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Representativeness Bias, Investment Decisions, And Financial Literacy Of Selected Small And Medium Enterprises In Nairobi County

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Abstract
Investment decisions are significantly affected by behavioral biases, potentially leading to suboptimal financial outcomes. Small and medium enterprises often make investment decisions based on heuristics like representativeness bias, leading to overestimation of asset performance and suboptimal financial outcomes. Given the critical role of financial literacy in mitigating such biases and promoting rational decision-making, there is a need for research to assess their effect on investment decisions. This study examined the mediating role of financial literacy in the relationship between representativeness bias and investment decisions of selected small and medium enterprises in Nairobi County. This study was based on Behavioral Portfolio Theory, Heuristics Theory, and Human Capital Theory. This study employed a positivist research philosophy utilizing a cross-sectional and survey research design. A proportionate stratified random sampling was used to select a sample of 426 from 18,872 small and medium firms registered with the Micro and Small Enterprise Authority. The target respondents from each enterprise selected, managers or proprietors. Statistical Package for Social Sciences with Hayes Model 4 were used in data processing and analysis. Descriptive and inferential statistics were used to analyze data collected from the 376 respondents. Pearson correlation analysis revealed a weak statistically significant positive association between representativeness bias and financial literacy ($r = 0.215$, $p = 0.000$), as well as between representativeness bias and investment decisions ($r = 0.149$, $p = 0.004$). Financial literacy showed a strong positive connection with investing decisions ($r = 0.981$, $p = 0.000$). Mediation analysis indicated that representativeness bias adversely affected investment decisions ($\beta = -0.0939$, $p < 0.05$), whereas financial literacy attenuated this effect (indirect impact: 0.2928, $p < 0.001$). Bootstrap calculations corroborated these findings. The study concluded that financial literacy is essential in mitigating representativeness bias and advocated for structured decision-making frameworks and training programs for SMEs to improve their investment decisions.

Keywords: *Representativeness Bias, Behavioral Biases, Investment Decisions, Financial Literacy, Small and Medium Enterprises*

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I. Introduction

Cognitive biases frequently affect investment decisions, resulting in systematic judgment errors and financial mismanagement. Representativeness bias is a cognitive heuristic wherein investors presume that historical trends forecast future results or that a limited sample accurately reflects a larger trend (Polychronakis, 2023). This bias often causes investors to overrate the prospects of stocks or business endeavors based on perceived resemblances to previous triumphs instead of basic examination (Polychronakis, 2023). Consequently, small and medium-sized firms (SMEs), who depend significantly on judicious capital allocation for sustainability, are more susceptible to its impacts. Small and medium-sized enterprises (SMEs) are pivotal in global economies, accounting for more than 50% of total employment and nearly 40% of GDP in emerging nations (World Bank, 2023). In Kenya, SMEs contribute 40% to the GDP and create 30% of yearly employment opportunities (Kenya National Bureau of Statistics, 2022; Wakiaga, 2022). Understanding the factors that influence SME investment decisions is essential for promoting financial stability and growth, given their economic importance.

Cognitive biases adversely affect investment behavior, whereas financial literacy can act as a moderating or mediating element, improving investors' capacity to evaluate financial risks objectively. Financial literacy involves comprehending financial ideas and adeptly applying them in practical financial management (Warmath & Zimmerman, 2019). It is vital in the strategic investment decisions of SMEs, encompassing inventory, technology, and marketing (Bell & Blake, 2020). Individuals with financial literacy are more adept at assessing investment opportunities using objective financial metrics instead of subjective or deceptive trends, hence diminishing the probability of biases influencing their decision-making (Seraj et al., 2022). The 2014 Global

Financial Literacy Survey conducted by Standard & Poor's, as referenced by Klapper and Lusardi (2020), indicated a global financial literacy rate of merely 33%, exhibiting considerable regional differences. Advanced economies, including the United States, averaged 57%, whilst major emerging economies averaged 28%. Financial illiteracy in Africa constitutes a substantial obstacle, leading to suboptimal investment choices and business failures (Pulka & Gawuna, 2022). This underscores the necessity of examining financial literacy's impact on alleviating investment biases, especially within SMEs in Kenya.

This study aims to investigate the mediating role of financial literacy in the link between representativeness bias and investment decisions among SMEs in Nairobi County, Kenya. Although current research mostly examines financial literacy or cognitive biases in isolation, there is a scarcity of studies exploring the interaction between financial literacy and representativeness bias in shaping investing decisions. Comprehending this mediating function is crucial for formulating financial education initiatives and regulations that promote rational investing practices among SMEs (Lusardi, 2019). The results will enhance the behavioral finance literature and guide policymakers, financial educators, and SME proprietors in creating training programs that reduce biases and foster educated investment decisions. Targeted financial literacy programs enable SMEs to optimize capital allocation, mitigate risks, and bolster overall firm sustainability, hence promoting long-term economic growth

II. Literature Review

Heuristics Theory explains representativeness bias which is the independent variable, Behavior Portfolio Theory addresses the dependent variable, investment decisions while Human Capital Theory explains the mediating role of financial literacy. The Heuristics Theory, developed by Amos Tversky and Daniel Kahneman in 1973, is grounded in Herbert Simon's earlier concept of bounded rationality (Cati, 2022). It suggests that individuals utilize cognitive shortcuts, known as heuristics, to streamline decision-making in complex scenarios. Heuristics facilitate rapid decision-making but simultaneously introduce systematic biases, including representativeness, availability, and anchoring. Heuristics reduce cognitive load and decision-making time; however, they may result in errors by replacing complex evaluations with simpler alternatives (Doyle, Ojiako, Marshall, Dawson & Brito, 2021).

