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Federal University of Technology
Minna, Niger State, Nigeria.

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Editors-in-Chief

Assoc. Prof. Dr Ogunbode, Ezekiel Babatunde
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(SETIC 2024)**

22nd – 24th October, 2024

**Federal University of Technology, Minna,
Niger State, Nigeria**

EDITORS IN CHIEF

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PREFACE

The School of Environmental Technology International Conference (SETIC 2024), organized by the School of Environmental Technology, Federal University of Technology Minna, Nigeria, is a prestigious platform that brings together experts from diverse fields to exchange knowledge and drive innovation. This year, the conference is held in collaboration with notable institutions, including the School of Architecture and Design, Lovely Professional University, New Delhi, India; Abubakar Tafawa Balewa University (ATBU), Bauchi State, Nigeria; the Architectural Engineering Department, Najran University, Najran, Saudi Arabia; Perch Inc Development Consultancy Services, Zimbabwe; Faculty of Health Sciences, Graduate Education Institute, Istanbul Gelişim University, Istanbul, Turkey; Robotics & Additive Technologies Innovation Research Cluster, Transport & Communication Institute, Riga, Latvia; Architectural Engineering Department, College of Engineering, University of Hail, Hail, Saudi Arabia; New Gate University, Minna, Nigeria; and the University of Law Business School, Birmingham, United Kingdom, to mention a few.

This year's theme, "Global Economic Revolution and the Resilience of the Built Environment in an Emerging World," seeks to explore the dynamic relationship between global economic shifts and the adaptability of the built environment. The theme emphasizes the necessity for resilience, sustainability, and innovation in the face of unprecedented challenges and evolving economic landscapes. The sub-themes of the conference delve into crucial aspects such as sustainable design, technological integration, disaster management, and the role of policy in shaping future infrastructures.

The response to this year's conference has been both enthusiastic and far-reaching, with participants from a wide range of countries, including Latvia, India, Turkey, United Kingdom, Malaysia, Saudi Arabia, Zimbabwe, South Africa, and beyond. The hybrid nature of the event offering both virtual and physical participation has enabled an even broader exchange of ideas and perspectives. The conference serves as a vibrant platform for professionals, academics, and researchers to engage with cutting-edge developments in the built environment and related fields, fostering collaborations that will shape the future of global practice.

A wide range of papers, spanning science, engineering, and the social sciences, have been presented at this year's event, highlighting the interdisciplinary nature of challenges we face and the solutions to these challenges.

We would like to express our deep gratitude to the SETIC 2024 Conference Organizing Committee (COC) for their unwavering dedication and hard work in making this conference a resounding success. We are confident that this event will inspire all participants and leave a lasting impact on the field

ACKNOWLEDGEMENT

The success of SETIC 2024 is built upon the foundation laid by the previous editions of the School of Environmental Technology International Conference held in 2016, 2018, 2020, and 2022. We owe a great deal to the unwavering support and commitment of many, particularly the Vice-Chancellor of the Federal University of Technology, Minna, and the Dean of the School of Environmental Technology, alongside Dr Dodo Y. A., Dr Ajayi O. G., Dr Moveh S., Dr Kayode I. Adenuga and other esteemed colleagues whose efforts has been instrumental to this success.

It is my privilege, on behalf of the Conference Organizing Committee (COC), to extend a big thank you to all that attended the 5th Biennial SETIC, held between October 22nd to 24th, 2024. We are grateful for the opportunity to witness this grand event, now enhanced by the hybrid format, accommodating both physical and virtual participation—an innovation born from the challenges of the global pandemic.

This year's conference had serves as an international platform where scholars, professionals, and practitioners in the built environment and allied fields converge to tackle critical issues around the theme "Global Economic Revolution and the Resilience of the Built Environment in an Emerging World." The conference offered an opportunity to share best practices, theories, and concepts, fostering meaningful discussions that can shape future research and industry practices.

We were honored to have our distinguished keynote and guest speakers:

Prof. Kamuzhanje Joseph, Perch Inc. Development Consultancy Services, Zimbabwe.

Prof. Bldr. Sani Usman Kunya, Acting Vice Chancellor, Abubakar Tafawa Balewa University, Bauchi State, Nigeria.

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Dr. Ahmed Osman Ibrahim, Associate Prof. Architectural Engineering Dept., College of Engineering, University of Hail, Hail, Saudi Arabia.

