International Journal of
Finance and Accounting
(IJFA)

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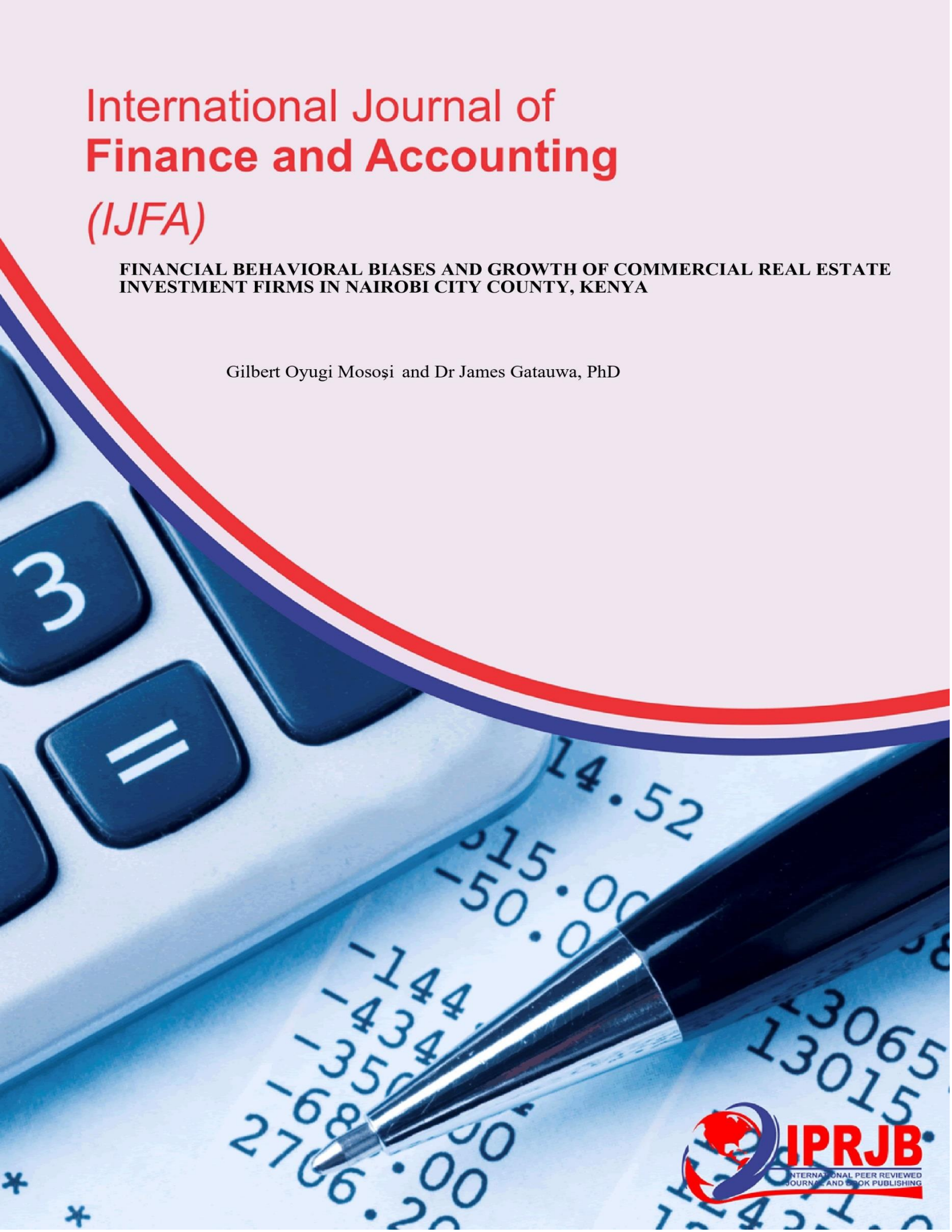

IPRJB
INTERNATIONAL PEER REVIEWED JOURNALS AND BOOK PUBLISHING

International Journal of Finance and Accounting
ISSN 2518-4113 (online)
Vol. 10 Issue 2, pp. 1 - 33, 2025

Financial Behavioral Biases and Growth of Commercial Real Estate Investment Firms in Nairobi City County, Kenya

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Article History

Published on 2025-11-11

How to cite in APA format:

Mososi, G. O., & Gatauwa, J. (2025). FINANCIAL BEHAVIORAL BIASES AND GROWTH OF COMMERCIAL REAL ESTATE INVESTMENT FIRMS IN NAIROBI CITY COUNTY, KENYA. *International Journal of Finance and Accounting, 10*(2). https://doi.org/10.5281/zenodo.17650215

Abstract

Purpose: The study aimed to examine the influence of financial behavioral biases on the growth of commercial real estate investment firms in Nairobi City County, Kenya. It specifically focused on assessing how heuristic biases, prospect-related tendencies, herding behavior, and market-influenced decision-making affect firm expansion within the commercial real estate sector.

Methodology: A descriptive research design was employed, targeting 69 commercial real estate firms registered under the Kenya Property Developers Association (KPDA). From these firms, 276 key managers—finance, property, residential site, and portfolio managers—were identified as the target population. Using non-probability convenience sampling, 164 managers were selected to participate. Primary data were collected using structured questionnaires. Data analysis was conducted using SPSS version 22, employing both descriptive statistics (means, frequencies, percentages) and inferential statistical techniques.

Findings: The study found that financial behavioral biases significantly and negatively influence the growth of commercial real estate investment firms. Investors demonstrated heightened sensitivity to losses compared to gains and displayed a tendency to rely on peer influence rather than professional advice. These biases contributed to suboptimal investment decisions and inaccurate assessments of property values.

Unique Contribution to Theory, Practice and Policy: The study reinforces behavioral theory, heuristic constructs, and prospect theory by demonstrating their applicability in explaining decision-making behavior among real estate investors in emerging markets such as Kenya. The findings highlight the need for training managerial staff to identify and mitigate heuristic and cognitive biases, improve the quality of investment decisions, and minimize reliance on irrelevant or misleading information. The study recommends establishing a government-led regulatory authority to formulate comprehensive guidelines and oversight mechanisms aimed at enhancing investor education and promoting informed decision-making. Adoption of these measures is expected to support sustainable growth in Kenya's real estate sector.

Keywords: Financial behavioral biases, heuristic biases, prospect theory, herding behavior, commercial real estate growth, investor decision-making, Nairobi City County, Kenya.

JEL Codes: F30, F39, G15, G23

INTRODUCTION

Background of the Study

The growth of commercial real estate investment firms is influenced by multiple factors, including capital allocation, market dynamics, and investor behavior. In Nairobi City County, these firms have become key drivers of economic development, providing commercial spaces, generating employment, and contributing significantly to the financial sector. Despite the sector's potential, the growth trajectory of these firms is often affected by financial behavioral biases among investors, such as overconfidence, loss aversion, and herd behavior, which can influence decision-making, risk-taking, and capital allocation strategies. Understanding these biases is crucial for explaining variations in firm growth and performance within the local real estate market. Globally, real estate remains a dominant component of investment portfolios. Approximately 28% of global investors' assets are held in real estate, with 34% ranking it among their top three investment preferences. For example, Australian investors allocate nearly 27% of their portfolios to real estate (Melser & Hill, 2018). The global real estate market has witnessed substantial capital inflows, reaching US$835 billion in 2014, reflecting strong investor confidence and an increasing appetite for cross-regional investments (Newell & Marzuki, 2022). Markets in Asia Pacific, including Japan, Australia, Singapore, and China, continue to experience robust demand, particularly in residential and gated community developments, despite yields averaging 4.5% to 6% (PwC, 2019).

