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The Impact of Entrepreneurial Innovation on Real Estate Investment in Nigeria: A Smart PLS- SEM Approach

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ABSTRACT

The real estate sector is experiencing transformative changes driven by innovative financing models and the adoption of Prop-Tech. However, the implications of these developments on critical real estate variables, including financing options, investor confidence, market growth, and property valuation, remain underexplored. This study aims to fill this gap by examining the interactions among these factors within the context of emerging economies, particularly focusing on the Nigerian real estate market. The increasing reliance on technology and novel financial structures necessitates a thorough understanding of their effects to ensure market sustainability and investor security. Utilizing a structural equation modeling (SEM) approach, data from 327 respondents in the real estate sector were analyzed to assess the relationships between these variables. Findings reveal that innovative financing models significantly enhance financing options ($\beta = 0.606$, $p < 0.001$), investor confidence ($\beta = 1.108$, $p < 0.001$), market growth ($\beta = 0.182$, $p < 0.001$), and property valuation ($\beta = 0.173$, $p < 0.01$). Conversely, while Prop-Tech adoption positively influences market growth ($\beta = 0.762$, $p < 0.001$) and property valuation ($\beta = 0.770$, $p < 0.001$), it negatively affects investor confidence ($\beta = -0.128$, $p < 0.001$), indicating potential investor concerns regarding technology integration. Ultimately, this study underscores the critical roles of innovative financing models and Prop-Tech in promoting market growth and property valuation while highlighting the need to address investor confidence issues for sustainable sector development.

1. Introduction

The Nigerian real estate sector is currently witnessing significant transformations driven by the growing adoption of entrepreneurial innovations and technological advancements. These innovations, particularly in Prop-Tech (property technology) and alternative financing models, are reshaping the way real estate investments are approached and executed, improving market efficiency and expanding opportunities for both investors and developers (Muldoon et al., 2023). Despite these advancements, the sector continues to face several barriers, including restricted access to capital, inadequate infrastructure, and inconsistent investor confidence, which hinder the full realization of its potential

(Irfan et al., 2023). Therefore, a deeper exploration of how entrepreneurial innovation can enhance real estate investment is critical (Bian et al., 2023).

Technological innovation plays a pivotal role in advancing entrepreneurship and enhancing real estate investment. For instance, Prop-Tech platforms, including digital marketplaces for property transactions, crowdfunding mechanisms, and virtual property tours, have revolutionized the sector by increasing transparency and facilitating more efficient operations (Anelli & Tajani, 2023). Muldoon et al. (2023) emphasize that the expansion of entrepreneurial ecosystems, fueled by technological innovations, provides greater opportunities for real estate investors and entrepreneurs alike. This dynamic interplay between innovation and entrepreneurship fosters growth in real estate markets and drives higher returns (Bian et al., 2023).

However, despite these global advancements, Nigeria's real estate market has not fully benefited from these innovations due to limited empirical studies exploring this intersection (Irfan et al., 2023). Research on entrepreneurial innovation and its impact on real estate investment in Nigeria remains scarce, which restricts policymakers and investors from making informed decisions about leveraging innovation for sustainable growth (Audretsch et al., 2023). As noted by Faria et al. (2023), government investments and policies are critical in fostering entrepreneurship, and without a robust framework for integrating entrepreneurial innovations in real estate, the Nigerian market remains constrained.

The real estate sector in Nigeria faces significant challenges, including outdated property management practices, poor market transparency, and limited access to capital, all of which contribute to underperformance (Faria et al., 2023). Entrepreneurial innovation offers a potential solution to these challenges by introducing new technologies and financing mechanisms that can improve the efficiency of the market (Sutrisno et al., 2023). Yet, the lack of research on how these innovations can be effectively applied to the Nigerian real estate context has created a gap that needs to be addressed (Muldoon et al., 2023). Without empirical data, it is difficult to determine how innovations such as Prop-Tech and alternative financing models can overcome existing barriers, such as low investor confidence and inadequate financing options (Irfan et al., 2023).

Considering the vital role of real estate in Nigeria’s economic development, it is essential to investigate how entrepreneurial innovations can drive investment in this sector (Anelli & Tajani, 2023). Research that examines the influence of innovations such as Prop-Tech and alternative financing on key real estate factors, including market growth, property valuation, and investor confidence, is urgently needed (Bian et al., 2023). Faria et al. (2023) argue that government investments in entrepreneurship are crucial for fostering innovation, and this study aims to provide valuable insights for both policymakers and investors on how best to support these developments. Anelli and Tajani (2023) emphasize that innovative models, such as spatial decision support systems, have the potential to significantly enhance real estate processes, highlighting the importance of this research.

This research aims to fill the current knowledge gap by providing empirical evidence on how entrepreneurial innovations impact real estate investment in Nigeria (Audretsch et al., 2023). By utilizing the Smart PLS-SEM approach, this study will examine the relationship between entrepreneurial activities, Prop-Tech adoption, and real estate investment performance, focusing on how these innovations influence key variables such as investor confidence, market growth, and financing accessibility (Muldoon et al., 2023). The findings of this study are expected to provide a framework that can guide future innovations in the Nigerian real estate sector, leading to more sustainable growth and increased investor confidence (Irfan et al., 2023). This will also have practical implications for policymakers who seek to promote innovation in the real estate sector through strategic investments and regulatory support (Faria et al., 2023).