Additionally, we extend our appreciation to the esteemed panelists that participated in the Round Table Talk on "Role of the Built Environment in Promoting Security Food Security (The Role of Building Integrated Agriculture [BIA]) in persons of Assoc. Prof. Dr. Habiba Atta (Nigeria), Assoc. Prof. Dr. Samuel Moveh (Latvia), LAr. Ts. Dr. Nurzuliza B. Jamirsah (Malaysia), Arch. Abdulmalik Aminu (Nigeria) and our amiable moderator, Asst Prof. Yakubu Aminu Dodo. The session with them on innovative architectural and urban design solutions for food security was insightful as it addresses pressing needs in the built environment.

With over 150 papers covering the twelve subthemes of the conference, SETIC 2024 was engaging and enriching experience. Through parallel sessions and poster presentations, participants had the chance to delve into key issues surrounding Global Economic Revolution and the Resilience of the Built Environment in an Emerging World. All attendees were believed to have made use of most of the discussions, collaborations, and networking opportunities available to them.

In closing, I would like to express my sincere gratitude to the Dean of the School of Environmental Technology, the Conference Organizing Committee (COC), and the entire School for their trust and support. To our reviewers and committee members, thank you for your dedication and hard work in making this event possible.

Wishing everyone the best and memorable experience as SETIC 2024 lives on in our heart.

Thank you, and God bless you all.

Assoc. Prof. Ogunbode E. B.
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This is to confirm that all papers included in the SETIC 2024 Conference Proceedings have undergone a rigorous peer review process. This process entailed an initial abstract review, followed by a blind review of the full papers by at least two independent referees. The reviewers' feedback was then communicated to the authors for revisions, after which the revised papers were thoroughly evaluated by the Scientific Committee to ensure they meet the highest standards of scholarly quality.

In accordance with the policy of the School of Environmental Technology International Conference (SETIC), only papers that have successfully passed this comprehensive review process and met the requisite criteria for academic integrity are accepted for publication in the conference proceedings. The final decision for publication is based on the recommendations of both the Reviewers and the Scientific Committee.

Selected papers from the conference proceedings will also be considered for publication in reputable academic journals.

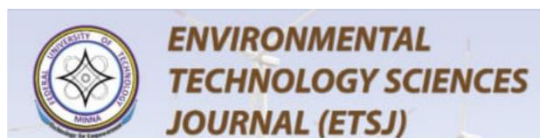
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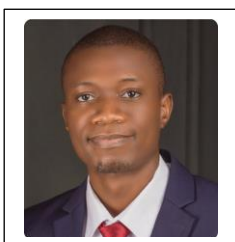
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Impact of Residential Mobility on Commercial Real Estate Investment Decisions in Minna, Niger State Nigeria

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Abstract

This research explores the influence of residential mobility on commercial real estate investment decisions in Minna, Niger State, Nigeria. Residential mobility, reflecting the frequency and patterns of household relocations, significantly affects the dynamics of urban environments and, consequently, commercial real estate markets. The study employed a qualitative approach with selection of ten stakeholders in the real estate development and property market in Minna. Data were collected via semi-structured interview centred on four research questions towards achieving the research objective. The collected data were analysed with the aid of thematic content analysis. The findings indicate that high residential mobility in certain neighbourhoods like Bosso, Fadikpe and Maitumbi correlates with increased commercial real estate activity, driven by the demand for retail shops, office, and service-oriented spaces catering to a transient population. Conversely, areas with low residential mobility like Barikin Sale and Sauka Kahuta exhibits slower commercial development, often due to a stable but limited consumer base. Stability and risk management, opportunity and growth potential, and demographic influence on investment decisions are the elements of residential mobility indicating investment in commercial property development in the study area. The study concludes that decision to invest in commercial real estate is indeed influenced by residential mobility; though in relation to other outlying factors like finances, demand for commercial properties and economic prospects among other. Stakeholders and investors in the commercial real estate are recommended to always conduct in-depth market research, concentrate on stable neighbourhoods, make use of demographic information, keep an eye on urban and economic growth, and interact with local stakeholders in a bid to make more informed and strategic decisions that align with both global trends and local realities.