Regionally, the performance of the African real estate sector varies. East African countries like Kenya and Tanzania present relatively stable investment environments, supported by improving transparency, land registry digitization, and emerging REIT frameworks (Mwania, 2023). Conversely, countries such as Senegal, Ethiopia, and Angola rank low on the real estate transparency index, reflecting challenges in regulatory enforcement and market monitoring. Population growth and urbanization in Africa—expected to reach 56% urban population by 2050—are driving demand for residential and commercial spaces, presenting opportunities for growth in urban real estate markets (Awuah & Abdulai, 2022). Locally, Kenya's commercial real estate sector has experienced rapid expansion, driven by rising urbanization, increased demand for office and residential space, and supportive financial mechanisms. Standard lease agreements involve quarterly payments, five-year terms, and annual escalations averaging 7.5%, while regulatory requirements include withholding taxes on residential properties and VAT on commercial assets. Between 2018 and 2021, credit allocation to the building and construction sector increased by 32.4%, highlighting the importance of private borrowing and mortgages in financing development projects (Malginov & Sternik, 2023). Despite this growth, research examining the role of investor behavioral biases in influencing firm growth remains limited, creating a knowledge gap in understanding the sector's development trajectory. Behavioral biases, including heuristic tendencies, prospect biases, herding behavior, and market factors–driven decision-making, constitute key independent variables influencing the growth of commercial real estate investment firms. These biases shape how investors evaluate risk, make investment

decisions, and respond to market signals, ultimately affecting the expansion and performance of firms in Nairobi's dynamic real estate market. Investigating these behavioral influences provides insights into the mechanisms through which psychological tendencies impact firm growth.

Statement of the Problem

Investments in real estate are essential for creating jobs, housing households, improving income distribution, and reducing poverty (Ngunjiri, 2022). According to Nzau (2020), real estate is probably going to be a significant driver of economic expansion and attract the attention of large investors. However, statistics show that roughly 51% of private families live in ghettos, and there is a 2.1 million units' deficit of housing primarily for small and medium-sized households (Kieti et al., 2020). For instance, Kenya's real estate market recorded a total return of 11.2% in 2018 as opposed to 14.1% in 2017, indicating a slowdown in the productivity of real estate agents. Over the last two years, the commercial real estate industry has also seen a considerable decline, with a 40% decline in market share in 2023 compared to 2022. Furthermore, the market for real estate investment management experienced a decline of almost 1.5 trillion dollars in 2023. The value of assets under management (AUM) fell to 4.6 trillion dollars in 2023 from 6.1 trillion dollars in 2022. Commercial real estate companies have completely disregarded financial behavioral biases, despite the fact that these biases can have a substantial impact on investment strategies, risk management, and overall company growth (Nzau, 2020). These behavioral biases include overconfidence, herding tendency, and loss aversion. Additionally, figures show that just 35,000 new housing units are generated annually in Kenyan urban areas, despite the fact that up to 200,000 new units are needed annually, indicating a severe housing shortage. Office space accounts for the majority of this deficit.

Tyson et al. (2020) investigated the influence of psychological biases on the investment choices of property agents operating in Shenzhen, China. The study's geographic focus underscored a contextual limitation, as it did not account for dynamics in other regions. In contrast, the present analysis was situated within the Kenyan context. Tyson et al. (2020) explored the impact of behavioral biases on the interplay between property investment approaches and the operational performance of real estate enterprises in Nairobi County, Kenya. However, the use of a cross-sectional survey methodology introduced a design-related limitation to the study. This study employed a descriptive research design. Tyson et al. (2020) investigates how behavioral bias affects Kiambu, Kenya, real estate values. However, the study omitted the growth component, indicating a conceptual gap. Therefore, the aim of this study was to investigate the presence and impact of financial behavioral biases on the growth of commercial real estate investment firms.

Objectives of the Study

Specific Objectives

i) To explore the effect of heuristic biases on the growth of commercial real estate investment firms in Kenya.
ii) To evaluate the effect of prospect biases on the growth of commercial real estate investment firms in Kenya.
iii) To find the effect of herding biases on the growth of commercial real estate investment firms in Kenya.
iv) To establish the effect of market factors driven behavior on growth of commercial real estate investment firms in Kenya.

Research Hypothesis

This study developed the following research study hypothesis.

$H0_1$: There is no relationship between the Heuristic biases and growth of commercial real estate investment firms in Nairobi City County, Kenya.
$H0_2$: Prospect biases do not have an effect on the growth of commercial real estate investment firms in Nairobi City County, Kenya.
$H0_3$: Herding biases has no effect on the growth of commercial real estate investment firms in Nairobi City County, Kenya.
$H0_4$: Market factors driven behavior does not have an effect the growth of commercial real estate investment firms in Nairobi City County, Kenya

Significance of the Study

Understanding the decision-making processes of commercial real estate investment organizations is crucial, and this study provides insights into how behavioral tendencies in financial decisions—such as overconfidence, loss aversion, and group influence—affect risk-taking and asset allocation. By highlighting these tendencies, the research helps identify potential biases and pitfalls that may hinder the growth and success of commercial real estate firms in Kenya. Investors, managers, and financial analysts can use this knowledge to make more informed decisions, improve strategic planning, and enhance overall organizational performance. Secondly, the study contributed to risk management and market stability. Behavioral biases can significantly influence the dynamics of the real estate market, potentially leading to volatility and misallocation of resources. By examining these biases in Kenyan commercial real estate investment firms, the study identifies vulnerabilities and provides evidence-based recommendations for mitigating risks. Policymakers, regulators, and industry practitioners can use these findings to design interventions that promote market stability, protect investors, and safeguard the sector from systemic shocks. The study emphasized on the importance of market transparency, investor protection, and

sustainable industry growth. Understanding financial behavioral biases enables firms to implement practices that improve disclosure, decision-making, and compliance with regulatory frameworks. This fosters equitable and informed investment practices while encouraging long-term planning and reduced speculative behavior. The insights from this study are particularly relevant to Kenya's commercial real estate market, offering localized guidance for policy formulation, strategic interventions, and sustainable development, ultimately strengthening investor confidence and attracting both local and foreign investment.

LITERATURE REVIEW

Theoretical Review

Behavioural Theory of the Firm

Cyert and March were the first to propose this theory in 1952. This idea is divided into four parts: human emotions, profit satisfaction, cooperative behavior, and business size. Depending on the size of the company, some managers may want to work for a large, prosperous company because it will offer them greater honor and stat

us (Dong et al., 2021). The managers may be driven to demonstrate the company' performance, which leads them to pursue high-profile goals. As a result, letting go of the past choices comes with a price. Even if the employees are not interested in increasing earnings, the proprietors of a profitable company might be. Nonetheless, because employees may not have perfect information, administrators and staff may make decisions that do not maximize profits. According to Belitski et al. (2021), the idea aids in understanding the expansion of small businesses and demonstrates how each one supports the others. The theory also demonstrates that the company is composed of numerous people with slightly divergent objectives. Additionally, to accomplish the institution's goals, members of the alliance must agree on specific targets through a process of deliberation (Arenas et al., 2020). Even though members of an alliance may have different goals, the alliance and the company will be viable as long as the available incomes exceed the demands of the members. These goals need to address a wide range of problems, including sales, revenue, records, and production levels. Maximizing the well-being of each and every one of their clients is the aim of real estate companies. Human emotions drive people to intentionally choose ways to take advantage of their financial well-being. However, emotions did not have an impact on us in the real world. This was bias, prejudice, and preconception-based discrimination. Thus, the theory explained how businesses grow. As a result, it clarified the mechanism via which the dependent variable grows.

Heuristic Theory

Simon was the one who first put up this notion in 1977. The theory described the three components of heuristics representativeness, availability bias, and anchoring when it was first introduced. People may overemphasize current experience and overlook the average long-term rate as a result of representativeness, which can result in biases (Adamovic, 2023). This bias is exemplified by investors' belief that a company had a high long-term growth rate following a few quarters of growth. Another outcome associated with representativeness is "sample size disregard," which arises when individuals draw inferences from limited data sets. "Availability bias" refers to the excessive reliance on information that is readily obtainable. Despite the foundational tenets of optimal asset allocation through portfolio diversification, this cognitive distortion becomes evident in real estate investing as a tendency among investors to favor properties they either already know or can easily understand. Nukala and Rao (2021) describe anchoring as a cognitive bias wherein individuals rely on initial reference points to formulate judgments, often leading to estimates that lean toward those starting values, as varying baselines tend to generate differing outcomes. In the context of real estate, anchoring emerges when valuation benchmarks are influenced by recent data trends. Investors frequently refer to the initial purchase amount during transactions and assessments, causing historical pricing to disproportionately affect current evaluations. This tendency prompts real estate participants to establish value ranges grounded in prior patterns, which impedes responsiveness to abrupt market shifts. Anchoring is closely linked to representativeness, as individuals often emphasize recent experiences—becoming increasingly optimistic amid rising markets and more negative during downturns (Bauer & Friesl, 2022).