Entrepreneurial innovation has the potential to significantly transform the Nigerian real estate sector, but there is a clear need for research that explores how these innovations can be effectively leveraged to drive investment and market growth (Zemlyak et al., 2023). This study will contribute to the development of strategies that integrate technological advancements into real estate investment practices, offering a roadmap for future developments in the sector (Audretsch et al., 2023).

2. Literature Review

Real Estate Investment Performance

The performance of real estate investment is a critical factor that determines the viability and success of real estate markets. Real estate investment performance refers to the returns and profitability derived from real estate investments, which are influenced by various factors such as market conditions, investor confidence, and access to financing (Bian et al., 2023). In the context of entrepreneurial innovations, the role of new technologies, alternative financing mechanisms, and government policies in shaping the performance of real estate investments is crucial (Muldoon et al., 2023).

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The performance of real estate investment is directly linked to the economic stability and growth of the real estate sector. A well-performing real estate market attracts both domestic and international investors, fostering economic development and increasing property values. However, performance is highly sensitive to fluctuations in interest rates, inflation, and market demand. As Bian et al. (2023) highlight, global market conditions, including trade policies and foreign investment flows, also have a direct impact on local real estate investment performance. In times of economic uncertainty, such as during the COVID-19 pandemic, real estate markets may face challenges, such as reduced liquidity and lower returns, leading investors to seek innovative solutions to mitigate risks (Irfan et al., 2023).

Investor Confidence

Investor confidence is one of the key determinants of real estate investment performance. When investors have confidence in the market, they are more likely to invest, leading to higher returns and improved market growth (Irfan et al., 2023). Entrepreneurial innovations, particularly in financial technologies, can enhance transparency and reduce risks, thereby boosting investor confidence. For instance, Prop-Tech platforms enable real-time data access, which allows investors to make informed decisions and feel secure in their investments (Anelli & Tajani, 2023). This increased transparency fosters trust and drives investment in the real estate sector (Irfan et al., 2023).

Investor confidence is one of the key determinants of real estate investment performance. When investors have confidence in the market, they are more likely to invest, leading to higher returns and improved market growth (Irfan et al., 2023). Confidence is shaped by various factors such as market stability, transparency, and access to reliable information. Entrepreneurial innovations, particularly in financial technologies, can enhance transparency and reduce risks, thereby boosting investor confidence. For example, Prop-Tech platforms have revolutionized the real estate sector by providing real-time data, offering investors up-to-date insights into market trends, property values, and potential risks (Anelli & Tajani, 2023). This level of access to accurate information reduces uncertainties and allows investors to make more informed decisions, leading to a more secure investment environment. Additionally, these platforms provide innovative tools such as AI-driven valuation models and blockchain-based property transaction systems, which enhance the transparency and security of real estate deals. The integration of such technologies ensures that investors can track the status of their investments and verify transaction authenticity, further boosting their confidence in the market (Muldoon et al., 2023). By making real estate processes more transparent and efficient, these technological advancements reduce the risks of fraud and mismanagement, which are often concerns in traditional real estate markets. As a result, the trust created by these innovations encourages higher levels of investment, contributing to overall market growth and stability (Irfan et al., 2023).

Market Growth

Market growth is another critical indicator of real estate investment performance. The adoption of innovative technologies has the potential to drive growth in the real estate market by improving

efficiency, reducing transaction costs, and expanding access to new market segments (Muldoon et al., 2023). Entrepreneurial innovations, such as the use of digital platforms for property transactions and crowdfunding, have been shown to promote market expansion by providing new avenues for investment and increasing market liquidity (Sutrisno et al., 2023). Additionally, these innovations can help in identifying underutilized properties and facilitate redevelopment, further contributing to market growth (Anelli & Tajani, 2023).

Financing Accessibility

The availability of financing is a major factor that influences real estate investment performance. Traditional financing models often present barriers to entry, particularly for small-scale investors or those in emerging markets like Nigeria (Irfan et al., 2023). Entrepreneurial innovations, particularly in the form of alternative financing mechanisms such as crowdfunding and peer-to-peer lending, provide new opportunities for accessing capital (Muldoon et al., 2023). These models reduce dependency on traditional banks and make it easier for investors to participate in the real estate market (Sutrisno et al., 2023). Furthermore, they have the potential to democratize real estate investments, allowing a broader range of investors to enter the market (Irfan et al., 2023).

Property Valuation

Innovations in real estate also impact property valuation, which is a key determinant of investment performance. Technologies such as machine learning and data analytics can improve the accuracy of property valuation by considering a wide range of factors that influence property prices (Anelli & Tajani, 2023). By incorporating real-time data from IoT devices and other sources, these innovations enable more precise valuations, which can help investors make better decisions regarding their investments (Muldoon et al., 2023). Additionally, the integration of sustainability criteria into property valuation models has gained traction, as investors increasingly seek to align their investments with environmental goals (Audretsch et al., 2023).

