Original Article
ISSN (Online): 2582-7472

ShodhKosh: Journal of Visual and Performing Arts
January 2024 5(1), 2509–2516

FINANCIAL MODELLING AS A STRATEGIC TOOL FOR INVESTMENT DECISION-MAKING

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ABSTRACT

In today's volatile and complex financial environment, making informed investment decisions is crucial for individual investors aiming to optimize returns while managing risks effectively. This study delves into the strategic importance of financial modelling as a decision-support tool that helps investors analyze various scenarios, forecast potential outcomes, and systematically evaluate investment options. Using an analytical framework supported by a comprehensive questionnaire survey conducted among a diverse group of individual investors and financial professionals, the research explores several dimensions: the level of awareness and actual usage of financial modelling tools, the perceived benefits in improving investment decisions, and the challenges and barriers faced by users. The findings reveal that while financial modelling significantly enhances the quality and discipline of investment decisions—by enabling better risk assessment, diversification, and goal alignment—many investors are still hesitant due to technical complexity and trust issues with automated systems. The study further discusses actionable recommendations, including improving user interface design, expanding educational initiatives, and fostering greater integration with advisory services to facilitate wider adoption. This paper underscores the critical role of financial modelling in empowering individual investors and shaping more strategic, data-driven investment behavior in a rapidly evolving financial landscape.

Keywords: Financial Modelling, Investment Decision-Making, Individual Investors, Strategic Tools, Risk Management, Investment Planning, Behavioral Finance, FinTech Adoption, Decision Effectiveness

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DOI
10.29121/shodhkosh.v5.i1.2024.5590

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

1. INTRODUCTION

In an increasingly dynamic and uncertain financial environment, making well-informed investment decisions has become a critical necessity for individual investors. With the rapid proliferation of investment products, fluctuating market conditions, and an overload of financial information, investors often struggle to make rational, goal-oriented decisions. Financial modelling emerges as a powerful strategic tool that aids in navigating this complexity by enabling users to simulate potential outcomes, evaluate different scenarios, and align investment choices with long-term financial goals. Traditionally confined to the realm of corporate finance and institutional investing, financial modelling has now become more accessible to individual investors, thanks to advancements in technology and the growth of user-friendly financial platforms.

This shift in accessibility has opened up opportunities for individuals to apply sophisticated financial analysis in personal investing—ranging from retirement planning and tax optimization to risk assessment and portfolio

management. However, despite the availability of such tools, there remains a significant gap in their understanding, effective usage, and integration into personal finance decisions. The application of financial modelling in individual decision-making is still relatively underexplored in academic literature, especially in terms of its effectiveness and efficiency from the investor's perspective.

This research seeks to examine how financial modelling is used by individual investors, what challenges they encounter, and how it contributes to better investment outcomes. The study also evaluates the strategic impact of these tools in helping investors make more structured and data-driven decisions. Through analytical research supported by survey data, this paper aims to bridge the gap between theory and practice, and to offer insights that could influence financial literacy programs, advisory services, and the design of more accessible financial modelling solutions. By focusing on the human experience of investors rather than purely technical frameworks, this research emphasizes the practical role of financial modelling as a strategic enabler in today's investment landscape.

2. LITERATURE REVIEW

Financial modelling has long served as a fundamental instrument in the decision-making processes of financial analysts, institutional investors, and corporate managers. It allows for the creation of structured frameworks through which economic forecasts, risk analysis, asset pricing, and scenario simulations are performed (Bhimani et al., 2019). Traditionally rooted in the domain of corporate finance, financial modelling has recently gained attention in the context of personal investment due to the democratization of financial technologies and the rise of investor-centric platforms. However, the academic exploration of its utility and adoption at the individual investor level remains comparatively sparse.

Studies in the domain of corporate investment suggest that financial models increase decision-making accuracy by allowing users to assess financial statements, forecast cash flows, and perform valuations under various scenarios (Gerlach et al., 2020). These models, when applied effectively, improve the strategic planning process by aligning financial goals with market dynamics. The core principles used in institutional settings—such as Net Present Value (NPV), Internal Rate of Return (IRR), and Monte Carlo simulations—are increasingly being incorporated into personal finance applications. Yet, as observed by Baker and Ricciardi (2014), individual investors tend to rely more on heuristics and behavioral shortcuts rather than structured models, often due to limited knowledge or psychological biases.

From a behavioral finance perspective, scholars like Thaler (2015) and Kahneman (2011) have emphasized the limitations of human rationality in financial decision-making. Investors are prone to errors such as overconfidence, loss aversion, and confirmation bias. These cognitive shortcomings can significantly hamper their ability to evaluate investment alternatives objectively. Financial modelling, in this context, acts as a cognitive support system by offering a data-driven foundation that minimizes subjective judgment. It encourages scenario-based analysis and fosters discipline in decision-making, which is particularly useful during periods of market volatility.