This believe was thought to be pertinent to the research. The heuristic biases variable was explained by the theory. It described the metrics for heuristic biases, such as availability, overconfidence, and representativeness.

Empirical Review

Ahiadu et al. (2024) conducted a study examining decision-making shortcuts and psychological distortions within the property investment domain. To assess the influence of these cognitive patterns on investor behavior, the researchers first applied EFA. Subsequently, they employed a SEM path framework to determine whether the identified heuristics were affected by the demographic attributes of residential market participants and to evaluate their impact on investment preferences. The findings indicated that choices made by investors in the housing sector are shaped by collective behavioral tendencies and decision-making heuristics, including representativeness, ease of recall, and initial reference bias. Overconfident investors are typically those who make more than the usual amount of money. When contemplating a potential investment, overconfident investors are also more inclined to pay close attention to the home's pricing. Overall, female investors tend to demonstrate stronger tendencies toward availability and anchoring heuristics.

Factors such as property pricing and geographic positioning often exert a more significant influence on individuals in the housing sector who show pronounced susceptibility to these cognitive shortcuts. Although this investigation was carried out within the Kenyan context, the initial comparative study was undertaken in Portugal. Hossain and Siddiqua (2022) conducted an empirical study to examine the influence of behavioral factors on investment decisions on the Dhaka Stock Exchange. The findings indicated that behavioral bias had a significant role. This study aims to analyze survey data to determine the association between retail investors' socioeconomic characteristics and investment outcomes, as well as to summarize the behavioral factors influencing their investment decisions. Over the past ten years, Bangladesh's capital market particularly its stock market has expanded rapidly as a result of a rise in investors who are not financially literate. The survey's findings indicate that investors' investment views and decisions are heavily influenced by behavioral bias, and that there is a substantial correlation between two personal traits and the investors' investment amount.

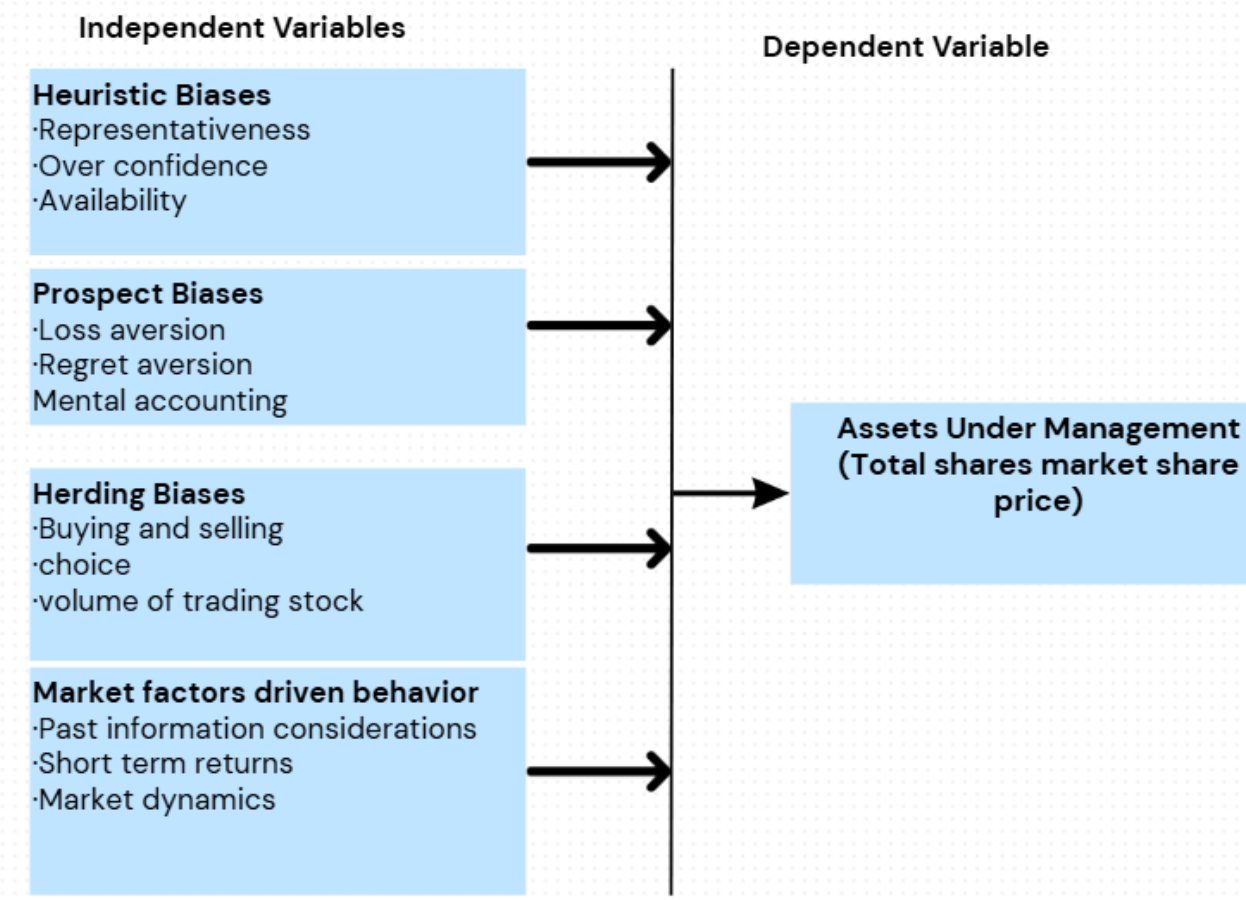
The focus of Barno et al.'s (2020) study was on how prospect-related cognitive distortions affect SMEs' investment decisions in Nairobi County. Determining the degree to which prospect bias influences financial decisions made by small and micro-sized enterprises in the area was the main goal of the current study. The research specifically aimed to assess the influence of psychological tendencies on investment behaviors, including herd mentality, prospect framing, excessive confidence, and initial reference dependence. It also looked at the moderating role of financial literacy in these relationships. The investigation was organized using an explanatory design and was based on prospect theory. Regression analysis results showed that prospect-related factors significantly and favorably influenced investment decisions. As a result, the study advises business owners to plan future investments with careful consideration while avoiding becoming overly fixated on past financial failures.

Gaca (2018) explored valuation as an indicator of market pricing within the property industry, alongside appraisal practices and real estate administration. The analysis reviewed prevailing Polish valuation protocols in conjunction with broader European and international standards, concluding that property costs can be determined using price points that meet established conditions—termed transactional values. The research concentrated on two core themes: investment patterns in both residential and commercial property markets. However, the study's reliance on a comparative design introduced a methodological limitation.

Conceptual Framework

The conceptual framework illustrated the connection between predictor and outcome variables. In this context, heuristic tendencies, prospect-based behavioral traits, crowd-influenced actions, and market-oriented behaviors functioned as the independent variables, while the expansion of commercial property investment enterprises represented the dependent variable.

Figure 1: Conceptual Framework



Source: Researcher (2024)

RESEARCH METHODOLOGY

The research methodology used to investigate the influence of financial behavioral biases on the growth of commercial real estate investment firms in Nairobi City County is detailed here. A descriptive research design was adopted to capture patterns, attitudes, and behaviors of investors, focusing on heuristic biases, prospect biases, herding behavior, and market-driven decisions. The target population comprised 69 commercial real estate firms registered under the KPDA, with four managers from each firm (finance, property, residential site, and portfolio managers), totaling 276 respondents. Using the Slovin formula and systematic sampling, a sample of 164 managers was selected. Primary data were collected through structured questionnaires, validated through pilot testing and expert review, and reliability was confirmed via Cronbach's Alpha. Data were analyzed using SPSS version 22, employing descriptive statistics and inferential techniques including multiple regression to examine the relationships between independent variables and firm growth. Diagnostic tests, including multicollinearity, normality, linearity, heteroscedasticity, and sampling adequacy, ensured robust findings. Ethical considerations, such as informed consent, confidentiality, and approval from relevant authorities, were strictly observed. The methodology enabled systematic collection, analysis, and interpretation of data to assess how cognitive and market-driven biases affect commercial real estate firm growth in Nairobi.

