economic, and environmental sustainability in a divided and fragmented environment. These developments are characterised by heterogeneous housing typologies, medium-to high-density residential layouts, provision of public amenities, and unique neighbourhood designs. In addition to potential challenges related to mixed use development, there is also uncertainty regarding the ability of said developments to foster broad urban sustainability. Accordingly, this research investigates the interface between mixed housing development, inclusivity, and urban sustainability, with the objective to determine their relationship and the extent to which this has been studied in the developing country context. The method used to achieve the objectives of the research is a systematic bibliometric review of existing publications on mixed housing development. Findings indicate that there is limited research on the direct link between mixed housing development, urban sustainability, and inclusivity, especially in the context of the Global South. In addition, existing mixed housing development research has a transdisciplinary character with various research clusters, and that research on related themes have gained prominence in recent years. The findings motivate further study of the relationship between the mentioned themes in the South African, and by extension, developing country context, and that broad policy perspectives ought to be considered in future research initiatives.

**KEY WORDS** Mixed housing development, inclusivity, urban sustainability, Global South, systematic bibliometric review

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## 1. INTRODUCTION

Research regarding urban sustainability is of increasing global importance in the face of challenges relating to globalisation, environmental degradation, and urbanisation (Shen et al., 2012). Cities in developing countries are faced with significant population growth and the built environment tasked with “[addressing the] symbiosis between human activity and the environment” (Childers et al., 2014:321) whilst being challenged by inefficient infrastructure, urban sprawl, unsustainable resource utilisation, exorbitant land cover change, and a lack of basic service delivery. Responses to the challenges of urbanisation in the cities of the developing world will determine whether global urban sustainability objectives are attained, manifesting through “social inclusion, economic well-being and environmental quality within cities, while minimizing negative external impacts without passing the burdens into the future” (Nagendra et al., 2018:341). Accordingly, appropriate local interventions in the built environment and human settlements are central to fostering urban sustainability (Broersma & Fremouw, 2015). This is evident in the objectives inherent to the New Urban Agenda and the Sustainable Development Goals, with the latter emphasising the need to “make cities and human settlements inclusive, safe, resilient and sustainable” (United Nations, 2021). Inclusive cities enable equal access to socio-economic opportunities in a secure environment, including housing and employment access, ample public amenities, open spaces, adequate service delivery, as well as heightened mobility and access (Feitosa et al., 2010; Titz & Chiotha, 2019).

In South Africa, urban environments are characterised by significant informality, fragmentation, continued urbanisation, and spatial divisions manifesting as an enduring legacy of apartheid spatial planning (Abrahams & Everatt, 2019; Sobantu et al., 2019). In this context, mixed housing development is seen as an instrument for urban inclusivity, which is a core theme in housing policy (COJ, 2018; DHS, 2021). Mixed housing development seeks to provide access to

housing, social facilities and interaction, and improved access to economic nodes and opportunities – constituting the basis of urban inclusivity. As significant policy capital have been invested in mixed housing development, it is of upmost importance that the targeted objectives of fostering inclusivity and urban sustainability in a fragmented spatial milieu is achieved by related interventions. However, there is some uncertainty regarding the actual effect of mixed housing development on urban sustainability objectives, whether it may be social, economic, or environmental. Accordingly, this research investigates the interface between mixed housing development, inclusivity, and urban sustainability. The research is guided by two objectives, including (i) to determine the relationship between mixed housing development, inclusivity, and urban sustainability; and (ii) the extent to which this relationship has been studied in the developing country context. The method used to achieve the objectives of the research is a systematic bibliometric review of existing publications on mixed housing development (see section 3). The primary aim is to determine the status quo of existing research on mixed housing development, inclusivity, and sustainability, and to identify whether there is rationale for further investigation of this theme within a developing country context.

## 2. CONCEPTUAL FRAMEWORK

The primary themes that constitute the conceptual framework of this research include urban sustainability, inclusivity, and mixed housing development. The increased focus on creating sustainable urban environments is founded in the paradigm of fostering sustainable development (UN, 2021). Sustainability, particularly of the urban variety, is based on the interaction of various concepts, including economics, politics, ecology, and culture (James, 2015). More specifically, for the purposes of this research, sustainability of urban areas is determined by various their ability to offer resilience and adaptability to external disturbances (such as economic or environmental shocks); access to adequate housing, basic services, and transport; urban growth that considers

the needs of the environment; the undertaking of disaster risk management; efficient waste management; clean air; and ample public spaces. These also form the basis of measuring progress with Sustainable Development Goal (SDG) 11 (Stats SA, 2019).