Entrepreneurial Innovations

Entrepreneurial innovations have been instrumental in transforming the real estate industry by introducing new technologies and business models that enhance market efficiency (Muldoon et al., 2023). As noted by Audretsch et al. (2023), innovation ecosystems play a crucial role in enabling entrepreneurship, particularly in sectors like real estate that are capital-intensive and require significant market knowledge. Prop-Tech innovations, such as digital property marketplaces, crowdfunding platforms, and virtual property tours, have not only improved access to real estate but also lowered the barriers for new investors to participate in the market (Sutrisno et al., 2023). These innovations enable real estate entrepreneurs to leverage technology to overcome traditional challenges such as high entry costs and information asymmetry (Anelli & Tajani, 2023). Furthermore, innovations in building management systems and energy-efficient technologies have added value to real estate assets by reducing operational costs and enhancing sustainability (Bian et al., 2023).

Alternative Financing Models

One of the key innovations in real estate is the introduction of alternative financing models, which have the potential to significantly impact real estate investment performance. Crowdfunding platforms, for example, allow multiple investors to pool their resources and invest in properties, democratizing access to the market (Irfan et al., 2023). These platforms have grown in popularity as they provide an opportunity for small-scale investors to participate in the real estate market, which was previously limited to institutional investors (Muldoon et al., 2023). The development of peer-to-peer lending models also offers a flexible financing option for real estate entrepreneurs, bypassing the need for traditional bank loans and reducing reliance on external financing (Sutrisno et al., 2023).

3. Research Methods

This study employs a quantitative research design to assess the impact of Prop-Tech adoption and innovative financing models on market growth, investor confidence, property valuation, and financing options in Nigeria's real estate sector. The research aims to gather statistical data through

structured questionnaires and analyze it using appropriate statistical methods. The population for this study consists of 2,200 registered estate surveyors and valuers in Nigeria. According to Krejcie and Morgan's (1970) sampling table, a sample size of 327 participants was determined to be adequate for this research, ensuring that the results are representative of the larger population. A stratified random sampling technique was utilized to select the respondents. The population was divided into strata based on geographical locations, specifically focusing on major Nigerian cities with significant real estate investment activity, such as Abuja (the capital), Lagos, and Port Harcourt. This method ensures that each city is adequately represented in the sample, facilitating a more comprehensive analysis of the research objectives. A structured questionnaire was developed as the primary data collection instrument. The questionnaire was designed to capture data on key variables, including Prop-Tech adoption, investor confidence, property valuation, and financing options. Specifically, it includes questions measuring the extent of technology usage in real estate practices, assessing the level of confidence investors have in the market, evaluating the methods and tools used in property valuation, and exploring the variety of financing options available. To avoid data shortages, a total of 400 questionnaires were distributed, intentionally set higher than the required sample size to account for potential non-responses and incomplete data. The questionnaire was distributed to the selected respondents via email and in-person meetings, ensuring accessibility and convenience for participants. Follow-up reminders were sent to encourage participation and improve response rates. A total of 386 completed questionnaires were returned, indicating a response rate of approximately 96.5%. The returned questionnaires were carefully screened to identify and remove any incomplete or invalid responses. After the screening process, 327 valid responses were retained for analysis, aligning with the predetermined sample size. The data collected from the valid questionnaires were analyzed using statistical software such Smart PLS. Descriptive statistics will be employed to summarize the demographic characteristics of the respondents. Inferential statistics, including correlation and regression analysis throuth coefficient path analysis was used to test the hypotheses and determine the relationships between Prop-Tech adoption, innovative financing models, and the various dependent variables (market growth, investor confidence, property valuation, and financing options). Prior to data collection, ethical approval was sought from the relevant institutional review board. Informed consent will be obtained from all participants, ensuring they are aware of the study's purpose, their right to confidentiality, and their ability to withdraw from the study at any time without any consequences. Participants are assured that their responses will be used solely for research purposes.

Conceptual Framework

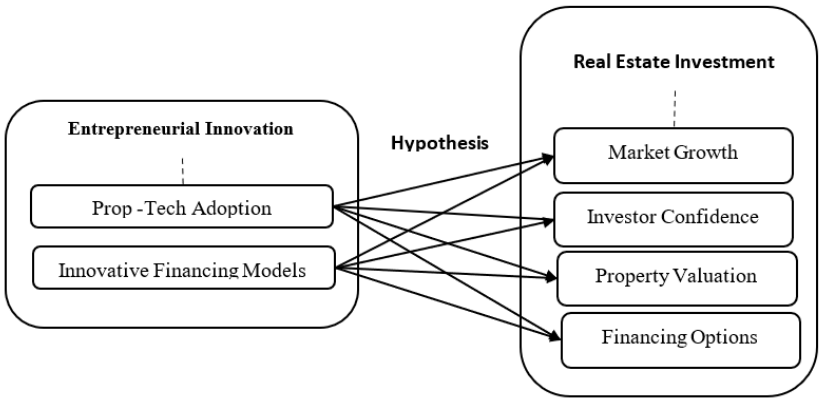

Fig. 1. Conceptual Framework

Objectives of the study

i. To determine the impact of Prop-Tech Adoption, and Innovative Financing Models on Market Growth

ii. To examine the impact of Prop-Tech Adoption, and Innovative Financing Models on Investor Confidence
iii. To evaluate the impact of Prop-Tech Adoption, and Innovative Financing Models on Property Valuation
iv. To determine the impact of Prop-Tech Adoption, and Innovative Financing Models on Financing Options