Keywords: Commercial Properties, Demographic Influence, Minna, Real Estate Investment, Residential Mobility

1. Introduction

Residential mobility significantly influences the dynamics of commercial real estate markets, particularly through its impact on demand for retail, offices, and industrial properties (Barreca *et al.*, 2020; Bond, 2023). When households relocate, they often alter their patterns of consumption and business activity, thereby affecting the spatial and economic landscape of commercial real estate. Mobility away from a certain location reduces the demand for commercial property in such area owing to decline in population density while increment is experienced in the demand for commercial properties in the destination location (Harrison *et al.*, 2021). For instance, higher residential mobility in urban areas tends to increase the demand for retail spaces and service-oriented businesses near residential hubs, driven by changing consumer bases and shopping behaviours (Kulu *et al.*, 2021; Garcia-Gabilondo *et al.*, 2024). Conversely, in areas with lower mobility rates, commercial real estate may experience stagnation or reduced demand, impacting property values and investment opportunities (Tanrıvermiş, 2020). This interplay between residential mobility and commercial real estate investment is crucial for developers, investors, and urban planners seeking to optimize property portfolios and align development projects with demographic trends (Stein, 2019). Property managers, developers, investors and urban planner are all aware of the critical relevance of residential mobility on commercial real estate as it affects demand forecasting by managers; strategic land allocation alongside urban development plan by urban planners. This generally influences market growth, return on investments (RoI) and overall sustainable development of basic infrastructure.

Residential mobility not only affects economic factors but also shapes social dynamics that influence commercial real estate trends (Olajide and Lawanson, 2017; Ajayi *et al.*, 2015). The movement of households often leads to

demographic shifts that can alter the composition and needs of local markets (de Bruin *et al.*, 2021). An influx of young professionals into an area may boost demand for upscale retail outlets, dining establishments, and entertainment venues, thereby transforming the commercial real estate landscape (Ibrahim and Hassanain, 2022). However, the migration of families with children may increase the demand for educational facilities, healthcare services, and family-oriented retail spaces (Philips, 2020; Abdulai *et al.*, 2023). Understanding these social dynamics is essential for stakeholders in the commercial real estate sector to anticipate market changes, tailor their investment strategies, and enhance the appeal of their properties to meet the evolving needs of the community.

The relationship between residential mobility and commercial real estate investment has significant implications for policy and urban planning (Barreca *et al.*, 2020). Areas experiencing high rates of residential turnover may require targeted planning interventions to support sustainable commercial development (Philips *et al.*, 2021). For instance, zoning laws, infrastructure development, and incentives for businesses can be strategically designed to attract and retain commercial enterprises in areas with high residential mobility (Bartik, 2020; Ratcliffe *et al.*, 2021; Rosenthal *et al.*, 2022). Additionally, understanding the patterns of residential movement can help policymakers identify emerging commercial hotspots, allocate resources more effectively, and foster environments conducive to economic growth (Barberis and Angelucci, 2022). This approach ensures that commercial real estate developments are not only responsive to current market demands but also strategically positioned to capitalise on future demographic trends, thereby enhancing the overall economic vitality of urban and suburban regions.

Examining the impact of residential mobility on commercial real estate investment unveils critical insights into market opportunities and risks. High residential mobility can create both challenges and opportunities for investors (DeLuca and Jang-Trettien, 2020). Areas with frequent residential turnover may present opportunities for short-term retail leasing or the development of mixed-use properties that cater to transient populations (Bond, 2023). However, such areas may also pose risks, including tenant turnover and fluctuating demand for commercial spaces. Meanwhile, stable residential communities with lower mobility rates might offer long-term investment security and steady rental income but may require more strategic planning to enhance commercial appeal (Kulu *et al.*, 2021).

The relationship between residential mobility and commercial real estate investment decisions has been well-documented in urban studies and real estate research (Talen and Park, 2022; Sakketa, 2023; Wang *et al.*, 2024). Studies indicate that high residential mobility can significantly influence the demand for commercial properties by altering consumer behaviour and economic activity within neighbourhoods. For instance, Talen and Park (2022) demonstrate that residential turnover can lead to fluctuations in the demand for retail spaces, as new residents bring different consumption preferences and purchasing power. This dynamic creates both opportunities and challenges for investors, who must adapt their strategies to the shifting needs of the population. Additionally, Philips (2020) highlight that areas with high residential mobility may experience rapid commercial development as businesses seek to capitalize on emerging consumer bases, but also face the risk of increased vacancy rates and market instability if mobility patterns change abruptly. These studies underscore the importance of understanding residential mobility patterns to make informed investment decisions and optimize commercial real estate portfolios.