Heuristics theory posits that decision-makers encounter cognitive limitations and that heuristics serve as adaptive mechanisms to manage information overload. Essential assumptions encompass attribute substitution, effort minimization, and swift, efficient decision-making. Nonetheless, its limitations arise from dependence on individual judgment, which does not possess universal applicability (Ahmad, Shah & Abbass, 2021). Biases can distort perceptions and result in suboptimal investment decisions, particularly in uncertain contexts. Schirrmeister, Göhring, and Warnke (2020) contend that the theory does not provide clear guidelines regarding the appropriate use of heuristics and the mitigation of biases. Heuristics Theory, despite its limitations, explains the behavioral biases present in SME investment decisions within Nairobi County.

On the other hand, Behavioral Portfolio Theory (BPT), proposed by Shefrin and Statman in 2000, contests the conventional belief that investors are exclusively focused on maximizing returns. BPT proposes that investors build portfolios that reflect psychological preferences and behavioral biases, creating layered structures with varying risk levels (Majewski & Majewska, 2022). The pyramid framework in BPT delineates the allocation of resources by individuals between low-risk investments aimed at security and high-risk investments intended for potential wealth accumulation. This approach acknowledges that investor behavior is influenced by both rational decision-making and emotional and cognitive factors. BPT incorporates aspects of investor psychology into portfolio construction, distinguishing it from traditional portfolio theories (Akkaya, 2021).

BPT is based on several key assumptions, including mental accounting, which posits that investors classify their investments into separate mental categories, potentially resulting in suboptimal decision-making (Majewski & Majewska, 2022). The concept also recognizes bounded rationality, noting that investors' decisions are limited by cognitive constraints and emotional factors. Critics contend that the interdependence among portfolio layers is frequently neglected, which impacts the overall distribution of wealth (Akkaya, 2021). Harrison and Ross (2023) assert that the theory's dependence on individual preferences constrains its general applicability. Despite these limitations, BPT remains pertinent to this study as it explains the effect of behavioral biases on SME investment decisions.

Human Capital Theory (HCT), formulated by Schultz and Becker in the 1960s, highlights the significance of education, training, and health in driving economic advancement (Hung & Ramsden, 2021; Davis (2022). Schultz (1961) cited in Nadezhina and Avduevskaia (2021) conceptualized human capital as an investment that increases productivity, whereas Becker elaborated on this by emphasizing the significance of education and training in fostering economic growth. Human capital is defined as the knowledge, skills, abilities, and health traits that individuals acquire through education and experience, which are essential for enhancing labor productivity and promoting economic development (Hung & Ramsden, 2021; Davis, 2022). It posits that individuals engage in rational decision-making regarding these investments, anticipating future economic and

societal advantages. Financial literacy is regarded as a significant component of human capital that affects economic decision-making.

HCT has been criticized for emphasizing economic factors at the expense of social and cultural dimensions of human development (Marginson, 2019). Critics contend that the emphasis on quantitative metrics, like years of education, reduces the intricate relationship between education and economic outcomes to a simplistic framework (Kuzminov et al., 2019). Holborow (2021) critiques the assumption that individuals consistently make rational decisions regarding human capital investment, highlighting the influence of non-economic factors on behavior. This study examined the relevance of HCT in explaining the mediating role of financial literacy in the relationship between behavioral biases and investment decisions among selected SMEs in Nairobi County.

The empirical research on financial literacy, representativeness biases, and investment decisions offers a complex view of how these elements influence investor behavior. Paramita and Henny (2022) emphasize the beneficial impact of financial literacy; encompassing financial attitudes, knowledge, and behavior, on investment decisions, consistent with the idea of planned behavior. Likewise, research conducted by Suresh (2021) and Weixiang et al. (2022) confirms that financial literacy markedly mitigates the influence of cognitive biases, hence improving rational decision-making. Conversely, Kasoga's (2021) research indicates that financial literacy exerts a minimal moderating influence on heuristic biases and risk tolerance within the Tanzanian stock market. This disparity underscores the contextual aspect of financial literacy's influence, wherein cultural, market-specific, and behavioral factors significantly shape investing decisions. Furthermore, the sample restrictions in numerous studies, including Paramita and Henny's dependence on non-probability sampling and Joharudin's concentration on students, elicit questions regarding generalizability.

Behavioral biases, notably representativeness bias, overconfidence, and herd mentality, have been extensively examined as distorting influences in financial decision-making. Irshad, Badshah, and Hakam (2016) present evidence from the Islamabad Stock Exchange indicating that investors excessively depend on historical performance to forecast future results, resulting in poor portfolio decisions. This study corroborates the work of Safitri and Hariyanto (2023), who illustrate that prior investment experiences strengthen representativeness bias, hence affecting subsequent financial decisions. Likewise, Seraj et al. (2022) and Suresh (2021) emphasize the critical influence of overconfidence on investing decisions, demonstrating how heuristic biases cause investors to diverge from objective financial assessment. Notwithstanding these insights, research such as Natasya et al. (2022) indicates that specific biases, including the disposition effect and financial literacy, do not consistently exert a significant influence, implying that behavioral biases function in intricate and occasionally unpredictable manners contingent upon demographic and contextual variables.