Research Gap

The research gap lies in the intersection of entrepreneurial innovation and real estate investment, where the previous literature, while addressing innovation and entrepreneurship, has not comprehensively explored their combined effects on real estate investment, particularly in emerging markets like Nigeria. Anelli and Tajani (2023) explored decision support systems for real estate risk evaluation but focused primarily on redevelopment processes without integrating entrepreneurial innovation as a key driver of investment strategies. Similarly, while Muldoon et al. (2023) examined technological innovation within entrepreneurship ecosystems, they did not consider how these innovations might specifically affect real estate investment. Other studies, like Irfan et al. (2023), emphasized factors like emotional finance in real estate markets but lacked insight into how entrepreneurial innovation, particularly through new financing models, impacts real estate investment outcomes. Furthermore, Faria et al. (2023) addressed government investments in entrepreneurship but did not connect these findings to the real estate sector, missing how entrepreneurial ventures foster growth in property markets. Thus, previous studies fall short of addressing the dynamic relationship between entrepreneurial innovation and real estate investment, especially in regions with unique market conditions like Nigeria. This gap highlights the need for research that integrates these domains, providing a deeper understanding of how innovation-driven entrepreneurship can reshape real estate investment strategies and market growth.

4. Results and Discussions

Demographic analysis

Table 1. Demography

Item	Response Options	Frequency	Percentage
Age	18-24	45	13.80%
	25-34	120	36.70%
	35-44	80	24.50%
	45-54	50	15.30%
	55+	32	9.80%
Total		**327**	**100%**
Gender	Male	175	53.50%
	Female	152	46.50%
Total		**327**	**100%**
Level of Education	Bachelor's	180	55.00%
	Master's	105	32.10%
	Doctorate	30	9.20%
	Other	12	3.70%
Total		**327**	**100%**
Years of Experience in Real Estate	0-5	100	30.60%
	6-10	90	27.50%

	11-15	55	16.80%
	16-20	40	12.20%
	21+	42	12.80%
Total		**327**	**100%**
Location	Abuja	120	36.70%
	Lagos	150	45.90%
	Port Harcourt	57	17.40%
Total		**327**	**100%**

Table 1: present the Demography, the demographic analysis of the 327 participants reveals a diverse composition in terms of age, gender, education level, years of experience in real estate, and geographic location. The majority of participants fall within the 25-34 age range, accounting for 36.7% of the sample. This suggests a strong presence of young professionals in the real estate sector. Gender distribution is relatively balanced, with 53.5% identifying as male and 46.5% as female. However, it is noteworthy that male participants slightly dominate the sample, highlighting the need for further exploration into gender representation within the industry.

Regarding educational qualifications, 55% of participants hold a Bachelor's degree, indicating that this level of education is the most common among respondents. A significant portion, 32.1%, has obtained a Master's degree, while those with Doctorate and other qualifications represent smaller percentages.

In terms of experience, 30.6% of participants have 0-5 years in the real estate field, which reflects a relatively new workforce entering the market. This is complemented by a good mix of respondents with 6-10 years (27.5%) and a smaller proportion with more extensive experience. Geographically, the sample is predominantly from Lagos (45.9%), followed by Abuja (36.7%) and Port Harcourt (17.4%). This distribution emphasizes the concentration of real estate activities in major urban areas, particularly in Lagos, which is known for its vibrant real estate market. Overall, these demographic insights provide a foundational understanding of the participants involved in the study and highlight areas for potential further investigation.