In the context of developing countries, such as Nigeria, the impact of residential mobility on commercial real estate investment is influenced by unique socio-economic factors. A study by Sakketa (2023) suggests that in rapidly urbanising regions, such as those in Sub-Saharan Africa, residential mobility can drive significant changes in commercial real estate markets. High mobility often correlates with increased demand for commercial spaces in newly developed or expanding areas, but it also presents challenges such as infrastructure deficits and economic instability that can affect investment outcomes (Blumenberg *et al.*, 2023; Wang *et al.*, 2024). Similarly, Korah (2020) points out that in cities like Accra, Ghana, residential mobility contributes to uneven commercial development, with some areas flourishing while others lag behind due to varying rates of investment and infrastructure development. Understanding these localised effects is crucial for making strategic commercial real estate investments decision in Minna, Niger State, Nigeria, where similar patterns of mobility and market fluctuations may influence investment decisions and economic development.

The relationship between residential mobility and commercial real estate investment in Minna, Nigeria, presents a complex and multifaceted challenge. As households move, their consumption patterns and service needs shift; Mourouzi-Sivitanidou (2020) directly influencing the demand for various types of commercial real estate, including retail shop spaces, office buildings, and industrial properties (Samson and Olaolu, 2023). High residential mobility can create dynamic and rapidly changing commercial environments, requiring investors and developers to adapt swiftly to new market conditions. Conversely, low mobility can lead to stagnation and underutilisation of commercial properties, negatively impacting property values and economic development (Haase *et al.*, 2021). Understanding these dynamics is crucial for stakeholders aiming to optimise their investments and align commercial developments with the evolving demographic landscape of Minna. Despite its significance, the specific

impacts of residential mobility on commercial real estate in this context remain underexplored, highlighting a critical gap in current urban development research.

Furthermore, the socio-economic implications of residential mobility on commercial real estate investment in urban areas remain profound by altering demand, property values, and market opportunities. High mobility rates can lead to increased commercial activity in newly populated areas but may also result in abandoned or underused commercial spaces in areas experiencing out-migration (Turok, 2015; Wolff *et al.*, 2017). This not only affects the economic viability of commercial investments but also has broader implications on urban planning and community stability. For instance, frequent residential turnover can disrupt local economies, reduce consumer loyalty to local businesses, and challenge the sustainability of commercial ventures. Conversely, stable residential areas might attract long-term investments but could face challenges in spurring new commercial development without significant population growth (Haase *et al.*, 2021; Ojo *et al.*, 2022; Kanda *et al.*, 2024). Addressing these issues requires a nuanced understanding of how demographic changes drive commercial real estate trends, necessitating comprehensive research to inform effective policy and investment strategies that foster sustainable economic growth and urban development in Minna.

The purpose of this study is to examine the impact of residential mobility on commercial real estate investment in Minna, Nigeria with a view to proffering practicable measures towards managing the negative externalities to property managers, investors and urban planners. Through exploring how changes in household movement patterns influence the demand for various types of commercial properties, such as retail shops, office spaces, and service facilities, this research aims at providing insights on market dynamics and investment opportunities in Minna. Therefore, to achieve the stated aim, the following objectives are adopted to investigate how residential mobility affects stability, risk management, growth opportunities, and demographic factors in commercial real estate investment decisions in Minna, Niger State. The findings will help investors, developers, and urban planners understand how demographic shifts affect commercial real estate trends, enabling them to make informed decisions that align with evolving residential patterns and contribute to sustainable economic development in the city.

2. Methodology

In order to investigate how residential migration affects commercial real estate investment decisions in Minna, Nigeria, this study adopted a qualitative research methodology. The qualitative approach was selected to offer in-depth comprehension and insights through thorough explanations and interpretations. The research is conducted in Minna, the capital of Niger State, Nigeria. Minna is a rapidly growing metropolitan area with high residential mobility and a diverse array of commercial real estate operations. The city makes it feasible to look at the patterns of residential migration and how it impacts commercial real estate investments. To choose important players in Minna's real estate market, a purposive sample technique is used. Along with real estate agents, the stakeholders in real estate development, investing, and property management are as follows. In order to guarantee a varied variety of opinions and experiences, a total of 10 to 15 participants are targeted, and seven stakeholders participated in the scheduled interview for data collection. A semi-structured interview guide was developed based on the research questions and thematic areas identified. Key questions include: an explanation of how residential mobility patterns in Minna impact commercial real estate investment decisions; residential mobility factors taken into consideration when assessing potential commercial real estate investments; and the effects of variation in residential area demographic profiles on commercial real estate investments. The guide includes open-ended questions to allow participants to provide detailed responses and share their experiences and insights. Interviews took place remotely and in person, based on the preferences and availability of the participants. With the participants' permission, each 30 to 45 minute interview is audio recorded for precise transcription and analysis. To augment the information from the interviews, relevant documents are evaluated, including demographic studies, real estate market statistics, and urban development plans. These records include background data and aid in cross-referencing the interviewees' conclusions. To provide textual data for analysis, verbatim transcriptions of interview recordings are made. According to Braun and Clarke (2006), the interview material is analysed using thematic analysis, which includes familiarisation, the creation of preliminary codes, the search for themes, a review of topics, the definition and naming of themes, and finally analysis and discussion. After that, the recurrent arguments are categorised and integrated. The identities of the interviewees are thus pseudomised with R1, R2....Rn indicating first respondents to the last one.