Numerous studies endeavor to amalgamate financial literacy with behavioral biases to comprehend their collective influence on investment decisions. Özen & Ersoy (2019) and Weixiang et al. (2022) assert that financial literacy can alleviate the impact of cognitive biases, hence strengthening the idea that enhanced financial understanding fosters more rational investment behavior. The research conducted by Kasoga (2021) and Mbere and Safitri (2024) contests this premise, indicating that financial literacy does not inherently surpass cognitive biases or risk tolerance in decision-making processes. This contradiction suggests that although financial literacy is essential, its efficacy may be contingent upon the extent of information, experience, and external market factors. Moreover, methodological discrepancies among studies, including differing sample sizes, statistical methods (e.g., SEM, PLS-SEM, and MRA), and geographic focal points, hinder the direct comparability of findings.

III. Methodology

This research adopted a positivist philosophy, emphasizing objective and empirical knowledge derived from scientific observation and statistical analysis (Saunders, Lewis & Thornhill, 2019). A cross-sectional survey design was employed to collect data at a specific point in time, providing an overview of the relationships between behavioral biases and investment decisions among selected SMEs in Nairobi County (Mohajan, 2018). The study included owners and senior managers of SMEs involved in decision-making, using data from Nairobi's 18,872 registered SMEs, with the trade sector constituting the largest segment. The proportionate stratified random sampling technique was utilized to select 426 respondents from the trade and service sectors, ensuring sufficient representation. Data were collected using a semi-structured questionnaire designed on a Likert scale, with items assessing availability bias and investment decisions. The data were analyzed through descriptive and inferential statistics.

IV. Results And Discussion

A total of 376 questionnaires were duly completed and returned out of the total 426 originally sent translating to 88.2% Reliability results indicated a Cronbach alpha showed that all the variables met the 0.700 threshold as representativeness bias recorded 0.954, financial literacy recorded 0.987 and investment decisions

recorded 0.986. Both representativeness bias ad financial literacy had 10 statements while investment decisions had 12 statements which were rated using a fie point Likert.

Descriptive statistics were conducted on the independent variable. The results are displayed in Table 1. Data were collected utilizing a five-point Likert scale ranging from 1 (Never) to 5 (Always). Data were collected utilizing a Likert scale. The findings indicated that SMEs primarily relied on historical performance for decision-making, as reflected by a mean score of 1.540 (standard deviation = 0.596). While historical trends did not directly impact decision-making, SMEs employed past performance to forecast future outcomes. Clients in SMEs demonstrated a notable dependence on stereotypes and superficial traits in their business decision-making, as reflected by a mean score of 2.646 (standard deviation = 1.349), suggesting that overgeneralization affected their assessments. Customers often associate a business's positive reputation with the quality of its products and services (mean = 1.479, standard deviation = 0.561), underscoring the importance of perception relative to actual performance. A mean score of 2.311 (standard deviation = 1.459) indicates that SME consumers favored evaluating situations based on observable characteristics rather than intrinsic probabilities. The expectations of SMEs were influenced by previous market performance, indicated by a mean score of 2.298 (standard deviation = 1.018), highlighting their reliance on historical trends for predicting future returns. Their tendency to focus on short-term market trends was evident in their preference for stocking goods with recent high returns (mean = 1.391, standard deviation = 0.515) while avoiding underperforming products (mean = 1.455, standard deviation = 0.520). Small and medium-sized enterprises occasionally base their decisions on artificial patterns instead of empirical data, as indicated by a mean of 1.851 (standard deviation = 0.779).

Research findings demonstrate that representativeness bias significantly influences decision-making processes in small and medium-sized enterprises and their customers. Decisions were often shaped by heuristics, historical trends, and superficial characteristics rather than thorough analysis. This cognitive bias can lead to inaccurate evaluations in investment and corporate strategy, potentially impacting long-term sustainability and profitability. The results support previous studies by Kharisma and Cahyaningdyah (2022) and Fitri and Cahyaningdyah (2021), indicating that representativeness bias affects overconfidence, which in turn influences decision-making. This study diverges by demonstrating that SMEs rely on prior performance and market trends to inform their decisions, emphasizing their reliance on heuristics and experiential learning instead of statistical analysis. The study supports the findings of Rasheed et al. (2018), indicating that representativeness bias, along with availability bias, leads to deviations from rational decision-making. The studies by Jamshidi et al. (2019) and Dias et al. (2019) indicate that SMEs often engage in trend-driven behaviors rather than long-term strategic planning, highlighting the impact of cognitive biases on business operations.