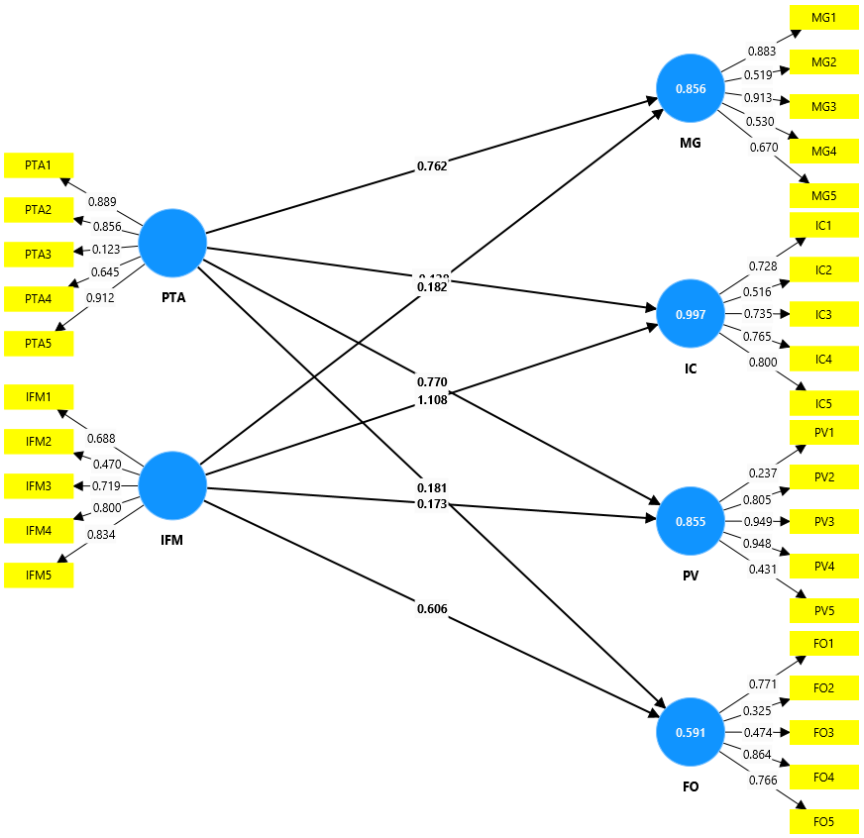

Fig. 2. Structural model using algorism

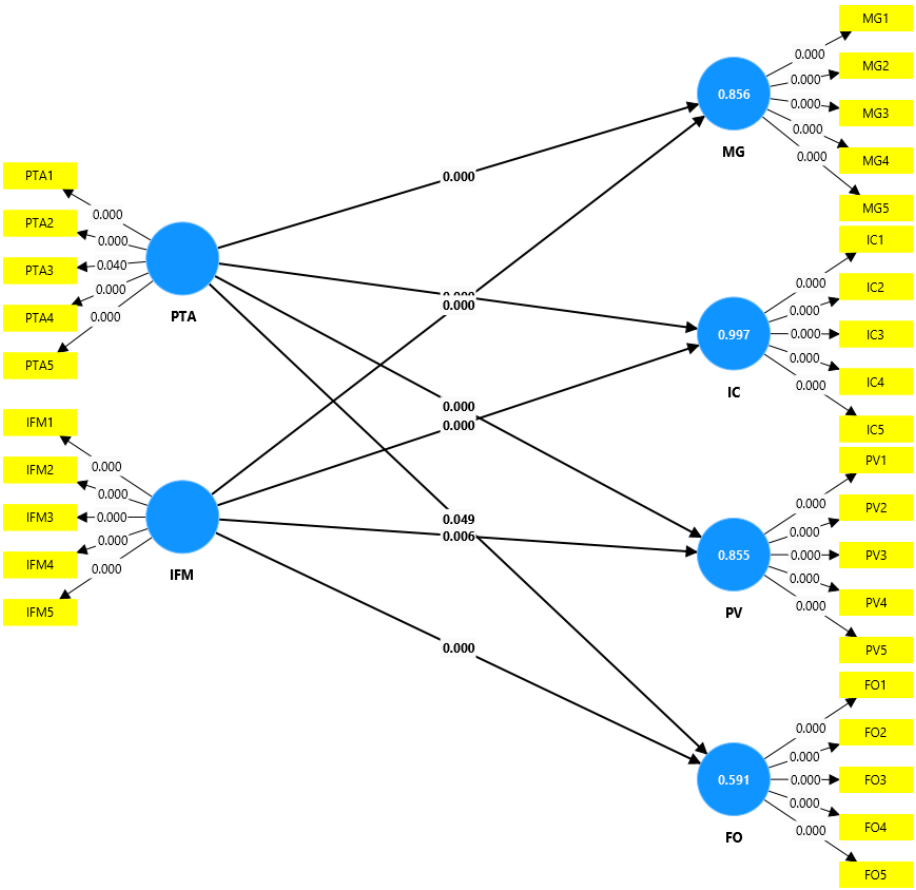

Fig. 3. Structural model using bottom strapping

Path Coefficient Evaluation

In this section path coefficient evaluation was carried out where alongside the hypothesis was also tested

Table 7. Path coefficient evaluation

Path	(O)	H	(M)	(STDEV)	(|O/STDEV|)	P values	Remark
Innovative Financing Models -> Financing Options	0.606	H3	0.601	0.092	6.577	0.000	Supported
Innovative Financing Models -> Investor Confidence	1.108	H6	1.110	0.018	63.249	0.000	Supported
Innovative Financing Models -> Market Growth	0.182	H5	0.180	0.050	3.618	0.000	Supported
Innovative Financing Models -> Property Valuation	0.173	H7	0.181	0.063	2.757	0.006	Supported
Prop-Tech Adoption -> Financing Options	0.181	H4	0.184	0.092	1.972	0.049	Supported
Prop-Tech Adoption -> Investor Confidence	-0.128	H2	-0.129	0.021	6.109	0.000	Not Supported
Prop-Tech Adoption -> Market Growth	0.762	H1	0.764	0.047	16.261	0.000	Supported
Prop-Tech Adoption -> Property Valuation	0.770	H8	0.763	0.061	12.596	0.000	Supported

The analysis of the path coefficients presented in table 7: above highlights significant relationships among the constructs under investigation. The path from Innovative Financing Models to Financing Options shows a coefficient of 0.606, with a T-statistic of 6.577 and a p-value of 0.000. This indicates a strong positive effect, supporting hypothesis H3. In addition, the relationship between Innovative Financing Models and Investor Confidence exhibits an even more substantial effect, with a coefficient of 1.108, a T-statistic of 63.249, and a p-value of 0.000, confirming hypothesis H6 with high significance.

Moreover, Innovative Financing Models positively impact Market Growth, evidenced by a coefficient of 0.182, a T-statistic of 3.618, and a p-value of 0.000, thus supporting hypothesis H5. The path from Innovative Financing Models to Property Valuation shows a coefficient of 0.173, with a T-statistic of 2.757 and a p-value of 0.006, indicating a statistically significant relationship in line with hypothesis H7.