RESULTS AND DISCUSSIONS

Descriptive Statistics Analysis

Descriptive results of both the dependent and independent variables were presented.

Heuristic Biases

Descriptive on heuristic biases are presented in Table 1.

Table 1: Heuristic Biases

Statement	Strongly Disagree	Disagree	Neither agree/Disagree	Agree	Strongly Agree	Mean	Standard Deviation
I think I can outperform the market with my abilities and understanding of the real estate market.	10.50%	1.50%	24.80%	36.10%	27.10%	3.68	1.20
Usually, I can predict when a good or bad market will end.	7.50%	9.00%	24.80%	26.30%	32.30%	3.67	1.23
I have the ability to predict when strong or weak market returns will expire.	6.80%	8.30%	19.50%	41.40%	24.10%	3.68	1.13
Usually, I set a goal price for purchases and sales beforehand.	6.80%	6.00%	15.80%	40.60%	30.80%	3.83	1.14
I base my decisions on what my friends and coworkers think.	9.00%	11.30%	15.00%	33.80%	30.80%	3.66	1.27

Source: Research Data (2025)

According to the findings, the majority of respondents—63.2%—agreed with the statement that they think their real estate market expertise and abilities will enable them to outperform the market (mean=3.68, std.dev=1.20). This demonstrates how having prior market knowledge enables businesses to outperform their rivals. Furthermore, the majority of respondents (58.6%) agreed with the assertion that they can typically predict when a good or poor market will end (mean=3.67, std.dev=1.23). This suggests that the majority of real estate managers possess the ability to forecast the market. Additional findings indicated that 65.5% of participants concurred with the assertion that they can foresee the conclusion of favorable or unfavorable market performance (mean = 3.68, standard deviation = 1.13). This suggests that the majority of property managers possess the ability to project market trends. Moreover, 58.6% affirmed that they typically establish predetermined transaction prices for purchasing or selling properties (mean = 3.83, standard deviation = 1.14), implying their capacity to set pricing targets proactively.

Another 64.6% agreed that their investment choices are influenced by input from peers and associates (mean = 3.66, standard deviation = 1.27), indicating that interpersonal perspectives play a role in shaping their decision-making processes. The outcomes of the present investigation aligned with the findings reported by Adamovic (2023), who identified that collective decision patterns and cognitive shortcuts—namely representativeness, availability, and anchoring heuristics—significantly influence investor choices within the residential property sector.

Prospect Biases

Descriptive on prospect biases are presented in Table 2.

Table 2: Prospect Biases

statement	Strongly Disagree	Disagree	Neither Agree/Disagree	Agree	Strongly Agree	Mean	Standard deviation
We only ever sell investments whose value has grown.	10.50%	6.00%	10.50%	25.60%	47.40%	3.93	1.33
Every investment is always assessed independently of the others, not together.	10.50%	1.50%	18.80%	37.60%	31.60%	3.78	1.21
We only make profitable investments after carefully weighing the risks.	10.50%	4.50%	8.30%	51.90%	24.80%	3.76	1.19
We are always willing to sell a loosing investment because most of them are on the loss side	4.50%	12.80%	18.80%	39.10%	24.80%	3.67	1.12
We always steer clear of selling investments that have lost value	9.00%	11.30%	13.50%	33.80%	32.30%	3.69	1.28
We consistently choose riskier ventures, even when there is a great chance of profit.	9.60%	4.30%	27.00%	39.10%	20.00%	3.56	1.15

Source: Research Data (2025)

The findings revealed that 73.0% of participants concurred with the view that they only dispose of assets whose worth has appreciated (mean = 3.93, standard deviation = 1.33). This suggests that a majority of real estate managers prefer to liquidate investments that have demonstrated value growth. Additionally, 69.2% agreed that each investment is evaluated separately and not in conjunction with others (mean = 3.78, standard deviation = 1.29), indicating that asset assessments are conducted individually. Furthermore, 76.7% endorsed the statement that they pursued profitable ventures only after thoroughly assessing potential risks (mean = 3.76, standard deviation = 1.19), implying that risk evaluation plays a critical role in achieving successful investment outcomes. The analysis further revealed that 63.9% of participants supported the assertion that they are typically inclined to dispose of underperforming assets, as most fall into the loss category (mean = 3.67, standard deviation = 1.12). This suggests that a considerable proportion of real estate enterprises actively divest loss-incurring investments. Additionally, 66.1% affirmed that they generally refrain from selling devalued holdings (mean = 3.69, standard deviation = 1.28), implying strategic avoidance of offloading assets with diminished worth. Moreover, 59.1% agreed that they frequently opt for high-risk opportunities, especially when the potential for returns is substantial (mean = 3.56, standard deviation = 1.15). These insights align with findings by Arenas et al. (2020) study, whose regression analysis demonstrated that prospect-related cognitive factors exert a strong and positive influence on financial decision-making.

Herding Biases

Descriptive on herding biases are presented in Table 3.

Table 3: Herding Biases

statement	StronglyDisagree	Disagree	Neither Agree/Disagree	Agree	Strongly Agree	Mean	Standard deviation
We generally observe the reactions of fellow market participants and promptly adjust our actions in response to shifts in their investment choices	7.50%	3.80%	6.00%	28.60%	54.10%	4.18	1.19
Other investors' stock purchases and sales have an impact on our investment decisions.	6.80%	4.50%	2.30%	24.80%	61.70%	4.30	1.16
The stock volume decisions made by other investors have an impact on your own investing selections.	4.50%	8.30%	4.50%	24.80%	57.90%	4.23	1.15
The stock types chosen by other investors have an impact on your investment decisions.	11.30%	0.00%	6.00%	29.30%	53.40%	4.14	1.27
We always copy what other investors are doing	5.30%	6.00%	6.80%	27.80%	54.10%	4.20	1.14

Source: Research Data (2025)

The findings indicated that 82.7% of respondents affirmed their tendency to observe how fellow investors react to movements within the stock market and to promptly adjust their own decisions accordingly (mean = 4.18, standard deviation = 1.19). This suggests that the majority of property investment managers possess the capability to track market activities in real time. Furthermore, 86.7% concurred with the assertion that their financial strategies are shaped by the buying and selling behavior of other investors (mean = 4.30, standard deviation = 1.16), implying that peer-driven trading activity plays a substantial role in guiding their investment choices. The study further revealed that 82.7% of participants affirmed their investment decisions are shaped by the volume of stock transactions carried out by other investors (mean = 4.23, standard deviation = 1.15), suggesting that stock activity levels significantly influence choices in the real estate sector. Additionally, an equal proportion—82.7%—indicated that the types of stocks selected by peers affected their financial strategies (mean = 4.14, standard deviation = 1.27), implying that asset category preferences among investors serve as a guide in shaping decisions. Moreover, 81.9% agreed that they routinely emulate the actions of fellow investors (mean = 4.20, standard deviation = 1.14). These patterns are consistent with the findings of Belitski et al. (2021), who identified that excessive confidence and herd-like behavior substantially shaped investment practices among Pakistani market participants.

Market Factors Driven Behavior

Descriptive on market factors driven behavior are presented in Table 4.