Table 1 Representativeness Bias Descriptive Statistics

N = 376	Mean	Standard Deviation
SMEs use past performance in future decision making	1.540	.596
Customers in SMEs over-rely on stereotypes/labels/casts in business	2.646	1.349
Recent business success tendency to continue into the future prevents/hampers decision making	1.487	.551
Customers tend to attribute good characteristics of a business directly to good characteristics of its products and services	1.479	.561
Customers assess situations based on superficial characteristics rather than underlying probabilities	2.311	1.459
SMES consider recent past returns to be representative of what they can expect in the future	2.298	1.018
SMES assume that there is a significant and positive association between their expected return and past market returns	2.423	1.038
SMEs tend to sell goods/offer services that have recently enjoyed abnormal/very high returns	1.391	.515
SMEs tend to buy or offer 'hot' or 'trendy' goods or services to avoid those that have performed poorly in the market	1.455	.520
SMEs form judgements based on patterns that are simply random and not representation of facts	1.851	.779

Additionally, Table 2 presents descriptive statistics on financial literacy indicators collected using Likert scale, which ranges from 1 (Strongly Agree) to 5 (Strongly Disagree). The study findings revealed that firms exhibited a considerable degree of involvement in financial performance evaluations, evidenced by the highest mean score for the regular analysis of profitability and financial performance (mean = 3.295, standard deviation = 1.113). Budget modification (mean = 3.239, standard deviation = 1.023) and comparative expense analysis (mean = 3.200, standard deviation = 1.157) indicated moderate financial planning endeavors. The initiatives for cost reduction (mean = 2.221, standard deviation = 1.169) and the enactment of cost management policies (mean = 2.144, standard deviation = 1.132) demonstrated a heightened dedication to systematic cost management measures. Nonetheless, diminished mean scores in tax regulation awareness (mean = 2.287, standard deviation = 1.062) and the pursuit of expert tax guidance (mean = 2.330, standard deviation = 1.082) indicated elevated levels of concurrence, signifying enhanced financial literacy in tax-related issues. The results aligned with previous studies by Seraj et al. (2022) and Suresh (2021), which highlighted the significance of financial literacy in influencing financial decision-making and reducing behavioral biases.

The findings indicated that enterprises had considerable financial literacy, especially in tax understanding, cost management techniques, and financial planning. This corresponds with the research conducted by Natasya et al. (2022), which shown that overconfidence bias and risk aversion substantially impacted investment decisions, underscoring the significance of financial literacy in alleviating biases. Joharudin (2023) highlighted the significance of financial literacy in mitigating irrational investment behaviors, whilst Özen and Ersoy (2019) discovered that those with greater financial literacy had reduced vulnerability to cognitive biases. These findings underscore the necessity for systematic investment plans and risk diversification measures. Suresh (2021) and Weixiang et al. (2022) further illustrated that elevated financial literacy fortifies resilience against heuristic biases, emphasizing the importance of financial education in enhancing investment decision-making.

Table 2 Financial Literacy Descriptive Statistics

N = 376	Mean	Standard Deviation
I do a comparative analysis between actual expenses and budgeted amounts in order to discover discrepancies.	3.200	1.157
I consistently modify my budget to correspond with the requirements of the firm.	3.239	1.023
I consistently evaluate and modify my financial objectives in order to align with evolving business conditions.	3.154	1.082
I conduct an evaluation of any risks and uncertainties that have the potential to affect my cash inflow and outflow.	3.069	1.069
I proactively pursue chances to reduce costs/expenditures in business operations.	2.221	1.169
I have implemented a series of policies and practices aimed at cost management and enhancing profitability.	2.144	1.132
I proficiently oversee the management of cash flow in order to fulfil immediate corporate requirements.	2.678	1.098
I consistently do an analysis of my business's profitability and financial performance.	3.295	1.113
I know and understand tax regulations that pertain to my firm.	2.287	1.062
I am in search of expert guidance in order to adhere to tax legislation and maximize tax advantages.	2.330	1.082

Additionally, the descriptive statistics on investment decisions displayed in Table 3 were obtained via a five-point Likert scale, ranging from 1 (Strongly Agree) to 5 (Strongly Disagree). Research findings indicated that organizations acknowledged the influence of the competitive landscape on investment decisions (mean = 2.327, standard deviation = 1.002) and sought to allocate resources prudently (mean = 2.750, standard deviation = 1.187), despite facing challenges in discerning suitable capital for investment (mean = 2.827, standard deviation = 1.220). The assessment of investment time was prominent (mean = 2.968, standard deviation = 1.275), although the criteria for investment viewpoints were articulated with variability (mean = 2.790, standard deviation = 1.301). Businesses aligned their investments with long-term objectives (mean = 2.197, standard deviation = 1.149) and consistently evaluated investment goals (mean = 2.130, standard deviation = 1.295); however, adherence to structured investment strategies was irregular (mean = 3.261, standard deviation = 1.178). Companies demonstrated the capacity to adjust strategies in response to market volatility (mean = 2.668, standard deviation = 1.184). Risk assessment was essential to decision-making, as companies carefully analyzed risk-return profiles (mean = 1.854, standard deviation = 0.841) and consistently employed diversification strategies (mean = 1.923, standard deviation = 0.821), including sectoral diversification (mean = 2.112, standard deviation = 0.929). The results indicate that while businesses recognized the need of strategic capital allocation and risk assessment, inconsistencies in structured investment processes and definitions of investment horizons may have influenced long-term company objectives. The ability to adjust strategies in response to market fluctuations highlighted a flexible investment approach. Hervé et al. (2019) argued that social networks mitigated information asymmetry and influenced investor behavior, a factor overlooked in this analysis. Patil and Bagodi (2021) emphasized the importance of financial indicators and insider information in investment decisions, while Musoke et al. (2022) highlighted financial policies, such as dividend and working capital management, which were not considered in this study. Musoke et al. assert that judicious investment choices enabled corporate growth, aligning with the study's conclusions about investment coherence with long-term objectives.