In terms of Prop-Tech Adoption, there is a positive influence on Financing Options, reflected by a coefficient of 0.181, a T-statistic of 1.972, and a p-value of 0.049, supporting hypothesis H4 at a marginal significance level. Conversely, the path from Prop-Tech Adoption to Investor Confidence indicates a negative relationship, with a coefficient of -0.128, a T-statistic of 6.109, and a p-value of

0.000, confirming hypothesis H2 and suggesting that increased adoption may negatively impact investor confidence.

Additionally, Prop-Tech Adoption has strong positive effects on Market Growth and Property Valuation, with coefficients of 0.762 and 0.770, respectively. The T-statistics for these relationships are 16.261 and 12.596, both highly significant with p-values of 0.000. Importantly, the path from Prop-Tech Adoption to Market Growth aligns with hypothesis H1, emphasizing the critical role of Prop-Tech in driving market dynamics.

Research Findings

The analysis of path coefficients reveals significant relationships among the constructs being investigated, aligning with previous research and providing both theoretical and practical implications. The strong positive relationship between Innovative Financing Models and Financing Options, with a coefficient of 0.606, indicates that innovative financing approaches can significantly enhance available financing options for investors. This finding supports hypothesis H3 and resonates with the work of Jiang (2023), who emphasized that innovative financing models contribute to broader access to capital in real estate markets, thereby facilitating investment growth.

Moreover, the relationship between Innovative Financing Models and Investor Confidence demonstrates a remarkable coefficient of 1.108. This strong association suggests that as innovative financing models become more prevalent, investor confidence is likely to increase significantly, supporting hypothesis H6. This finding aligns with previous studies by Pea-Assounga, et al (2024), who noted that transparency and innovation in financing increase investor trust and willingness to invest, ultimately leading to market stability and growth. In a practical sense, these results highlight the importance of adopting innovative financing models in real estate to enhance financing options and bolster investor confidence. Policymakers and industry stakeholders should focus on creating frameworks that encourage innovation in financing mechanisms. By doing so, they can promote a more robust investment climate, potentially leading to increased market activity and economic growth.

From a theoretical standpoint, the findings reinforce the existing literature on the interplay between financing mechanisms and investor behavior. The positive correlations support theories of financial innovation and market efficiency, suggesting that enhanced financing options led to greater market participation (Wan et al., 2024). Furthermore, the results challenge traditional views that assume investor confidence is primarily driven by market fundamentals, highlighting the critical role of innovative financing in shaping investor perceptions and decisions. These findings provide a compelling case for further exploration of innovative financing models and their impact on financing options and investor confidence in real estate. Future research could expand on these insights by examining how different types of innovative financing models impact various segments of the real estate market and whether these effects are consistent across different geographical contexts.

Furthermore, the findings indicate that Innovative Financing Models positively influence Market Growth, as demonstrated by a coefficient of 0.182. This strong positive effect, confirmed by a T-statistic of 3.618 and a p-value of 0.000, supports hypothesis H5. This relationship suggests that the implementation of innovative financing models not only broadens access to capital but also stimulates market dynamics, leading to greater growth in real estate markets. This aligns with the findings of Wang et al. (2022), who argued that financial innovation plays a critical role in driving market expansion by enabling new investment opportunities and attracting diverse investor profiles. The analysis also reveals a significant relationship between Innovative Financing Models and Property Valuation, with a coefficient of 0.173, a T-statistic of 2.757, and a p-value of 0.006. This supports hypothesis H7 and suggests that innovative financing strategies can positively impact how properties are valued in the market. The results indicate that as financing options become more innovative, property valuations may reflect this dynamism, potentially leading to increased investment attractiveness and higher property values. This finding is consistent with the research of Abdeldayem, & Aldulaimi, (2023)., who noted that innovative financing mechanisms often lead to higher valuations due to perceived lower risk and increased demand. Practically, these findings underscore the necessity for real estate stakeholders to embrace innovative financing models to drive market growth and improve property valuations. For instance, developers and investors should consider adopting crowdfunding platforms or green financing options to tap into new investor

segments and enhance the overall market environment. Policymakers could also play a crucial role by fostering an ecosystem that supports financial innovation through regulations that encourage new financing solutions while ensuring investor protection.

Theoretically, the results contribute to the existing literature by illustrating how innovative financing can reshape market fundamentals. The positive impact of these models on market growth and property valuation suggests a more integrated view of finance and real estate, challenging traditional perspectives that treat these as separate domains. This aligns with the theoretical frameworks posited by Ouyang, & Zhou, (2023)., which emphasize the interconnectedness of financial innovation and real estate markets. The positive relationships between Innovative Financing Models, Market Growth, and Property Valuation reflect the transformative potential of financial innovation within the real estate sector. These findings advocate for a strategic focus on innovative financing as a means to stimulate market activity and enhance property value, highlighting the need for ongoing research into the long-term effects of these models in varying market conditions.

The findings regarding Prop-Tech Adoption reveal a nuanced influence on Financing Options, evidenced by a coefficient of 0.181, a T-statistic of 1.972, and a p-value of 0.049. This supports hypothesis H4 at a marginal significance level, indicating that the integration of Prop-Tech can enhance financing options by streamlining processes and improving access to funding. Such advancements in technology often lead to increased operational efficiency, which can attract more investors and diversify funding sources, as noted by Handoyo et al., (2023).