3. Results and Findings

The interview responses to the research questions (RQ) were transcribed and further presented below under three distinct themes and recurring pattern identified as: Stability and Risk Management; Opportunity and Growth

Potential as well as Demographic Influence on Investment Decisions all touching on the research questions raised towards achieving the research aim of identifying the impacts of residential mobility on commercial real estate investment decisions in Minna.

3.1 First Theme Identified: Stability and Risk Management

This theme emphasises risk management and long-term profitability considerations while focusing on the connection between residential mobility and investment stability. R2 was of the opinion that "...areas with low residential mobility (Shango, Barikin Sale and Sauka Kahuta) are more attractive in respect to affordability as they indicate stable, long-term customers serving as tenants for commercial properties." R3 is thus of the opinion that; "...high residential mobility usually indicates, fluctuating populations, which can be risky for long-term investments.... investors prefer areas with stable populations (Bosso, Fadikpe and Maitumbi)." Similarly, R6 submitted that; "...investors tend to avoid areas with high residential mobility because it can lead to higher vacancy rates and unstable rental income." However, while responding to questions one, R1's opinion differs a bit by concluding that; "...turnover rate of residents is critical because it affects the stability of tenant base." Meanwhile, R3 and R7 submitted that; "... real estate investors often pull out of a commercial property investment upon witnessing high residential mobility with no corresponding economic growth, indicating instability." while "... investment in shopping centres and office complexes (commercial properties) is convincing in an area with high residential mobility and declining income levels."

3.2 Second Theme Identified: Opportunity and Growth Potential

With an emphasis on demographic shifts, economic indicators, and the possibility of rising demand, this theme highlights the growth and opportunity that come with residential mobility.

As observed, R1 contended that; "...developers tend to invest more in areas with high residential mobility because these areas often have a demand for services and retail spaces catering to new residents" R4 on the other hand submitted that; "investors look for neighbourhoods with increasing residential mobility as it often signals gentrification and rising property values" while R5 was of the opinion that "....areas with frequent residential moves might need more retail and service outlets, which can be good opportunities for investment in commercial properties to cater for basic human needs...."

However, responding to RQ2; R2 posited that, "....property developers and investors identifies the rationale driving residential mobility, such as job opportunities, which can indicate economic growth to eventually conclude on whether or not to invest in a resulting commercial properties" and R5 observed that "....availability of amenities and services (road, electricity, portable water, security and others) that attract new residents is a significant factor for commercial properties investors."

In responding to RQ4; R1 submitted that ".... areas like Gidan Kwano where influx of young professionals is witnessed;we invested in a mixed-use development that includes co-working spaces (office/shopping complexes) and trendy restaurants" while R2 submitted that; "....developers tend to invest in a suburban retail centre upon identifying significant number of families moving to the area for better schools and other social services." R4 further corroborated the earlier assertions from R1 and R2 by retorting; ".... investment in upscale retail stores is driven and more convincing anytime a neighbourhood experiences gentrification correlating with influx of affluent residents."

3.3 Third Theme Identified: Demographic Influence on Investment Decisions

This theme focuses on the requirements and desires of various population groups, highlighting the impact of how demographic differences connected to home mobility in accordance with certain investment decisions.

R3 in response to RQ2 suggests that; "....demographic changes accompanying residential mobility are important; with younger populations tending to support different types of businesses, thus indicating the need for commercial property investment like block of shops and retail outlets in locations like Bosso and Fadikpe"; R4 added that ".... higher consideration is given to incoming residents income levels, as higher income can support more upscale commercial properties" whereas R6 thought "....change in school district, as families moving in for better schools can indicate a stable and growing population; ...resulting in lower investment in commercial real estate around Bosso in recent times due to the gradual relocation of federal University of technology Minna to permanent site" and R7 submitted that "....proximity to major transportation hubs (Mobil, Kpakungu and other transport hubs) that attract transient populations is something closely monitored and considered in eventual decision to invest in commercial properties"

R1 stated that "...identifying younger demographics prompt investors to focus more on entertainment and dining investments," while R2 countered that "... increased family-focused demographics convince investors and others in the property industry to invest in retail centres with schools and day-care facilities at closer proximity." These responses to RQ3 are primarily captured under this theme. According to R3, "...rising affluence in an area (Fadikpe) leads developers to consider expensive stores and office spaces" is another way that the aforementioned claims are further supported". R4 opined that "...growing increasing numbers of elderly in a location induces investors to consider investing in structures capable of being put on lease for healthcare-related enterprises like pharmacy stores, medical laboratories and others...."