Table 4: Market Factors Driven Behavior

statement	Strongly Disagree	Disagree	Neither Agree/Disagree	Agree	Strongly Agree	Mean	Standard deviation
Prior to making an investment decision, the corporation takes historical data on the real estate industry's performance into account.	10.50%	19.50 %	10.50%	42.90 %	16.50%	3.35	1.26
Investors in commercial real estate choose short-term investments	3.00%	18.80 %	13.50%	43.60 %	21.10%	3.61	1.11
The information that is currently available about real estate affects the commercial real estate investor's future investing choices.	9.80%	13.50 %	9.80%	44.40 %	22.60%	3.56	1.25
Investors in commercial real estate utilize their profits to finance short-term projects.	4.50%	17.30 %	5.30%	34.60 %	38.30%	3.85	1.23
Well informed real estate investors consider the market dynamics when investing	7.50%	9.80%	6.00%	48.90 %	27.80%	3.80	1.17

Source: Research Data (2025)

The analysis revealed that 59.4% of participants affirmed that their organizations examine historical performance records of the real estate sector before committing to investment decisions (mean = 3.35, standard deviation = 1.26). This implies that referencing past data supports informed decision-making among investors. Moreover, 64.7% of respondents endorsed the view that stakeholders in commercial property often favor short-duration investments (mean = 3.61, standard deviation = 1.11), indicating a general preference for near-term financial ventures. In addition, 67.0% agreed that contemporary real estate information influences future investment choices within the commercial property domain (mean = 3.56, standard deviation = 1.25). Furthermore, 72.9% confirmed that earnings from real estate activities are commonly utilized to support short-term initiatives (mean = 3.85, standard deviation = 1.23), suggesting that property managers often reinvest gains into other ventures. Lastly, 76.7% of respondents stated that informed investors take prevailing market trends into account when making investment decisions (mean = 3.80, standard deviation = 1.17). These findings align with Gaca (2018), who posited that property valuation can be determined using price points that meet defined transactional benchmarks.

Growth of Commercial Real Estate Investment Firms

Trends on market shares, assets under management and revenue growth are presented in figure 2, 3 and 4.

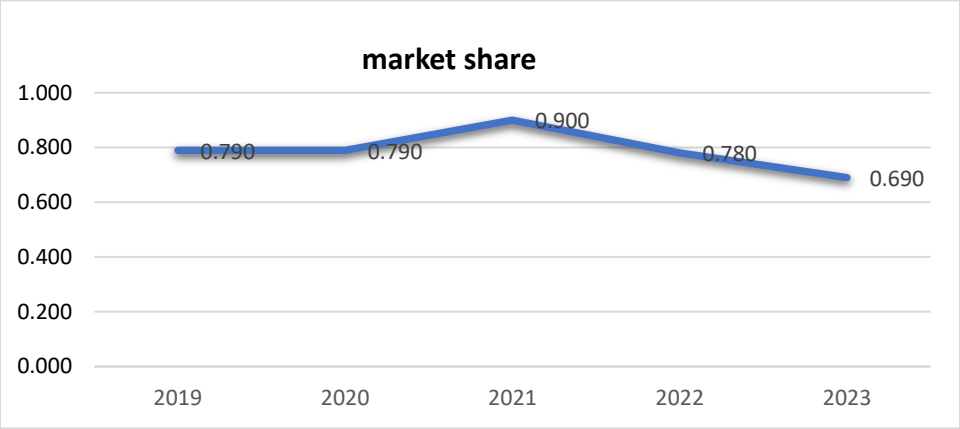


Figure 2:Trends on Market Share of Commercial Real Estate Investment Firms

The results showed that the mean of market share of the Commercial Real Estate Investment Firms in the year 2019 was 0.790 but remained constant in the year 2020. The market share however increased to 0.900 in the year 2021 but declined to 0.780 in 2022 and further declined to 0.680 in

the year 2023. This infers that most of the Commercial Real Estate Investment Firms market shares have been decreasing.

Trends on assets under management of the real estate investment firms have been presented in figure 3.

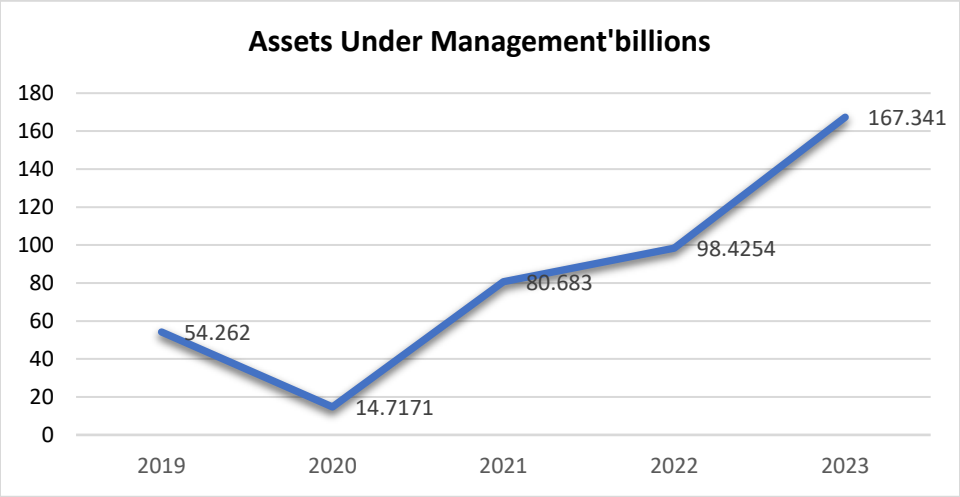


Figure 3: Trends on Assets under management of Commercial Real Estate Investment Firms

The results showed that the mean of assets under management of the Commercial Real Estate Investment Firms in the year 2019 was 54.262 billion. The assets under management however declined to 14.717 billion in the year 2020 but increased to 80.683 billion in 2021 and further increased to 98.425 billion in the year 2022. The assets under management further increased to 167.341 in the year 2023. This infers that most of the Commercial Real Estate Investment Firms assets under management have been increasing.

Trends on revenue growth of the real estate investment firms have been presented in figure 4.7.

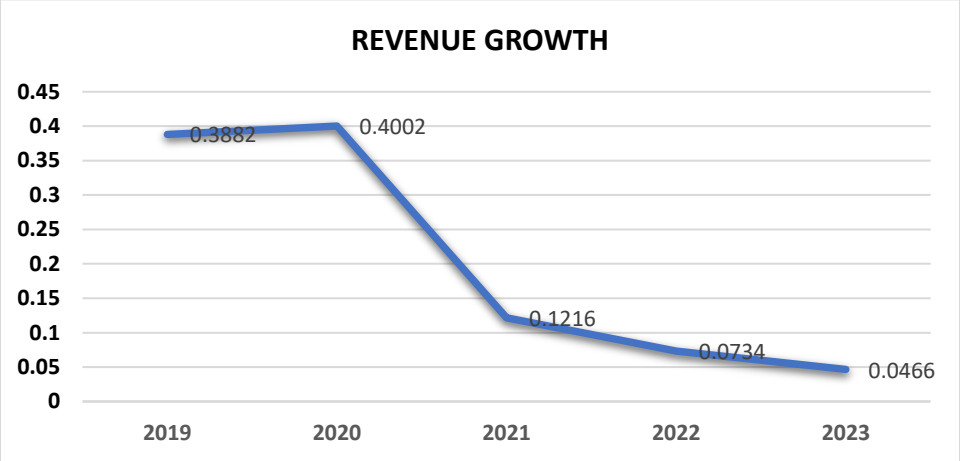


Figure 4: Revenue Growth on of Commercial Real Estate Investment Firms

The findings indicated that the average rate of revenue expansion among Commercial Property Investment Enterprises in 2019 was recorded at 0.3888. The revenue growth however increased to 0.4002 in the year 2020 but decreased to 0.1216 in 2021 and further decreased to 0.0734 in the year 2022. The revenue growth further decreased to 0.0466 in the year 2023. This infers that most of the Commercial Real Estate Investment Firms revenue growth have been decreasing.

Table 5: Growth of Commercial Real Estate Investment Firms

statement	Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly Agree	Mean	Standard deviation
The return on assets has been increasing for the last five years	31.60%	51.10%	5.30%	6.00%	6.00%	2.04	1.08
The company's market share has increased within the last five years.	27.80%	36.10%	5.30%	14.30%	16.50%	2.56	1.45
Revenue growth has been increasing to a great extent for the last five years	32.30%	39.10%	2.30%	9.00%	17.30%	2.40	1.46
The return on investment has been increasing for the last five years	28.60%	49.60%	1.50%	6.00%	14.30%	2.28	1.33
Assets under management have been on the rise	8.30%	5.30%	8.30%	26.30%	51.90%	4.08	1.25
Customers complaints have been declining	17.30%	8.30%	18.00%	40.60%	15.80%	3.29	1.32

Source: Research Data (2025)

The findings revealed that 82.7% of participants disagreed with the assertion that the return on assets had improved consistently over the past five years (mean = 2.04, standard deviation = 1.08), suggesting a downward trend in ROA among most property firms. Similarly, 63.9% of respondents did not agree that their companies' market share had grown during the same period (mean = 2.56, standard deviation = 1.45), indicating a decline in competitive positioning. Moreover, 71.4% opposed the statement that revenue expansion had significantly progressed over five years (mean = 2.40, standard deviation = 1.46), pointing to stagnation or reduction in sales performance.