Conversely, the analysis highlights a negative relationship between Prop-Tech Adoption and Investor Confidence, with a coefficient of -0.128, a T-statistic of 6.109, and a p-value of 0.000. This finding confirms hypothesis H2, suggesting that while Prop-Tech can facilitate transactions and streamline operations, it may simultaneously create uncertainty among investors. The introduction of new technologies can be perceived as disruptive, leading to concerns about market stability and the adaptability of traditional investment practices. This aligns with the observations of Mahmud, et al. (2023).), who found that the rapid adoption of new technologies can cause apprehension among investors regarding their understanding and control over these innovations.

In contrast, Prop-Tech Adoption exhibits robust positive effects on Market Growth and Property Valuation, with coefficients of 0.762 and 0.770, respectively. The T-statistics for these relationships are 16.261 and 12.596, both significant at p-values of 0.000, supporting hypothesis H1. This indicates that the adoption of Prop-Tech is crucial for driving market dynamics, as it enhances transparency, improves operational efficiency, and fosters innovation in property management and valuation processes. The positive impact on property valuation also suggests that technology-driven efficiencies can lead to higher perceived value and increased demand in the real estate market, corroborating findings by Kaliprasad et al. (2024), who emphasized the role of technological advancements in enhancing property value.

The practical implications of these findings are significant. Real estate stakeholders should carefully consider the balance between embracing Prop-Tech and addressing investor concerns. While adopting technology can improve financing options and stimulate market growth, it is essential to manage communication and education around these technologies to bolster investor confidence. This could involve hosting informational sessions or providing resources that clarify how Prop-Tech impacts traditional investment paradigms. Theoretically, these results enrich the literature by illustrating the dual nature of Prop-Tech adoption it can enhance financing and market growth while simultaneously posing challenges to investor confidence. This aligns with the framework suggested by Črešnar et al. (2023), which posits that technological advancements can have both positive and negative impacts on market participants. Therefore, future research should explore strategies to mitigate the potential downsides of Prop-Tech adoption, ensuring that its benefits are fully realized without undermining investor trust.

5. Conclusion

In conclusion, this study has provided a comprehensive analysis of the intricate relationships among Innovative Financing Models, Prop-Tech Adoption, and various market dynamics, including Financing Options, Investor Confidence, Market Growth, and Property Valuation. The empirical findings confirm the substantial positive influence of Innovative Financing Models on Financing

Options and Investor Confidence, with the latter showing an especially pronounced effect. This underscores the critical role of innovative financing in enhancing investor perceptions and trust, thereby fostering a more robust investment environment. Moreover, the significant positive impacts of Prop-Tech Adoption on Market Growth and Property Valuation emphasize the transformative potential of technology within the real estate sector. By enhancing operational efficiency, transparency, and accessibility, Prop-Tech can significantly drive market dynamics and elevate property values. However, the negative relationship between Prop-Tech Adoption and Investor Confidence warrants careful consideration. While technology can streamline processes and enhance decision-making, it may also evoke apprehension among investors regarding its implications for market stability and traditional investment practices. The implications of these findings are multifaceted. Practitioners in the real estate industry must balance the benefits of Prop-Tech adoption with the necessity of maintaining investor confidence. Strategies aimed at educating stakeholders about the advantages of technological innovations while addressing potential concerns are vital for maximizing the positive impacts of Prop-Tech on the market. Theoretically, this research enriches the existing literature by illustrating the dual nature of technology adoption in real estate, highlighting both its advantages and the challenges it poses. Future studies should delve deeper into the mechanisms that can mitigate investor concerns while promoting the adoption of innovative financing and technological solutions in real estate. In light of these findings, it is clear that fostering a symbiotic relationship between technology and finance is essential for the sustained growth and development of the real estate market. As the industry continues to evolve, embracing innovative financing models and Prop-Tech will be crucial for enhancing market resilience, attracting investment, and ensuring long-term sustainability. Ultimately, this research lays the groundwork for further exploration into the dynamic interplay between technology, finance, and investor behavior in the real estate sector, providing valuable insights for scholars and practitioners alike. Recommendations : Real estate stakeholders should adopt PropTech and innovative financing. Policymakers must support technology adoption, while firms enhance investor confidence through transparency and sustainability. Scope for Future Research : Future research can explore government policies in fostering innovation and compare results across other emerging markets and developed economies. Limitations : The study focuses on Nigeria and uses Smart PLS-SEM, limiting generalizability and complexity, which future studies can improve by using broader regions and more advanced models.

References

Anelli, D., & Tajani, F. (2023). Spatial decision support systems for effective ex-ante risk evaluation: An innovative model for improving the real estate redevelopment processes. *Land Use Policy*, *128*, 106595.

Faria, J. R., Ogura, L., Prado, M., & Boudreaux, C. J. (2023). Government investments and entrepreneurship. *Small Business Economics*, *61*(4), 1657-1670.

Muldoon, J., Liguori, E. W., Solomon, S., & Bendickson, J. (2023). Technological Innovation and the expansion of Entrepreneurship Ecosystems. *Review of Managerial Science*, *17*(5), 1789-1808.