Furthermore, according to R5 and R6, "...unique variation in household demographics often interprets to various commercial needs, which can be a goldmine for mixed-use developments." Meanwhile, R6 stated that "...investors prefer to place their money in co-working spaces and business services after observing a significant trend in the movement of professionals over time." and R7 believes that cultural shifts in regions such as Sauka Kahuta and Barikin Sale can encourage developers and investors to promote specialised markets and specialist retailers. R5 also stated that the expanding senior population drives investments in healthcare services. R6 also stated that investments were being made in short-term residential housing, including student hostels and off-campus apartments, as well as related retail establishments. These statements support each other.

4. Discussion of Findings

The findings from the analysis emphasise the relevance of risk management and long-term profitability in relation to residential mobility and investment stability. Respondents R2 and R3 emphasise that regions with minimal residential mobility, such as Shango and Barikin Sale, have stable, long-term tenants, making them more appealing for commercial real estate investments. This aligns with findings from Philips (2020), which suggest that stable populations reduce vacancy risks and provide consistent rental income. R3 and R6 responded that significant residential mobility can result in shifting populations, greater vacancy rates, and uncertain rental revenue, a concern shared by Barreca *et al.* (2020). R1 takes a nuanced approach, arguing that while turnover rates are dangerous, they can be beneficial if managed effectively, a position reinforced by Harrison *et al.* (2021), who observe that some investors flourish in high-turnover locations by modifying rents often. However, R3 and R7 emphasise that high mobility with no equivalent economic expansion indicates instability, which is consistent with Wang *et al.*'s (2024) research, which found that such conditions discourage long-term investment. Overall, while housing mobility presents both dangers and opportunities, stability regarding population and economic expansion is critical to minimising investment risks and maintaining long-term profitability.

In the same vein, results highlighted how demographic transitions, economic factors, and increased demand related to residential mobility provide growth prospects for commercial property investment. R1 and R4 both emphasise that regions with high household mobility attract investors due to the need for retail and service areas appealing to new inhabitants, which is consistent with previous research findings. For instance, Bartik (2020) found that household movement frequently leads to increased demand for facilities, which draws commercial investment as communities adjust to changing demography. Similarly, R4's suggestion that residential mobility frequently signals gentrification and increasing property prices is supported by studies such as Bond (2023), which show that areas going through demographic shifts; particularly those with a higher-income, more youthful populations are more likely to encounter gentrification and afterwards commercial property development are invested in.

However, R2 and R5 provide a more nuanced perspective, arguing that the specific reasons for residential mobility, such as work possibilities and available amenities (road, electricity, water, and security), are key considerations in influencing investment decisions. This technique is aligned with economic theory, as noticed by Olajide and Lawanson (2017). They suggest that regions with good income potential and infrastructure attract both people and commercial developers. Furthermore, R1's observation of the influx of energetic young individuals driving investment in developments with multiple uses, such as co-working spaces and trendy restaurants in Bosso and Fadikpe, is consistent with current trends. For example, Gabilondo *et al.*, 2024 (2024) argue that the influx of young professionals into metropolitan regions frequently results in investments in lifestyle-based commercial venues. This is further corroborated by R2 and R4's mention of suburban retail areas and premium shopping malls being established in reaction to gentrification and affluent arrivals, following a pattern seen in many urbanising regions.

Furthermore, the results of thematic analysis highlight the impact of demographic shifts on housing mobility in addition to how it affects investments in commercial real estate preferences. Respondents emphasise how different demographics influence specific sorts of investments. R3 and R7, for example, emphasise that younger demographics and transient communities near transportation hubs (such as Bosso, Mobil, and Kpakungu) drive investment in retail spaces and entertainment-inclined real estate, which is consistent with research linking

residential mobility to alterations in commercial demands. The study conducted by Phillips *et al.* (2021) found that younger and more transient populations tend to support businesses like entertainment outlets and retail stores, confirming the responses from R1 and R7. Similarly, R4 and R6 emphasise the importance of socioeconomic status and educational institution sustainability in investment decisions, implying that higher-income locations promote upmarket commercial assets and that families migrating to better schools contribute stability to the region. This is consistent with Blumenberg *et al.*'s (2023) findings, which suggest that consistent family compositions frequently attract retail investments near to schools and nursery services.