The rise of FinTech has played a pivotal role in bringing financial modelling to a broader audience. Platforms such as Groww, Zerodha, Robinhood, and Personal Capital have integrated goal-based planning tools, risk assessment dashboards, and algorithmic investment advisors. Ghosh (2021) notes that the integration of financial modelling within these platforms helps users better visualize the impact of their investment strategies. Despite these advancements, adoption among non-professional investors remains modest. Many users perceive financial models as complex, or express concern about the credibility of AI-based investment recommendations (Jain & Patil, 2022).

Educational background and financial literacy are identified as strong determinants of modelling adoption. According to Lusardi and Mitchell (2017), individuals with formal financial education are more likely to use structured tools and evaluate investment risks more accurately. A recent survey by Deloitte (2022) found that only 27% of retail investors actively use modelling tools for personal finance, even though 72% acknowledged the value of such tools in theory. This disconnect suggests a pressing need for user-centric design, simplified interfaces, and better educational outreach.

Moreover, financial modelling tools are also lauded for improving goal-based investing. For instance, Bodie, Merton, and Samuelson (1992) advocated for the use of lifecycle financial models in aligning investment strategies with life goals such as retirement, education, or home ownership. These models help visualize trade-offs between risk and return across different time horizons. Recent innovations have further expanded the scope to include ESG investing, tax optimization,

and income drawdown strategies—making modelling not only a quantitative but also a strategic tool for holistic financial planning.

Nonetheless, challenges remain. Research by Sahoo and Pandey (2023) reveals that a significant portion of individual investors either do not understand the output from modelling tools or do not trust their recommendations. This lack of confidence, coupled with fears of data privacy and costs associated with premium platforms, continues to act as a barrier to mass adoption. Also, most financial modelling tools today are not fully personalized; they often operate on generalized assumptions that may not reflect the nuanced realities of each user's financial context.

While the academic and practical case for financial modelling is strong, its translation into individual investor behavior is still developing. The literature emphasizes the potential benefits—enhanced rationality, better planning, and risk management—yet also highlights challenges such as accessibility, comprehension, and trust. There is a growing consensus among researchers that future success in this field will depend not only on technological innovation but also on behavioral insights, regulatory support, and improved financial education.

3. OBJECTIVES

1) To assess the awareness and adoption of financial modelling tools among individual investors
2) To evaluate the effectiveness of financial modelling in improving investment decision-making
3) To identify the challenges and barriers faced by individual investors in using financial models
4) To recommend strategies for increasing the accessibility and impact of financial modelling for personal investment planning

4. HYPOTHESIS STATEMENT

H_0 (Null Hypothesis): There is no significant relationship between the use of financial modelling tools and the quality of investment decision-making among individual investors.

H_1 (Alternative Hypothesis): There is a significant positive relationship between the use of financial modelling tools and the quality of investment decision-making among individual investors.

5. RESEARCH METHODOLOGY

This study adopts a quantitative research methodology using a structured questionnaire survey to collect primary data from individual investors across varied age groups, educational backgrounds, and income levels. A descriptive and analytical design was employed to examine the extent of awareness, usage, perceived effectiveness, and challenges associated with financial modelling tools. The sampling method used was stratified random sampling, targeting a sample size of 300 respondents across urban and semi-urban regions. Data were analyzed using statistical tools such as frequency analysis, cross-tabulation, and regression analysis to test the hypothesis and identify correlations between financial modelling usage and improved investment decision outcomes. Secondary data sources included scholarly articles, financial technology reports, and investor behavior studies to support and validate findings.

6. DATA ANALYSIS AND FINDINGS

Objective 1: To assess the awareness and usage level of financial modelling tools among individual investors

Analysis of awareness of financial modelling as a tool for investment planning

1) The analysis shows that 92% of respondents are aware of financial modelling tools for investment planning, indicating a high level of awareness among individual investors. Only 8% reported no awareness, suggesting that financial modelling has gained considerable recognition as an investment aid. This high awareness is a positive indicator for further adoption and usage.
2) Familiarity of financial modelling tools: (Table: 2)

Sr. No	Research Attributes	Frequency	Percentage
1	Excel-based financial models	78	26%

2	Online calculators (SIP, retirement planning)	93	31%
3	Portfolio planning apps (Groww, Kuvera, Zerodha)	65	22%
4	Robo-advisors	64	21%

Among various tools, online calculators (31%) and Excel-based financial models (26%) were the most familiar to respondents. Portfolio planning apps (22%) and robo-advisors (21%) followed. This indicates that while traditional tools like spreadsheets still hold relevance, modern digital platforms are gaining traction, showing a shift toward digital financial planning solutions.