Additionally, 78.2% of participants rejected the view that return on investment had been steadily rising in recent years (mean = 2.28, standard deviation = 1.33), reinforcing evidence of diminishing profitability. On a more positive note, the same proportion—78.2%—affirmed that assets under management have grown over time (mean = 4.08, standard deviation = 1.25), indicating sustained accumulation of property holdings. Lastly, 56.4% agreed that the frequency of client grievances has declined (mean = 3.29, standard deviation = 1.32), suggesting enhanced customer satisfaction or improved service delivery mechanisms across the sector.

Diagnostic Tests

To verify that the right statistical test was used in the study and prevent erroneous results, regression assumptions were carried out.

Normality Test

To ascertain normalcy, the Kolmogorov-Smirnov test was employed. Data is assumed to be normally distributed when the 2-tailed Asymp. Sig. is greater than.05.

Table 6: Test on Normality

	Statistic	df	Sig.
Heuristic biases	0.903	133	0.082
Prospect biases	0.846	133	0.212
Herding biases	0.711	133	0.324
Market factors driver	0.909	133	0.110
Growth of commercial real estate	0.846	133	0.101
Source: Research Data (2025)			

The significant (Sig) values for every variable in Table 6 above were higher than 0.05. Consequently, the null hypothesis based on the normal distribution was accepted. This demonstrated that the variables and data were dispersed regularly.

Multicollinearity Test

Multicollinearity was tested using VIF. Results are presented in Table 7.

Table 7: Multicollinearity Test

	Tolerance	VIF
Heuristic biases	0.461	2.169
Prospect biases	0.510	1.960
Herding biases	0.406	2.464
Market factors driver	0.629	1.590
mean		2.046

Source: Research Data (2025)

The findings indicated that VIF values ranged from 1.590 (Market factors driver) and 2.464 (Heuristic biases). Furthermore, the overall VIF was 2.046, which was less than 10. Consequently, there was no multicollinearity problem among the independent variables. Results were supported by Tolerance values greater than 0.1.

Linearity Test

The linearity of the data between the Heuristic biases and growth of commercial real estate investment firms was checked by generating a scatter plot and the same is presented in Figure 5.

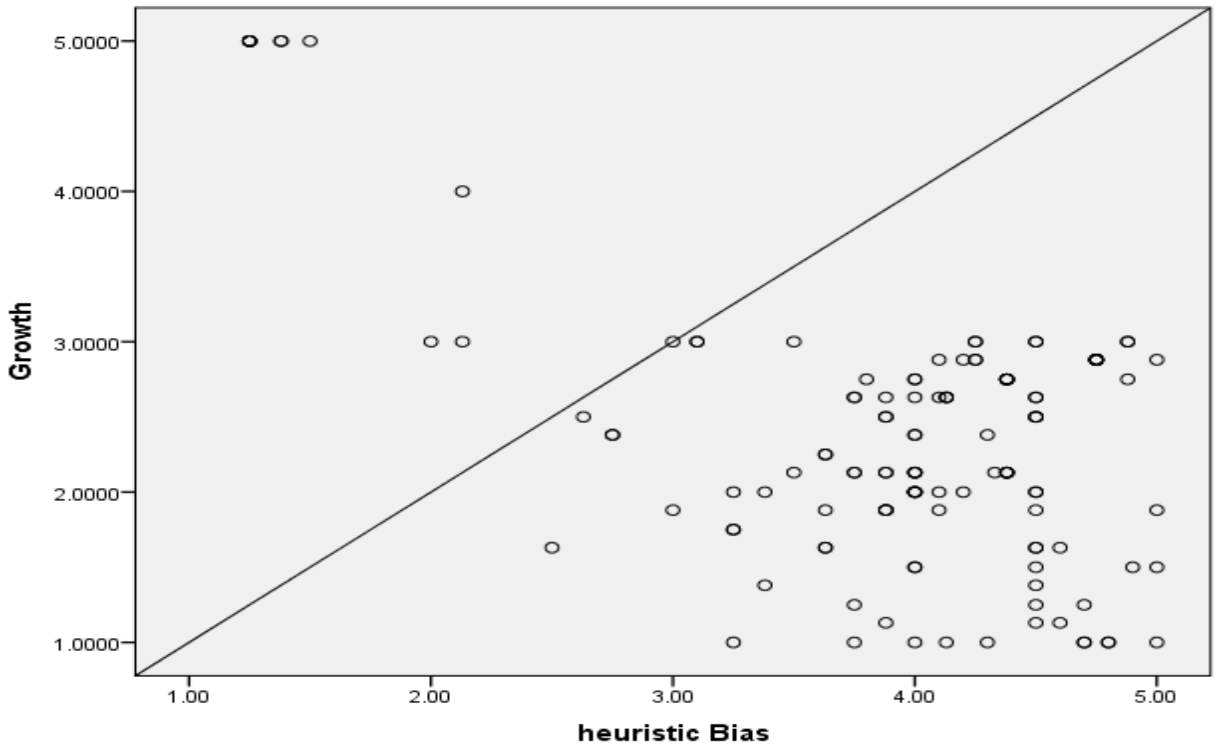


Figure 5: Heuristic biases and growth of commercial real estate investment firms

The analysis indicated that cognitive shortcuts exhibited a direct and adverse association with the expansion of commercial property investment enterprises. The linearity of the data between the prospect biases and growth of commercial real estate investment firms was checked by generating a scatter plot and the same is presented in Figure 6.

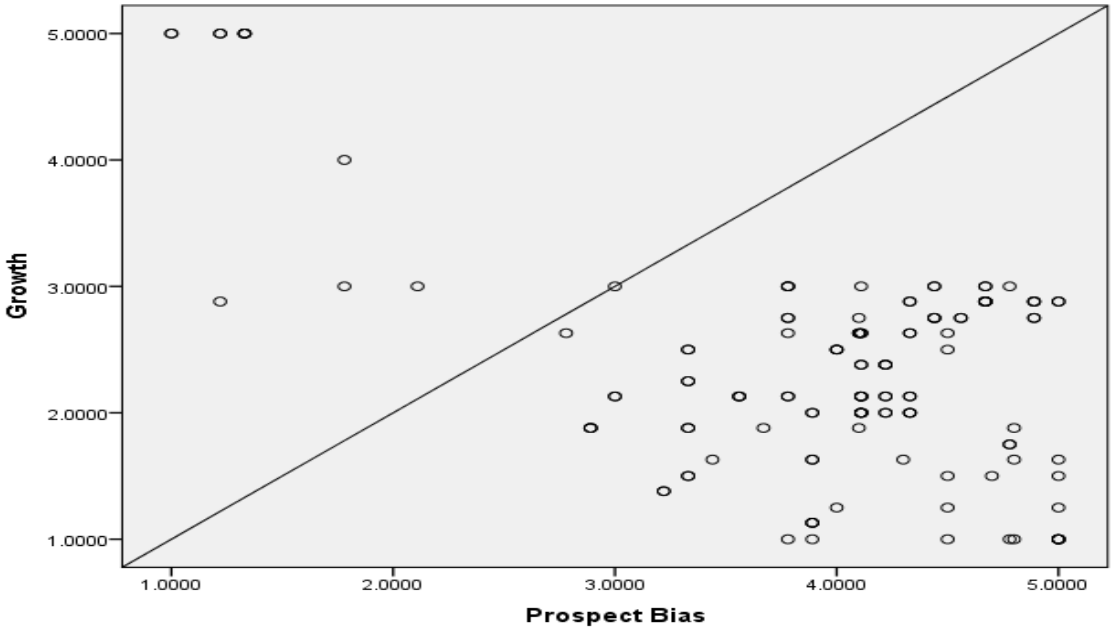


Figure 6: Prospect biases and growth of commercial real estate investment firms

The linearity of the data between the herding biases and growth of commercial real estate investment firms was checked by generating a scatter plot and the same is presented in Figure 7.