However, the replies diverge when R6 says that the move of the Federal University of Technology Minna significantly impacted investments around Bosso, defying traditional ideas that educational institutions stimulate commercial expansion. While extant literature often supports the beneficial financial consequences of educational institutions on real estate, this specific case demonstrates that the opposite can occur when institutions relocate, as reported in a related study conducted by Ibrahim and Hassanain (2022) to evaluate facilities and real estate managers' practices as an influencing factor of organisational relocation/mobility. As a result, while the theme is broadly consistent with prior literature, localised factors such as institutional relocations or cultural transformations (as witnessed in Sauka Kahuta and BariKin Sale) may cause variations in commercial property development trends. The study Samson and Olaolu (2023) in Nigeria further demonstrated how demographic patterns have a big impact on real estate investment. The demands of various population groups, such as the need for luxury shops in affluent neighbourhoods or educational facilities in places with a large number of families, are becoming more and more apparent and appealing to Nigerian investors.

5. Conclusion and Recommendations

This study examines the impact of residential mobility on commercial real estate investment decisions in Minna, Nigeria. Three themes are identified: Stability and risk management, opportunity and growth potential, and demographic influence on investment decisions. Stability and risk management are crucial for investors in Minna, as high residential mobility is often associated with fluctuating populations, leading to higher vacancy rates and unstable rental incomes. This is relevant in the Nigerian context, where economic volatility can amplify the risks associated with residential mobility. Opportunity and growth potential are also significant in areas with high residential mobility, as investors are drawn to neighbourhoods experiencing demographic shifts, gentrification, or economic growth. Demographic influences also play a crucial role in investment decisions, as different population segments have varying needs, and investors tailor their investments accordingly. The findings underscore the importance of understanding local dynamics in the real estate market of Minna, considering specific socio-economic conditions, urban development patterns, and demographic shifts to make informed investment decisions.

The study recommends commercial real estate investors in Minna to conduct in-depth market research, concentrate on secure neighbourhoods, make use of demographic information, and keep an eye on both urban and economic growth. As a result, investors will be better able to comprehend residential mobility patterns; spot growth prospects and base their choices on regional demographic trends and urban planning initiatives.

References

- Abdulai, I. A., Yakubu, I., Dordah, A. D. 2023. Finding a home away from home: Housing choices of itinerant immigrant retailers in the Wa municipality, Ghana. *Regional Science Policy & Practice*, 15(6), 1216-1239.
- Ajayi, O. G., Odumosu, J. O., Samaila-Ija, H. A., Zitta, N., Adesina, E. A., and Olaniyi J. O. (2015). Dynamic road segmentation of part of Bosso Local Government Area, Niger State. *American Journal of Geographic Information System*, 4(2): 64-74.
- Babalola, O. D., Ibem, E. O., Olotuah, A. O., Opoko, A. P., Adewale, B. A., & Fulani, O. A. 2020. Housing quality and its predictors in public residential estates in Lagos, Nigeria. *Environment, Development and Sustainability*, 22, 3973-4005.
- Barberis, E., & Angelucci, A. 2022. Migration policies at the local level: constraints and windows of opportunities in a contentious field. In *Handbook on Urban Social Policies* (pp. 187-203). Edward Elgar Publishing.
- Barreca, A., Curto, R., & Rolando, D. 2020. Urban vibrancy: An emerging factor that spatially influences the real estate market. *Sustainability*, 12(1), 346.
- Bartik, T. J. 2020. Using place-based jobs policies to help distressed communities. *Journal of Economic Perspectives*, 34(3), 99-127.
- Blumenberg, E., Yao, Z., & Wander, M. (2023). Variation in child care access across neighbourhood types: A two-step floating catchment area (2SFCA) approach. *Applied Geography*, 158, 103054.