3) Frequency of use of financial modelling tools for investment decisions: (Table: 3)

Sr. No.	Research Attributes	Frequency	Percentages
1	Never	12	4%
2	Rarely	35	12%
3	Occasionally	64	21%
4	Frequently	98	33%
5	Always	91	30%

The data indicates a healthy usage trend, with 33% of respondents frequently using financial modelling tools and another 30% using them always. Occasional use stood at 21%, while only 4% never used them. This implies that once aware, a majority of investors tend to adopt and rely on these tools for decision-making.

4) Primary source of information about financial modelling tools: (Table: 4)

Sr. No.	Research Attributes	Frequency	Percentages
1	Financial advisors	85	28%
2	Friends/Peers	77	26%
3	Online platforms	73	24%
4	Employers/Training programs	65	22%

Financial advisors (28%) were the most cited source of information, followed by friends/peers (26%) and online platforms (24%). Employers and training programs were the least cited at 22%. This suggests that while professional advice remains a dominant source, informal networks and digital content are also significant contributors to spreading awareness.

Objective 2: To evaluate the perceived and actual effectiveness of these tools in guiding investment decisions

5) Effectiveness of financial modelling tools in supporting investment decisions: (Table: 5)

Sr. No.	Research Attributes	Frequency	Percentages
1	Not at all effective	8	3%
2	Slightly effective	25	8%
3	Moderately effective	75	25%
4	Very effective	92	31%
5	Extremely effective	100	33%

About 64% of respondents rated financial modelling tools as either very effective (31%) or extremely effective (33%), showing strong endorsement of these tools in improving investment decisions. Only 11% rated them as slightly or not effective, indicating high user satisfaction overall.

6) Ways the financial modelling help: (Table: 6)

Sr. No.	Research Attributes	Frequency	Percentages
1	Better goal planning	52	17%
2	Improved risk analysis	48	16%

3	Avoiding emotional decisions	62	21%
4	Portfolio diversification	65	22%
5	Higher returns	73	24%

Respondents identified higher returns (24%), portfolio diversification (22%), and avoiding emotional decisions (21%) as key benefits of financial modelling. Other notable benefits included better goal planning (17%) and improved risk analysis (16%). These responses suggest that financial modelling contributes to both rational decision-making and goal alignment.

7) Level of confidence in making investment decisions improved by financial models:

A significant 88% of respondents stated that financial models have improved their confidence in making investment decisions. This supports the argument that such tools not only assist in data analysis but also empower investors with self-assurance.

Objective 3: To identify the challenges and barriers individual investors face when using financial models

8) Challenges faced using financial modelling tools: (Table: 8)

Sr. No.	Research Attributes	Frequency	Percentages
1	Lack of technical knowledge	82	27%
2	Difficult user interface	40	13%
3	Difficulty interpreting results	62	21%
4	Trust issues with automated recommendations	65	22%
5	High subscription or tool costs	51	17%

The most common challenge was lack of technical knowledge (27%), followed by trust issues with automated recommendations (22%) and difficulty interpreting results (21%). A notable 13% found user interfaces difficult, while 17% cited cost as a barrier. These findings highlight both cognitive and usability-related barriers.

9) Level of formal help or training on use of financial models? (Table: 9)

Sr. No.	Research Attributes	Frequency	Percentages
1	Never	12	4%
2	Occasionally	36	12%
3	Frequently	137	46%
4	Always	115	38%

Only 4% of respondents reported never receiving any training, while 84% received formal help either frequently (46%) or always (38%). This suggests a growing recognition of the need for education in this area, which is likely contributing to higher usage and effectiveness.

10) Encouraging factors to use financial modelling tools more regularly: (Table: 10)

Sr. No.	Research Attributes	Frequency	Percentages
1	User-friendly design	75	25%
2	Personalized recommendations	82	27%
3	Training/tutorials	45	15%
4	Low-cost or free access	64	21%
5	Integration with bank/investment accounts	34	11%

The most desired features were personalized recommendations (27%) and user-friendly design (25%). Other important features included low-cost access (21%) and training/tutorials (15%). Only 11% preferred integration with bank accounts. The results show that customization and ease of use are key drivers for wider adoption.

Objective 4: To propose strategies for enhancing the accessibility and impact of financial modelling in personal investment planning

11) Sources recommend a financial modelling tool: (Table: 11)

Sr. No.	Research Attributes	Frequency	Percentages
1	Financial advisor	52	17%
2	Employer	42	14%
3	Bank	68	23%
4	Friends or peers	72	24%
5	Advertisement	66	22%

Friends or peers (24%) and banks (23%) were the most trusted sources, followed by advertisements (22%) and financial advisors (17%). Employers ranked the lowest (14%). These insights suggest that personal networks and financial institutions play a key role in influencing tool adoption.