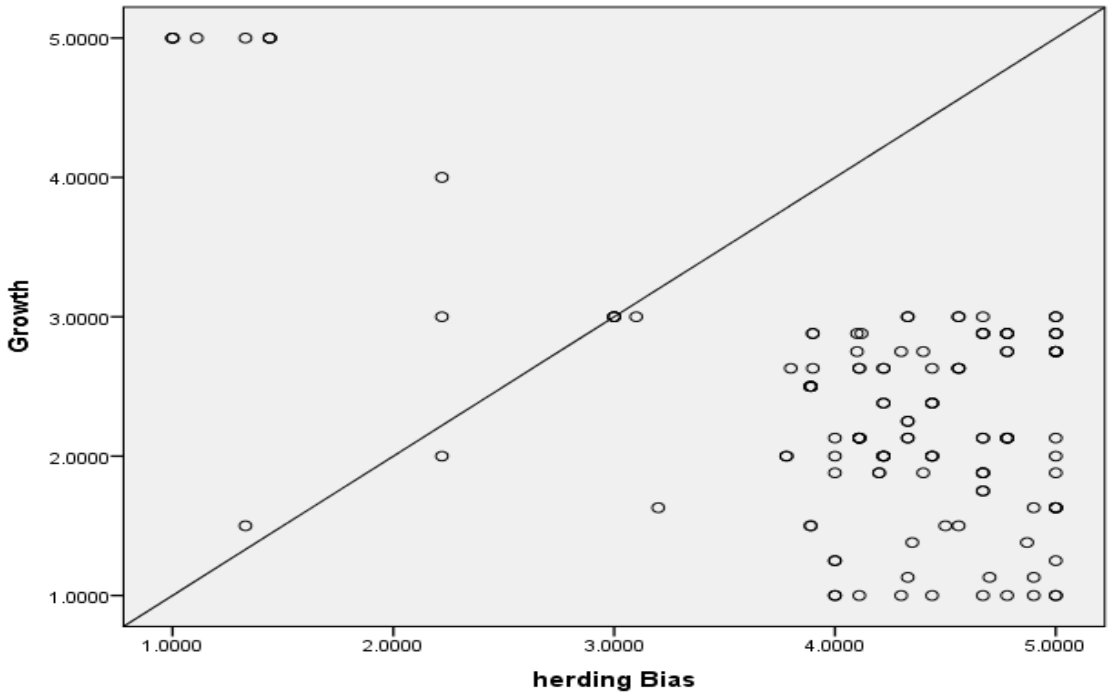


Figure 7: Herding biases and growth of commercial real estate investment firms

The results showed that herding biases had a negative and linear relationship with growth of commercial real estate investment firms The linearity of the data between the market factors and growth of commercial real estate investment firms was checked by generating a scatter plot and the same is presented in Figure 8.

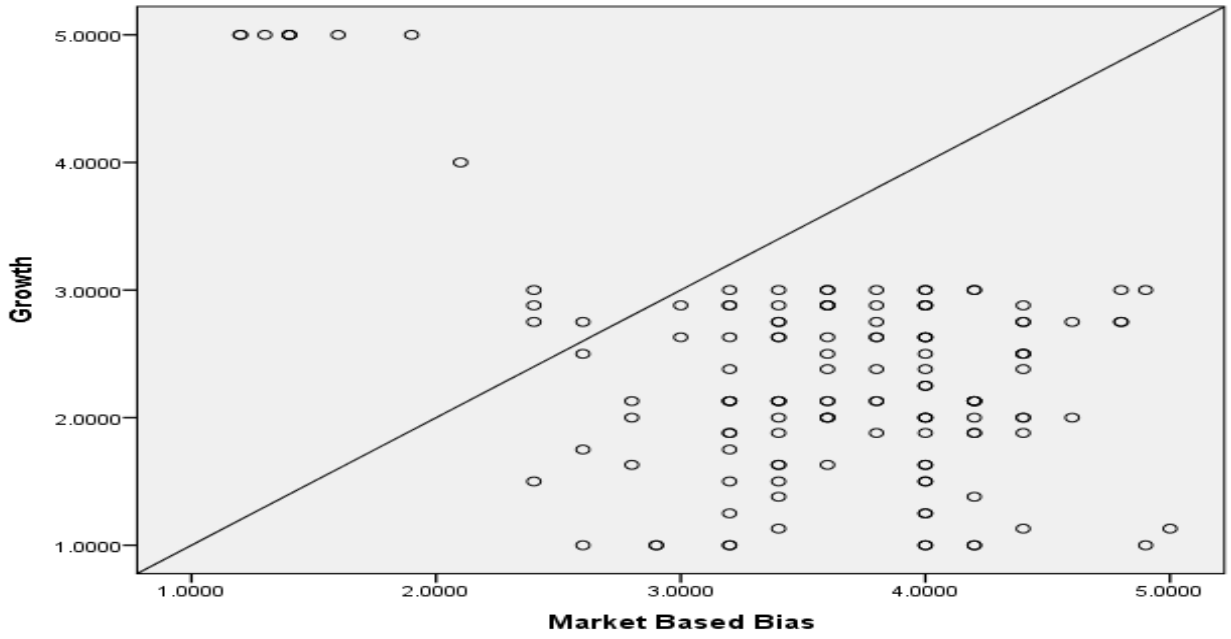


Figure 8: Market based biases and growth of commercial real estate investment firms

The results showed that market-based biases had a negative and linear relationship with growth of commercial real estate investment firms.

Heteroscedasticity Test

Breusch–Pagan test was used to test Heteroskedasticity.

Table 8: Heteroskedasticity Test

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Heuristic biases	0.09	0.124	0.072	0.727	0.469
Prospect biases	0.043	0.117	0.033	0.369	0.713
Herding biases	-0.042	0.102	-0.035	-0.412	0.694
Market factors driver	0.119	0.129	0.081	0.918	0.360

Source: Research Data (2025)

Table 8 presents the findings. Every variable yielded a p-value greater than 0.05, suggesting that heteroskedasticity was absent.

Sampling Adequacy Test

For each of the independent variables, the sample adequacy was evaluated using this test. Values of 0.49 and lower was rejected.

Table 9: Sampling Adequacy

Variables	KMO	Chi square	P value
Heuristic biases	0.832	278.558	0.000
Prospect biases	0.835	282.858	0.000
Herding biases	0.794	176.123	0.000
Market factors driver	0.762	134.554	0.000
Heuristic biases	0.728	170.502	0.000

Source: Research Data (2025)

The results showed that all the KMO of all variables were above 0.7. Therefore, the data of all variables was appropriate.

Inferential Analysis

Correlation Analysis

The impact of behavioural biases on the expansion of commercial real estate investment enterprises, appears to be well established by correlation analysis.

Table 10: Correlation Analysis

		Growth	Heuristic Biases	Prospect Biases	Herding Biases	
Growth	PearsonCorrelation	1				
	Sig.(2-tailed)					
heuristic Biases	PearsonCorrelation	-.601**	1			
	Sig.(2-tailed)	0.000				
Prospect Biases	PearsonCorrelation	-.595**	.640**	1		
	Sig.(2-tailed)	0.000	0.000			
Herding Biases	PearsonCorrelation	-.631**	.680**	.624**	1	
	Sig.(2-tailed)	0.000	0.000	0.000		
Market Based Biases	PearsonCorrelation	-.511**	.441**	.479**	.593**	1
	Sig.(2-tailed)	0.000	0.000	0.000	0.000	

Source: Research Data (2025)

The findings demonstrated that cognitive shortcuts—referred to as heuristic biases—exhibited a notable inverse relationship with the expansion of commercial property investment firms ($r = -0.601$, $p = 0.000$). This suggests that such biases considerably hinder firm growth. These results contrast with those of Gavrilakis and Floros (2022), who identified a positive influence of heuristic traits on individual investors' portfolio strategies and satisfaction levels. Similarly, the analysis revealed that prospect-related behavioral tendencies also showed a significant negative correlation with commercial real estate firm growth ($r = -0.595$, $p = 0.000$), indicating a moderate adverse impact. This aligns with Gikonyo et al. (2018), who observed a statistically negative relationship between prospect biases and investment choices in the property sector. Additionally, there was a

clear negative correlation between herd-driven behavior and firm growth metrics (r = -0.631, p = 0.000), suggesting that crowd-following tendencies may hinder organizational growth. This is in line with Frempong's (2021) findings that herding tendencies and entrepreneurial performance are negatively correlated. Finally, market-driven biases demonstrated a significant and negative correlation with the growth of real estate investment firms (r = -0.511, p = 0.000), indicating that dependence on outside market signals may have a detrimental effect on firm results. These findings support the conclusions of Tajani, Morano, Salvo, and De Ruggiero (2019), who found that market-reliant appraisal models significantly affect real estate firm performance.