- Bond, S. A. 2023. *A Review of the Impacts of Short-term Rental Accommodation in Queensland* (Doctoral dissertation, The University of Queensland).
- Braun, V., & Clarke, V. 2006. Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.
- de Bruin, S., Dengerink, J., van Vliet, J. 2021. Urbanisation as driver of food system transformation and opportunities for rural livelihoods. *Food Security*, 13(4), 781-798.
- DeLuca, S., Jang-Trettien, C. 2020. "Not just a lateral move": Residential decisions and the reproduction of urban inequality. *City & Community*, 19(3), 451-488.
- Garcia-Gabilondo, S., Shibuya, Y., & Sekimoto, Y. 2024. Enhancing geospatial retail analysis by integrating synthetic human mobility simulations. *Computers, Environment and Urban Systems*, 108, 102058.
- Haase, A., Bontje, M., Couch, C., Marcinczak, S., Rink, D., Rumpel, P., Wolff, M. 2021 Factors driving the regrowth of European cities and the role of local and contextual impacts: A contrasting analysis of regrowing and shrinking cities. *Cities*, 108, 102942.
- Harrison, A., Immergluck, D., Ernsthäuser, J., & Earl, S. (2021). Housing stability, evictions, and subsidized rental properties: Evidence from metro Atlanta, Georgia. *Housing Policy Debate*, 31(3-5), 411-424.
- Ibrahim, A. M., & Hassanain, M. A. (2022). Organizational workplace relocation: assessment of facilities and real estate managers' practices. *Property Management*, 40(3), 321-342.
- Kanda, W., Klostén, M., Bienkowska, D., Henry, M., Hjelm, O. 2024. Challenges of circular new ventures: An empirical analysis of 70 cases. *Journal of Cleaner Production*, 442, 141103.
- Korah, A. 2020. *Frontier Urbanization and Affirmative Action in Urban Ghana: A Case of Airport City, Accra* (Master's thesis, Miami University).
- Kulu, H., Mikolaj, J., Thomas, M. J., Vidal, S., Schnor, C., Willaert, D., Mulder, C. H. ...et al. 2021. Separation and elevated residential mobility: A cross-country comparison. *European Journal of Population*, 37, 121-150.
- Mourouzi-Sivitanidou, R. 2020. *Market analysis for real estate*. Taylor & Francis.
- Ojo, O., Dabara, D. I., Ajayi, M. T. A. 2022. Performance of commercial and residential real estate investments in Ibadan property market, Nigeria. *Property Management*, 40(2), 169-191.
- Olajide, O., Lawanson, T. 2022. Urban paradox and the rise of the neoliberal city: Case study of Lagos, Nigeria. *Urban Studies*, 59(9), 1763-1781.
- Phillips, J., Walford, N., Hockey, A., & Sparks, L. (2021). Older people, town centres and the revival of the 'high street'. *Planning Theory & Practice*, 22(1), 11-26.
- Phillips, S. 2020. *The affordable city: Strategies for putting housing within reach (and keeping it there)*. Island Press.
- Ratcliffe, J., Stubbs, M., Keeping, M. 2021. *Urban planning and real estate development*. Routledge.
- Rosenthal, S. S., Strange, W. C., Urrego, J. A. 2022. JUE insight: Are city centers losing their appeal? Commercial real estate, urban spatial structure, and COVID-19. *Journal of Urban Economics*, 127, 103381.
- Sakketa, T. G. 2023. Urbanisation and rural development in sub-Saharan Africa: A review of pathways and impacts. *Research in Globalization*, 6, 100133.
- Samson, O. O., & Olaolu, A. A. 2023. Analysis of selected macroeconomic variables and property development in Kwara state, Nigeria: implications on investment decisions. *Asian Research Journal of Arts & Social Sciences*, 20(4), 1-11.
- Stein, S. 2019. *Capital city: Gentrification and the real estate state*. Verso Books.
- Talen, E., & Park, J. 2022. Understanding urban retail vacancy. *Urban Affairs Review*, 58(5), 1411-1437.
- Tanrıvermiş, H. 2020. Possible impacts of COVID-19 outbreak on real estate sector and possible changes to adopt: A situation analysis and general assessment on Turkish perspective. *Journal of Urban Management*, 9(3), 263-269.
- Turok, I. 2015. Redundant and marginalized spaces. *Cities and Economic Change; Paddison, R., Hutton, T., Eds*, 74-93.
- Wang, Y., Lee, B., Greenlee, A. 2024. The role of smart growth in residential location choice: Heterogeneity of location preferences in the Chicago region. *Journal of Planning Education and Research*, 44(2), 766-783.
- Wolff, M., Haase, A., Haase, D., Kabisch, N. 2017. The impact of urban regrowth on the built environment. *Urban Studies*, 54(12), 2683-2700.