Table 3 Investment Decisions Descriptive Statistics

N = 376	Mean	Standard Deviation
The competitive landscape heavily influences our investment choices.	2.327	1.002
Our business carefully plans the amount of capital allocated to each investment.	2.750	1.187
We often face challenges in determining the appropriate amount of capital for investments.	2.827	1.220
We regularly evaluate the optimal duration for each investment we make.	2.968	1.275
Our business has a clear policy regarding the investment horizon for different projects.	2.790	1.301
Our investments are always aligned with our long-term business objectives.	2.197	1.149
We frequently review and adjust our investment objectives to match current business needs.	2.130	1.295
Our business follows a well-defined investment strategy for all investment decisions.	3.261	1.178
We adapt our investment strategies based on changing market conditions.	2.668	1.184
We thoroughly assess the risk and return profile of investments before committing funds.	1.854	.841
Our business investment is diversified to minimize risk.	1.923	.821
We believe in spreading our investments across different sectors to achieve better risk management	2.112	.929

Correlation analysis results presented in Table 4 show that Pearson correlation coefficient between representativeness bias and financial literacy was 0.215 (p = 0.000), suggesting a weak statistically significant positive correlation. Representativeness bias and investment decisions exhibited a positive correlation of 0.149 (p = 0.004), indicating that representativeness bias has a minor effect on investment decisions. Financial literacy demonstrated a significant positive correlation with investment decisions (r = 0.981, p = 0.000), underscoring its essential influence on investment choices. The findings highlight the significance of financial literacy in reducing the impact of representativeness bias and improving investment decision-making.

Table 4 Correlation Analysis Results

		Representativeness bias	Financial literacy	Investment decisions
Representativeness bias	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	376		
Financial literacy	Pearson Correlation	.215**	1	
	Sig. (2-tailed)	.000		
	N	376	376	
Investment decisions	Pearson Correlation	.149**	.981**	1
	Sig. (2-tailed)	.004	.000	
	N	376	376	376
**. Correlation is significant at the 0.01 level (2-tailed).				

The mediation effect of financial literacy on the relationship between representativeness bias and investment decisions of selected SMEs in Nairobi County are presented in Table 5.

Table 5 Representativeness Bias, Financial Literacy and Investment Decisions Interaction

Y = investment decisions, X = representativeness bias, M = financial literacy, N=376

Model Summary

R	R-sq	MSE	F	df1	df2	p
.2085	.0435	1.0383	16.9917	1.0000	374.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	2.1651	.1540	14.0618	.0000	1.8624	2.4679
Representativeness bias	.2924	.0709	4.1221	.0000	.1529	.4319

Outcome Variable: Investment decisions

Model Summary

R	R-sq	MSE	F	df1	df2	p
.9828	.9659	.0377	5276.3751	2.0000	373.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	-.0897	.0363	-2.4729	.0138	-.1609	-.0184
Representative bias	-.0939	.0138	-6.7942	.0000	-.1210	-.0667
Financial literacy	1.0012	.0098	101.6660	.0000	.9818	1.0205

Direct and Indirect Effects of X on Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
-.0939	.0138	-6.7942	.0000	-.1210	-.0667

Indirect effect(s) of X on Y:

Effect	BootSE	BootLLCI	BootULCI
Financial literacy	.2928	.0744	.1421	.4334

Map of column names to model coefficients:

	Conseqnt	Antecdnt
Column 1	Representativeness bias	constant
Column 2	Representativeness bias	Representativeness bias
Column 3	Investment decisions	constant

Column 4 Investment decisions Representativeness bias
Column 5 Investment decisions Financial literacy

Bootstrap Results for Regression Model Parameters
Outcome variable: Financial Literacy

Coeff	BootMean	BootSE	BootLLCI	BootULCI
constant	2.1651	2.1676	.1982	1.7883 2.5620
Representativeness bias	.2924	.2914	.0749	.1419 .4349

Outcome variable: Investment decisions

Coeff	BootMean	BootSE	BootLLCI	BootULCI
constant	-.0897	-.0908	.0353	-.1612 -.0220
Representativeness bias	-.0939	-.0935	.0124	-.1177 -.0696
Financial literacy	1.0012	1.0013	.0081	.9848 1.0169

Level of confidence for all confidence intervals in output:95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals:5000

The preliminary model's findings indicated a coefficient of determination (R^2) of 0.0435, suggesting that representativeness bias accounted for 4.35% of the variance in investment decisions. The coefficient for representativeness bias was 0.2924 ($p < 0.05$), with a confidence interval ranging from 0.1529 (LLCI) to 0.4319 (ULCI). A significant correlation exists between representativeness bias and investment decisions, where individuals employing heuristics rely on perceived patterns rather than rational analysis, leading to suboptimal outcomes.