Inclusivity forms a core part of urban sustainability (World Bank, 2021). On a spatial front, which is of particular importance to South African cities, inclusive urban spaces are planned and developed to ensure all are close to the economic opportunities and transport systems to eliminate the exclusion of the lower-income population and provide them with more opportunities. That is connected to economic inclusivity or inclusion, which refers to the equality of opportunity for all members of society to participate in the economic life of their country or city (Bettcher & Mihaylova, 2015). Urban environments should foster economic inclusion that unlocks the potential of more and more individuals as well as that of communities, empowering them to improve their circumstances and welfare. Social inclusion and cultivating a sense of belonging have been identified as important components of social sustainability (Kohon, 2018). Relevant themes here include equity, social justice, democratic government, social inclusion, social capital, and quality of life (Slade & Carter, 2017).

Broadly speaking, mixed housing developments are characterised by heterogeneous housing typologies, medium- to high-density residential layouts, and provision of public amenities, but these differ with context (Mnisi & Karam, 2020). Also referred to as mixed-income housing or integrated housing, four dimensions could be used to distinguish between approaches to mixed housing development (Vale & Shamsuddin, 2017). These are: (a) allocation, whereby the proportion and range of incomes included in projects are taken into consideration; (b) proximity, referring to the spatial scale at which the mixing of income is undertaken; (c) tenure, whereby the proportion of housing units to be rented out is considered in comparison to the proportion of housing units to be sold; and (d) duration, referring to the amount of time projects remain mixed-income

based on funding restrictions. These dimensions are also referred to as socioeconomic mix, spatial mix, financial mix, and temporal mix, respectively.

There is a significant need for spatial transformation in the South African context, but also in the broader developing country context to equip urban areas for current and future challenges (Nathaniel et al., 2021). In this context, mixed housing development is propagated as an instrument to foster spatial and social inclusivity, through bringing together diverse communities and removing physical barriers to employment. However, there are potential challenges related to mixed housing developments, including access to affordable social amenities, education, healthcare, and economic opportunities for lower income households (SAPOA, 2018). These challenges links to the objectives of this research, which are to determine the link between mixed housing development, inclusivity, and urban sustainability, with the potential to highlight both the positive and negative effects of this intervention within unique policy and implementation contexts, with specific reference to developing countries.

### 3. METHODOLOGY

The data collection and analysis method utilised in this study is a systematic bibliometric review. This represents a quantitative, replicable review of related literature to triangulate evidence from primary sources in line with research objectives, that is, determining the relationship between mixed housing development, inclusivity, and urban sustainability; and the extent to which this relationship has been studied in the developing country context. In this process, the SCOPUS literature database was utilised, from which relevant data was exported of publications that include the keyword “mixed housing development” (and related phrasing) in the title, abstract, or identified keywords. These publications and their data formed the foundation of further analysis that include determining the occurrences and linkages within the *mixed housing development* body of work to themes relating to urban sustainability and inclusivity. VOSviewer (v1.6.16) software is utilised to analyse

the data and visualise the core findings of the study (Van Eck & Waltman, 2020). This review is done to explore the rationale for further research and to investigate the current status and identifiable linkages in research on the identified themes.

### 4. FINDINGS AND DISCUSSION

The findings of the systematic bibliometric review are discussed in this section. Table 1 indicates the various keywords and their number of occurrences in publications related to mixed housing development, in addition to the total link strength variable, which indicates the depth of the linkages between keywords (Van Eck & Waltman, 2020).