12) Would you support the idea of financial modelling training being offered by employers? (Table: 12)

Sr. No.	Research Attributes	Frequency	Percentages
1	Strongly agree	145	48%
2	Agree	98	33%
3	Neutral	45	15%
4	Disagree	8	3%
5	Strongly disagree	4	1%

An overwhelming 81% of respondents (48% strongly agree, 33% agree) supported integrating financial modelling training into schools, colleges, or by employers. Only 4% disagreed. This shows a strong demand for structured educational interventions to enhance financial decision-making capabilities through modelling tools.

7. HYPOTHESIS TESTING

To test the hypothesis, researcher has used the responses related to frequency of use of financial modelling tools and perceived effectiveness in decision-making (Tables 3 and 5). A Chi-Square Test for Independence was applied to determine whether there is a statistically significant association between the frequency of use of financial modelling tools and the quality of investment decisions, as measured by respondents' perceived effectiveness.

Since the p-value (0.016) is less than the standard alpha level of 0.05, researcher has rejected the null hypothesis (H_0) and accept the alternative hypothesis (H_1). This indicates a statistically significant and positive relationship between the use of financial modelling tools and the quality of investment decisions.

The results suggest that as the frequency of using financial modelling tools increases, individual investors are more likely to report that their investment decisions are effective, confident, and better aligned with their financial goals. Thus, financial modelling serves as a strategic enabler for individual investors to make more informed and rational decisions.

8. DISCUSSION

This research underscores the rising importance of financial modelling tools as strategic instruments in guiding investment decisions for individual investors. The findings clearly reflect a high level of awareness (92%) and a notable frequency of usage, particularly among tools like online calculators and portfolio planning apps. The study demonstrates that frequent users of such tools report a higher degree of confidence, better goal alignment, and improved decision-making. However, the data also highlight challenges such as technical knowledge gaps, trust issues with automated platforms, and limited training availability. These issues indicate a divide between those who benefit from financial modelling and those who remain underserved. The role of financial literacy, simplified interfaces, and support from financial advisors or employers emerges as crucial in driving adoption and efficacy.

9. CONCLUSION

The study concludes that financial modelling is a powerful tool for enabling structured, informed, and rational investment decisions among individual investors. While the majority of participants recognize the potential of these tools, actual usage and confidence levels are closely tied to the availability of training, user-friendly interfaces, and trust in the tool's recommendations. The statistical evidence validates a positive relationship between the use of financial modelling tools and the quality of investment decisions. For financial modelling to become a mainstream enabler of financial well-being, it is imperative to increase accessibility, improve user interfaces, offer personalized guidance, and integrate such tools into broader financial literacy programs. With adequate support and strategic promotion, financial modelling can transform the personal investment landscape.

10. LIMITATIONS AND FUTURE SCOPE

The study has certain limitations. Firstly, it is geographically confined to a specific respondent base and may not fully capture national or global investment behaviors. Secondly, the study primarily relies on self-reported data, which might carry inherent biases related to perception and experience. Additionally, the scope does not delve deeply into the effectiveness of different types of financial modelling tools beyond user-reported outcomes. Future research can broaden the demographic and geographical scope, compare tool-based decision outcomes with actual investment returns, and explore AI-driven modelling and its impact. Longitudinal studies could also assess how consistent tool usage impacts wealth creation over time.

11. ORIGINALITY OF THE WORK

This research presents an original and timely investigation into how financial modelling tools are influencing investment decision-making among individual investors. Unlike generic surveys of financial behavior, this study specifically evaluates usage patterns, challenges, and the perceived effectiveness of modern digital modelling tools such as robo-advisors, SIP calculators, and portfolio apps. The primary data collected through a structured questionnaire adds a unique empirical dimension to the existing literature, highlighting both behavioral trends and technical barriers. The research bridges theoretical understanding and practical applicability, offering actionable insights for tool developers, financial educators, and policymakers.

12. RESEARCH ETHICS

This study adheres to all ethical standards in research conduct. Participation in the survey was entirely voluntary, and informed consent was obtained from all respondents. Confidentiality and anonymity of participant responses were strictly maintained, ensuring that personal investment data or identities were not disclosed or misused. The questionnaire was designed in a non-intrusive manner, and participants were free to skip questions or withdraw at any point without consequence. No deception, coercion, or biased framing of questions was used. Furthermore, the study refrained from endorsing any specific financial product or platform, maintaining objectivity throughout the research process.

CONFLICT OF INTERESTS

None.

ACKNOWLEDGMENTS

None.

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