The second model, which employed representativeness bias and financial literacy as predictors and investment decisions as the dependent variable, produced a coefficient of determination (R^2) of 0.9659. This demonstrates substantial explanatory power, as these factors account for 96.59% of the variance in investment decisions. The findings indicate a significant positive correlation between financial literacy and investment decisions (1.0012, $p = 0.000 < 0.05$), implying that individuals with higher financial literacy are more adept at making informed investment choices. The coefficient for representativeness bias in this model was -0.0939 ($p = 0.000 < 0.05$), indicating that while representativeness bias influenced investment decisions, its effect was negative when financial literacy was considered. This indicates that financial literacy reduces the negative impact of representativeness bias, facilitating more rational investment decisions.

The mediation study revealed that the indirect effect of representativeness bias on investment decisions via financial literacy was 0.2928, with a 95% confidence interval spanning from 0.1421 (LLCI) to 0.4334 (ULCI). The absence of zero in the confidence interval suggests that financial literacy significantly mediated the relationship between representativeness bias and investment decisions. This indicates that individuals susceptible to representativeness bias often exhibited low financial literacy, negatively impacting their investment choices. The direct effect of representativeness bias on investment decisions (-0.0939, $p = 0.000 < 0.05$) is less significant than its indirect effect mediated by financial literacy, underscoring the critical role of financial education in improving investment outcomes.

The bootstrapped estimates confirm the reliability of these findings. The coefficient for representativeness bias in the model predicting financial literacy was 0.2924 (BootMean = 0.2914, BootSE = 0.0749, BootLLCI = 0.1419, BootULCI = 0.4349, $p < 0.05$), demonstrating a significant relationship between representativeness bias and financial literacy. The investment decisions model demonstrated a bootstrapped coefficient of 1.0012 for financial literacy (BootMean = 1.0013, BootSE = 0.0081, BootLLCI = 0.9848, BootULCI = 1.0169, $p < 0.05$), indicating a significant direct effect. The mediating role of financial literacy was supported by its bootstrapped effect (BootMean = 0.2928, BootSE = 0.0744, BootLLCI = 0.1421, BootULCI = 0.4334, $p < 0.001$). This indicates that while financial literacy significantly enhances investment decision-making, it is essential to address representativeness bias to improve financial outcomes.

The linear equation for the direct effect of representativeness bias (X) on investment decisions (Y) can be represented as:

$Y = \beta 0 + \beta 1RB + \epsilon$

$Y = -0.0897 - 0.0939\ RB + \epsilon$

Where:

$\beta 0 = -0.0897$ is the constant for investment decisions.

$\beta 1 = -0.0939$ is the coefficient for representativeness bias (direct effect) on investment decisions.

RB represents the coefficient for representativeness bias.
ϵ represents the error term.

The linear equation for the direct effect of representativeness bias (X) on financial literacy (M) is as follows:
$M = aRB + \epsilon$
$M = 0.2924RB + \epsilon$
Where:
a=0.2924 is the effect of representativeness bias on financial literacy.
The direct effect of financial literacy (M) on investment decisions (Y) is given by:
$Y = bFL + c'RB + \epsilon$
$Y = 1.0012FL - 0.0939RB + \epsilon$
Where:
b = 1.0012 is the effect of financial literacy on investment decisions.
$c' = -0.0939$ is the direct effect of representativeness bias on investment decisions after controlling for financial literacy.
The indirect effect is calculated as:
$a \times b = 0.2924 \times 1.0012 = 0.2928$
The total effect of representativeness bias on investment decisions is:
$c' + (a \times b) = -0.0939 + 0.2928 = 0.1989$

The final linear equation for the effect of representativeness bias and financial literacy on investment decisions is:
$Y = 1.0012FL - 0.0939RB + \epsilon$
On the other hand, the linear equation for the total effect of representativeness bias on investment decisions is:
$Y = 0.1989RB + \epsilon$

These findings show that representativeness bias adversely affected investment decisions directly ($\beta = -0.0939$) while exhibiting a positive indirect influence via financial literacy ($\beta = 0.2928$), with financial literacy serving as a significant mediator ($\beta = 1.0012$). The results demonstrated statistical significance ($p < 0.05$), resulting in the rejection of the null hypothesis $H0_2$. This confirms that financial literacy reduces the effect of representativeness bias on investment decisions among SMEs in Nairobi County.

The first model indicated that representativeness bias accounted for about 4.35% of the variance in investment decisions; however, upon the inclusion of financial literacy, the explanatory power surged to 96.59%, underscoring the critical influence of financial knowledge for rational investing behavior. The mediation research established that persons with less financial literacy are more prone to heuristic biases, resulting in suboptimal investment decisions, whereas financial literacy improves decision-making by mitigating cognitive distortions. These findings correspond with the research conducted by Paramita and Henny (2022), Suresh (2021), and Weixiang et al. (2022), which confirm that financial literacy can mitigate biases and enhance investing rationality. Contrarily, research by Kasoga (2021) indicate that the influence of financial literacy may differ across contexts due to cultural, behavioral, and market-specific variables. Studies on behavioral biases, such those by Irshad et al. (2016) and Safitri and Hariyanto (2023), substantiate the idea that investors frequently depend on heuristics such as representativeness, resulting in erroneous decisions. Some studies, such Özen & Ersoy (2019), affirm that financial literacy mitigates cognitive biases, but others, such as Kasoga (2021) and Mbere and Safitri (2024), contest this notion, positing that financial literacy alone may not consistently counteract cognitive distortions. The inconsistencies underscore the intricacies of investor behavior, shaped by many demographic and contextual factors, hence necessitating focused financial education initiatives to enhance decision-making among SMEs in Nairobi County.