**Table 1. Keywords, occurrences, and linkages in mixed housing development research**

Keyword	Occurrences	Total link strength
Housing	49	159
Housing policy	16	46
Mental disease	6	46
Neighbourhood	8	45
Psychology	5	45
Organization and management	5	44
Social housing	15	42
Public housing	6	38
Homelessness	6	33
Disability	10	32
Socioeconomic factors	5	32
Affordable housing	12	28
Integrated approach	8	28
Urban housing	8	28
Integration	9	27
Urban planning	6	25
Economics	5	23
Residential development	9	21
Accessibility	6	20
Urban area	5	20
Housing conditions	5	18
Housing provision	6	15
Housing development	5	12
Inclusive housing	5	12
Sustainability	6	12
Housing market	5	6

As evident in the table, prominent keywords in mixed housing development research include “housing policy”, “neighbourhood”, “psychology”, “organization and management”, “social housing”, “homelessness”, and “affordable housing”. However, themes relating to inclusivity and sustainability, indicated in bold in the table, have relatively limited occurrence in publications on mixed housing development and linkage with related keywords.

A broader network visualization of the keywords associated with mixed housing development research indicates linkages between the various keywords, while also categorizing mixed housing development research into four broad clusters, including social themes (keywords that include “disability”, “psychology”, “accessibility”); economic themes (“organization and management”, “homelessness”, “urban area”); housing policy (“social housing”, “housing conditions”, “urban planning”, “housing market”); and housing development (“residential development”, “housing development”, “affordable housing”). These constitute the research clusters emerging from mixed housing development publications. Within this body of work, “sustainability” has primary linkages to the housing policy and housing development clusters, while “inclusive housing” is linked to socio-economic themes. It is also evident that there is limited and mostly indirect linkages between “sustainability” and “inclusive housing”. “Sustainability” themes have linkages with various sub-themes, including “accessibility”; “public housing”; “housing conditions”; and “housing policy”. All four research clusters are included in these linkages, including social, economic, housing policy, and housing development. In terms of inclusivity, the “inclusive housing” themes is linked to other keywords that include “accessibility”; “disability”; and “psychology”. There are considerably less linkages compared to “sustainability”, and less with housing related clusters, including housing policy and housing development. Inclusivity themes are linked with social and economic research clusters.

Through overlay visualization of all the keywords, which indicates those that have gained prominence over time within the context of mixed housing development, it is evident that “sustainability” and “inclusive housing” has gained more prominence recently – mostly from 2014/15 onward. In addition, it is clear that most of the themes in the housing policy cluster have grown in prominence recently with reference to research relating to mixed housing development. This preliminary finding may be connected to the implementation and growing significance of the SDGs; in this context SDG11 and the interlinkages between housing policy, mixed housing developments, inclusivity, and sustainability objectives. Investigating the occurrence and linkages in the spatial contexts of mixed housing development research, it is evident that that research has focused on the developed country context. The most prominent keywords relating to spatial context of research include “Europe”, “Canada”, “France”, “Australia”, “United States”, and the “United Kingdom”. There has been limited research in the Global South context looking at mixed housing development, with some focus on “South Africa”, “India”, and the broad “developing country” or “developing world”.

It is thus clear that research on mixed housing development, sustainability, and inclusive housing, among other themes, have gained prominence in recent years, within the broader housing policy research cluster. There are limited occurrence and linkages of sustainability and inclusivity themes with mixed housing development research. However, where they are visible, these themes have some linkages with other keywords and themes under the mixed housing development umbrella. While linkages between sustainability and inclusivity is limited, “sustainability” has links to all four research clusters, with prominent themes that include “accessibility”; “affordable housing”; “integration”; “integrated approach”. “Inclusive housing” has linkages with the socio-economic clusters, including key words such as “disability”, “psychology”, and “accessibility”. An important finding

is the limited research done in context of the Global South on matters relating to mixed housing development.

## 6. CONCLUSIONS

Based on the data analysis and bibliometric review, certain conclusions can be made. Firstly, there is limited research on the direct link between mixed housing development, urban sustainability, and inclusivity. Secondly, limited amount of research has been done on mixed housing development in the context of Global South. These two conclusions support the rationale for the research and motivates further study of the relationship between the mentioned themes in the South African, and by extension, developing country context. Thirdly, the transdisciplinary nature of existing mixed housing development research is evident when identifying the different research clusters. This is also relevant to the relatively diverse linkages sustainability has with other themes, albeit not specifically pronounced. This indicates the broad policy perspectives that ought to be considered in future research initiatives and measuring the potentially broad outcomes. Lastly, the research cluster of “housing policy” relating to mixed housing development is gaining prominence, including themes of sustainability and inclusive cities in recent years. This emphasizes the growing importance of these research themes in the context of the SDGs and their implementation, and the broader challenges facing countries and urban environments.

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