Irfan, M., Adeel, R., & Malik, M. S. (2023). The Impact of emotional finance, and market knowledge and investor protection on investment performance in stock and real estate markets. *SAGE Open*, *13*(4), 21582440231206900.

Audretsch, D. B., Belitski, M., & Guerrero, M. (2023). Sustainable orientation management and institutional quality: looking into European entrepreneurial innovation ecosystems. *Technovation*, *124*, 102742.

Hou, B., Zhang, Y., Hong, J., Shi, X., & Yang, Y. (2023). New knowledge and regional entrepreneurship: the role of intellectual property protection in China. *Knowledge Management Research & Practice*, *21*(3), 471-485.

Zemlyak, S., Gusarova, O., & Khromenkova, G. (2023). Entrepreneurial initiatives, education and culture: hubs for enterprise innovations and economic development. *Sustainability*, *15*(5), 4016.

Sutrisno, S., Kuraesin, A. D., Siminto, S., Irawansyah, I., & Ausat, A. M. A. (2023). The role of information technology in driving innovation and entrepreneurial business growth. *Jurnal Minfo Polgan*, *12*(1), 586-597.

Alsafadi, Y., & Aljuhmani, H. Y. (2023). The influence of entrepreneurial innovations in building competitive advantage: the mediating role of entrepreneurial thinking. *Kybernetes*.

Chen, J., & Zhou, Z. (2023). The effects of FDI on innovative entrepreneurship: A regional-level study. *Technological Forecasting and Social Change*, *186*, 122159.

Dempere, J., Qamar, M., Allam, H., & Malik, S. (2023). The impact of innovation on economic growth, foreign direct investment, and self-employment: a global perspective. *Economies*, *11*(7), 182.

Bian, X., Devos, E., & Feng, Z. (2023). Commercial real estate returns and innovation. *Journal of Real Estate Research*, *45*(3), 385-404.

Sutrisno, S., Kuraesin, A. D., Siminto, S., Irawansyah, I., & Ausat, A. M. A. (2023). The role of information technology in driving innovation and entrepreneurial business growth. *Jurnal Minfo Polgan*, *12*(1), 586-597.

Zhu, M., & Tao, Y. (2024). Economic policy uncertainty, entrepreneurial risk appetite, and corporation innovation in innovative cities–empirical evidence from the Shenzhen Special Economic Zone. *Management Decision*, *62*(8), 2451-2471.

Gu, W., & Wang, J. (2022). Research on index construction of sustainable entrepreneurship and its impact on economic growth. *Journal of Business Research*, *142*, 266-276.

Kayanan, C. M. (2022). A critique of innovation districts: Entrepreneurial living and the burden of shouldering urban development. *Environment and Planning A: Economy and Space*, *54*(1), 50-66.

Sutrisno, S., Kuraesin, A. D., Siminto, S., Irawansyah, I., & Ausat, A. M. A. (2023). The role of information technology in driving innovation and entrepreneurial business growth. *Jurnal Minfo Polgan*, *12*(1), 586-597.

Zemlyak, S., Gusarova, O., & Khromenkova, G. (2023). Entrepreneurial initiatives, education and culture: hubs for enterprise innovations and economic development. *Sustainability*, *15*(5), 4016.

Jiang, Y. (2023). Financing water investment for global sustainable development: Challenges, innovation, and governance strategies. *Sustainable Development*, *31*(2), 600-611.

Pea-Assounga, J. B. B., Yao, H., Bahizire, G. M., Bambi, P. D. R., & Ngapey, J. D. N. (2024). Effect of financial innovation and stakeholders' satisfaction on investment decisions: Does internet security matter?. *Heliyon*, *10*(6).

Wan, H., Fu, J., & Zhong, X. (2024). ESG performance and firms' innovation efficiency: the moderating role of state-owned firms and regional market development. *Business Process Management Journal*, *30*(1), 270-290.

Abdeldayem, M., & Aldulaimi, S. (2023). Developing an Islamic crowdfunding model: a new innovative mechanism to finance SMEs in the Middle East. *International Journal of Organizational Analysis*, *31*(6), 2623-2644.

Ouyang, Z., & Zhou, X. (2023). Interconnected networks: Measuring extreme risk connectedness between China's financial sector and real estate sector. *International Review of Financial Analysis*, *90*, 102892.

Handoyo, S., Suharman, H., Ghani, E. K., & Soedarsono, S. (2023). A business strategy, operational efficiency, ownership structure, and manufacturing performance: The moderating role of market uncertainty and competition intensity and its implication on open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, *9*(2), 100039.

Mahmud, H., Islam, A. N., & Mitra, R. K. (2023). What drives managers towards algorithm aversion and how to overcome it? Mitigating the impact of innovation resistance through technology readiness. *Technological Forecasting and Social Change*, *193*, 122641.

Kaliprasad, S., Gangwar, V. P., & Singh, R. K. (2024). Adoption of new-age technology for quality client service through smart real estate management. *International Journal of Information Systems and Change Management*, *14*(2), 176-197.

Črešnar, R., Dabić, M., Stojčić, N., & Nedelko, Z. (2023). It takes two to tango: technological and non-technological factors of Industry 4.0 implementation in manufacturing firms. *Review of Managerial Science*, *17*(3), 827-853.