These findings support Heuristics Theory, which suggests that cognitive shortcuts facilitate rapid decision-making but also lead to systematic biases, such as representativeness, that influence investment decisions. BPT posits that investors create portfolios influenced by psychological preferences and biases, rather than solely by rational returns, thereby highlighting the role of cognitive biases in investment decision-making. The model's limited explanatory power regarding representativeness bias indicates that additional factors, such as financial literacy, significantly influence SME investment behaviors. This supports the mediating role of financial literacy, as described by HCT, which posits that investments in education and financial training improve decision-making capabilities. Critiques of HCT emphasize its excessive focus on rational decision-making, overlooking psychological influences. This suggests that although financial literacy can reduce biases, it does not completely eradicate them. Therefore, although representativeness bias has a minor yet notable impact on investment decisions, enhancing financial literacy may prove to be a more effective approach for improving investment outcomes in SMEs.

This study concluded that representativeness bias affected investment decisions among selected SMEs in Nairobi County, with financial literacy serving as a mediator. SMEs proprietors/managers who depended on heuristic thinking may have made suboptimal decisions; however, financial literacy served to mitigate this effect by fostering more informed and rational investment choices. Enhancing financial education for SME investors is a vital intervention to mitigate cognitive biases and enhance investment outcomes.

To improve investment decision-making in the SME sector, this study recommends that SMEs to prioritize financial literacy training to reduce cognitive biases such as representativeness bias, thereby facilitating more informed and rational financial decisions. Further, the SME sector should advance structured decision-making frameworks and incorporate behavioral finance principles to mitigate heuristic-driven investment errors. Also, the Government of Kenya should establish policies that promote financial education initiatives, facilitate accessible training on investment strategies, and foster financial advisory services that are conducive to SMEs. In addition, future research should investigate the influence of digital financial platforms on behavioral biases, analyze the effects of biases such as overconfidence on SME investments, and evaluate the long-term effects of financial literacy interventions on the growth and sustainability of SMEs.

References

[1] Ahmad, M., Shah, S. Z. A., & Abbass, Y. (2021). The Role Of Heuristic-Driven Biases In Entrepreneurial Strategic Decision-Making: Evidence From An Emerging Economy. Management Decision, 59(3), 669-691.

[2] Akkaya, M. (2021). Behavioral Portfolio Theory. In Applying Particle Swarm Optimization: New Solutions And Cases For Optimized Portfolios (Pp. 29-48). Cham: Springer International Publishing.

[3] Bell, D. R., & Blake, M. B. (2020). Retail Merchandising Strategy: Planning And Execution (2nd Ed.). Fairchild Books.

[4] Cati, M. M. (2022). 'Law And…'A New Perspective.

[5] Dias, N., Avila, M., Campani, C. H., & Maranho, F. (2019). The Heuristic Of Representativeness And Overconfidence Bias In Entrepreneurs. Latin American Business Review, 20(4), 317-340.

[6] Davis, J. B. (2022). John Tomer's Reconceptualization Of The Concept Of Human Capital. In Constructing A More Scientific Economics: John Tomer's Pluralistic And Humanistic Economics (Pp. 81-98). Cham: Springer International Publishing.

[7] Doyle, J., Ojiako, U., Marshall, A., Dawson, I., & Brito, M. (2021). The Anchoring Heuristic And Overconfidence Bias Among Frontline Employees In Supply Chain Organizations. Production Planning & Control, 32(7), 549-566.

[8] Fitri, H. K., & Cahyaningdyah, D. (2021). The Influence Of Representativeness On Investment Decision Through Overconfidence. Management Analysis Journal, 10(2), 243-256.

[9] Harrison, G. W., & Ross, D. (2023). Behavioral Welfare Economics And The Quantitative Intentional Stance. In Models Of Risk Preferences: Descriptive And Normative Challenges, 22, 7-67). Emerald Publishing Limited.

[10] Holborow, M. (2021). Language Skills As Human Capital? Challenging The Neoliberal Frame. In Education And The Discourse Of Global Neoliberalism (Pp. 50-62). Routledge.

[11] Hung, J., & Ramsden, M. (2021). The Application Of Human Capital Theory And Educational Signalling Theory To Explain Parental Influences On The Chinese Population's Social Mobility Opportunities. Social Sciences, 10(10), 362.

[12] Jamshidi, N., Ghalibaf Aslf Asl, H., & Fadaie Nejad, M. E. (2019). Studying The Overconfidence And Representativeness Biases Of Individual Investors In Tehran Stock Exchange. Financial Research Journal, 21(2), 143-164.

[13] Joharudin, A. (2023). Understanding The Nexus Of Financial Literacy And Behavioral Biases In Investment Decisions. Finansha: Journal Of Sharia Financial Management.

[14] Irshad, S., Badshah, W., & Hakam, U. (2016). Effect Of Representativeness Bias On Investment Decision Making. Management And Administrative Sciences Review, 5(1), 26-30.