Regression Analysis

To determine how the dependent and independent variables relate to one another, regression is utilized.

Table 11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.709a	0.503	0.487	0.653119

Source: Research Data (2025)

The results showed that the R was 0.709. This implies that there was a strong correlation between behavioral biases and the growth of commercial real estate investment firms in Nairobi City County, Kenya. Additionally, 0.503 was the R-squared value. This indicates that behavioral biases account for 50.3% of the variability in the dependent variable, which is the growth of commercial real estate investment.

Table 12: Analysis of Variance

	Sum of Squares	df	Mean Square	F	Sig.
Regression	55.152	4	13.788	32.323	.000b
Residual	54.6	128	0.427		
Total	109.753	132			

Source: Research Data (2025)

Table 12 demonstrated that psychological tendencies served as a strong explanatory variable for the expansion of commercial property investment entities within Nairobi City County, Kenya. This was evidenced by an F value of 32.323 and an associated p-value of 0.000, which is below the standard 0.05 threshold for significance. Accordingly, this indicates that behavioral biases exert a statistically meaningful influence on the growth of commercial real estate investment firms in the specified region, with a confidence level of 95%.

Table 13: Regression of Coefficient

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	5.689	0.307		18.531	0.000
Heuristic Bias	-0.225	0.094	-0.219	-2.393	0.018
Prospect Bias	-0.211	0.082	-0.223	-2.573	0.012
Herding Biases	-0.235	0.093	-0.247	-2.526	0.013
Market Based Bias	-0.184	0.09	-0.161	-2.044	0.043

Source: Research Data (2025)

Regression coefficient analysis revealed that heuristic bias exhibited a statistically significant and negative impact on the expansion of commercial property investment enterprises within Nairobi City County, Kenya ($\beta = -0.225$, $p = 0.018$). This implies that for every unit increase in heuristic bias, the growth trajectory of such firms is expected to decline by 0.225 units. These findings diverge from those reported by Dong et al. (2021), who observed a favorable influence of heuristic traits on portfolio management and satisfaction among individual investors. Further regression outcomes indicated that prospect bias also demonstrated a negative and significant association with firm development in Nairobi City County's commercial real estate sector ($\beta = -0.211$, $p = 0.012$). Specifically, a unit increment in prospect bias correlates with a 0.211-unit reduction in growth. This result aligns with Newell and Marzuki (2022), who documented a detrimental and noteworthy effect of prospect-related cognitive patterns on real estate investment choices. However, it contradicts Nzau (2020), who identified a positive and significant connection between prospect considerations and investment decisions.

Additionally, the analysis showed that herding bias was negatively and significantly related to the progress of commercial real estate investment firms ($\beta = -0.235$, $p = 0.013$). Thus, each unit increase in herd-driven behavior corresponds with a 0.235-unit decrease in firm growth. These findings concur with Tyson et al. (2020), who highlighted the considerable influence of herd mentality and overconfidence on investor behavior, but are inconsistent with Belitski et al. (2021), who found a negative link between herd tendencies and entrepreneurial performance. Finally, it was discovered that behavioral distortions associated to the market had a negative and significant impact on the expansion of commercial real estate businesses ($\beta = -0.184$, $p = 0.043$). Firm development is expected to decrease by 0.184 units for every unit rise in market bias. Hossain and Siddiqua (2022), who found that market-based appraisal models significantly impact real estate enterprises' operational success, corroborate these findings.

The empirical model is as follows;

$Y = 5.689 -0.225X_1-0.211X_{2\ it} -0.235X_3 -0.184X_{4\ it} + \varepsilon_{it}$

Where; Y = Growth of commercial real estate investment firms in Kenya

X_1 = Heuristic biases

X_2 = Prospect biases

$X_{3\ i}$= Herding biases

X_4 = Market factors driven behavior

ε = Error term

CONCLUSION OF THE STUDY

Biases in Heuristics Heuristic biases, or intuitive decision-making patterns, were found to have a statistically significant negative impact on the growth of commercial real estate investment firms. Accurate property appraisals and wise investment decisions depend on the recognition of these trends. Real estate professionals can better predict future market dynamics by utilizing historical data, economic indicators, and consumer behavior-based predictive analytics. This improves their capacity to predict changes in pricing and rental rates, giving them a competitive edge.

Potential biases related to prospects were also found to have a negative and significant impact on firm growth in the real estate market of Nairobi City County. The inconsistency frequently seen in individual decision-making when navigating uncertain risk scenarios is highlighted by this result. Interestingly, the psychological pain of losses is typically greater than the pleasure of comparable gains. As a result, Kenyan real estate investors typically show caution when considering possible profits but act risk-takingly when trying to recoup perceived losses.

Biases in herding the study found that herding biases, or imitation-based decision-making tendencies, significantly and negatively impacted the expansion of real estate investment companies. This type of behavior is typified by investors imitating peer or market movements rather than using their own discretion and objective knowledge. Furthermore, it seems that real estate stakeholders frequently have more faith in recommendations from friends or coworkers than in data provided by licensed financial advisors or brokers.

Biases Based on the market, the results also showed that the commercial property investment sector's business growth was significantly hampered by reliance on behavioral distortions driven by the market. Trading activity frequently shows disproportionate volumes of purchases and sales that lack a clear rationale, indicating the existence of market inefficiencies even though rational investors are supposed to base their decisions on transparent market data. Furthermore, a lot of commercial real estate investors use their profits from real estate endeavors to fund temporary projects, which could further limit their ability to grow in the long run.

RECOMMENDATIONS OF THE STUDY

Real estate managers should be aware of common biases such as availability, anchoring, and confirmation bias and put countermeasures in place to lessen the impact of heuristic biases in the field. This entails applying data-driven analysis, looking for different viewpoints, and being aware of emotional factors. Real estate managers should be mindful that past achievements and setbacks may be mistakenly taken as proof of upcoming patterns, which could cause them to overestimate risks or become overconfident. Understand that historical data might not be a reliable indicator of the future.

Additionally, the study advised managers to be aware of the propensity to place too much trust in preliminary data, even when it isn't the most pertinent. They ought to promote a more impartial evaluation of the state of the market today and its prospects for the future. Additionally, people tend to overestimate their abilities and underestimate risks, which real estate managers should be aware of. To reduce the chance of overconfidence, promote the pursuit of varied viewpoints and opinions. They should continue to communicate openly and transparently about how decisions are made. This fosters trust and makes it possible to comprehend the reasoning behind decisions with greater knowledge.

Together with other individual and institutional stakeholders, the EARB, which is in charge of monitoring estate agency operations in Kenya, can make use of these insights to raise investor awareness and curb speculative trading in the nation's real estate markets. As a result, the study recommends that the government publish regular reports outlining the performance trends in the industry through the Ministry of Planning in coordination with real estate experts. By lowering reliance on arbitrary market sentiment or false information, these reports would serve as trustworthy reference points for current and potential investors, assisting them in making well-informed decisions.

In order to lessen the negative effects of unforeseen events like real estate bubbles, which have upset more established markets, it is also advised that the Ministry of Planning conduct regular assessments of systemic risks in the real estate industry. The report also urges the creation of a regulatory body whose job it is to create frameworks for oversight and strategic investment policies. These recommendations would help investors find appropriate real estate market niches to target and help them establish niche market positions. Additionally, the proposed rules would support the government in enforcing tax laws and guaranteeing strong governance throughout the real estate sector.

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