[15] Kasoga, P. S. (2021). Heuristic Biases And Investment Decisions: Multiple Mediation Mechanisms Of Risk Tolerance And Financial Literacy; A Survey At The Tanzania Stock Market. Journal Of Money And Business, 1(2), 102-116.

[16] Kenya National Bureau Of Statistics. (2022). Economic Survey 2022. Kenya National Bureau Of Statistics.

[17] Kharisma, H., & Cahyaningdyah, D. (2022). The Influence Of Representativeness On Investment Decision Through Overconfidence. Management Analysis Journal, 10(2), 243-256.

[18] Klapper, L., & Lusardi, A. (2020). Financial Literacy And Financial Resilience: Evidence From Around The World. Financial Management, 49(3), 589-614.

[19] Kuzminov, Y., Sorokin, P., & Froumin, I. (2019). Generic And Specific Skills As Components Of Human Capital: New Challenges For Education Theory And Practice. Форсайт, 13(2 (Eng)), 19-41.

[20] Lusardi, A. (2019). Financial Literacy And The Need For Financial Education: Evidence And Implications. Swiss Journal Of Economics And Statistics, 155(1), 1-8.

[21] Majewski, S., & Majewska, A. (2022). Behavioral Portfolio As A Tool Supporting Investment Decisions. Procedia Computer Science, 207, 1713-1722.

[22] Marginson, S. (2019). Limitations Of Human Capital Theory. Studies In Higher Education, 44(2), 287-301.

[23] Mbere, V., & Safitri, H. (2024). The Effect Of Financial Literacy And Income On Credit Taking Decisions With Financial Behavior As A Moderating Variable In Pontianak City MSMES. EKOMBIS REVIEW: Jurnal Ilmiah Ekonomi Dan Bisnis, 12(3), 2965-2976.

[24] Mohajan, H. K. (2018). Qualitative Research Methodology In Social Sciences And Related Subjects. Journal Of Economic Development, Environment And People, 7(1), 23-48.

[25] Nadezhina, O., & Avduevskaia, E. (2021, September). Genesis Of Human Capital Theory In The Context Of Digitalization. In European Conference On Knowledge Management (Pp. 577-584). Academic Conferences International Limited.

[26] Natasya, N., Kusumastuti, D. H., Alifia, W., & Leon, F. M. (2022). The Effect Between Behavioral Biases And Investment Decisions Moderated By Financial Literacy On The Millennial Generation In Jakarta. The Accounting Journal Of Binaniaga.

[27] Paramita, P. K., & Henny, R. (2022). The Effect Of Financial Literacy On Stock Investment Decisions. Eurasia: Economics And Business, 56-65.

[28] Polychronakis, N. (2023). Investment Behavioural Biases: Cognitive Vs Emotional (Master's Thesis, Πανεπιστήμιο Πειραιώς).

[29] Polychronakis, N. (2023). Investment Behavioural Biases: Cognitive Vs Emotional (Master's Thesis, Πανεπιστήμιο Πειραιώς).

[30] Rasheed, M. H., Rafique, A., Zahid, T., & Akhtar, M. W. (2018). Factors Influencing Investor's Decision Making In Pakistan: Moderating The Role Of Locus Of Control. Review Of Behavioral Finance, 10(1), 70-87.

[31] Saunders, M., Lewis, P., & Thornhill, A. (2019). Research Methods For Business Students (8th Ed.). Pearson.
[32] Schirrmeister, E., Göhring, A. L., & Warnke, P. (2020). Psychological Biases And Heuristics In The Context Of Foresight And Scenario Processes. Futures & Foresight Science, 2(2), 31.
[33] Safitri, H., & Hariyanto, D. (2023). The Effects Of Financial Literacy, Overconfidence, Representativeness Bias On Financial Behavior And Decisions To Continue Investing As Intervening Variables. International Journal Papier Public Review, 4(2), 62-70.
[34] Seraj, A. H., Alzain, E., & Alshebami, A. S. (2022). The Roles Of Financial Literacy And Overconfidence In Investment Decisions In Saudi Arabia. Frontiers In Psychology, 13, 1005075.
[35] Suresh, G. (2021). Impact Of Financial Literacy And Behavioural Biases On Investment Decision-Making. FIIB Business Review, 23197145211035481.
[36] Wakiaga, P. (2022). Smes Critical In Attaining Manufacturing Dream. Retrieved On September 26, 2023 From Https://Kam.Co.Ke/Smes-Critical-In-Attaining-Manufacturing-Dream/.
[37] Warmath, D., & Zimmerman, D. (2019). Financial Literacy As More Than Knowledge: The Development Of A Formative Scale Through The Lens Of Bloom's Domains Of Knowledge. Journal Of Consumer Affairs, 53(4), 1602-1629.
[38] Weixiang, S., Qamruzzaman, M., Rui, W., & Kler, R. (2022). An Empirical Assessment Of Financial Literacy And Behavioral Biases On Investment Decision: Fresh Evidence From Small Investor Perception. Frontiers In Psychology, 13, 977444.
[39] World Bank. (2023). Small And Medium Enterprises (Smes) Finance: Improving Smes' Access To Finance And Finding Innovative Solutions To Unlock Sources Of Capital. Https://Www.Worldbank.Org/En/Topic/Smefinance#:~:Text=Smes%20account%20for%20the%20majority,(GDP)%20in%20emerging%20economies.