

## EVALUATING THE EFFECT OF FINANCIAL LITERACY ON INVESTMENT DECISION- META-ANALYSIS

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### Abstract

This meta-analysis investigates the impact of financial literacy on investment decision-making by synthesizing evidence from 30 peer-reviewed studies published between 2018 and 2024 through Scopus Database. The dataset was retrieved and drawn from a diverse sample including young, individual, household, and Small Medium Enterprises (SME) investors, the analysis employs a random-effects model using Fisher's r-to-z transformation. The results of the study indicate a statistically significant positive correlation between financial literacy and investment decisions with high heterogeneity. The moderation analysis revealed no statistically significant influence of population type or publication year on the examined relationship. The findings of the study also confirmed that financial literacy substantially enhance the investment behaviour of individuals in promoting diversification, informed decision making, and lead to active participation in the financial markets. Therefore, the results underscore the importance of integrating financial education policy frameworks, especially for digitally active and younger populations to foster the vibrant investment practices in the economy through evolving financial landscape.

**Keywords:** Financial Literacy, Meta-Analysis and Investment decision-making

### 1. Introduction

The concept of financial literacy can be easily understandable and effectively used in various financial areas like personal financial management, budgeting, and investing, has fascinated attention in recent years (Lusardi & Mitchell, 2014). The growing interest in financial literacy stems from the observation that many individuals lack basic financial knowledge, which can lead to poor financial decisions and long-run financial hardship (Ahmad et al., 2022; Lusardi & Mitchell, 2014). Due to this, the consequences of financial illiteracy are extensively affecting the individuals, families and even the broader economy in the global world. As financial markets become increasingly complex, and individuals are required to take more responsibility for their financial well-being, the importance of financial literacy has become even more pronounced (Fernandes et al., 2014). The individuals with higher financial literacy are more likely to engage in desirable financial behaviors, such as making deposits, investing in mutual funds and stocks, creating prudent retirement plans, and engaging in sustainable investment practices (Xu et al., 2022).

This article uses meta-analysis to examine the effects of financial literacy on investment decisions. Several research work consistently demonstrates that individuals with higher levels of financial literacy tend to accumulate more wealth, likely because they are better equipped to plan for retirement and appreciate the power of compound interest (Lusardi, 2019). These individuals are also more likely to participate in the stock market and other investment activities, potentially leading to higher returns and greater financial security (Koomson et al., 2022). However, acquiring financial knowledge entails costs and benefits, and for some, the time and cognitive costs may outweigh the advantages (Angrisani et al., 2020). The interplay between financial literacy, cognitive biases, and technological advancements has garnered significant attention with the academia, researcher and policy makers in understanding investment behaviors across diverse demographics. The financial literacy is increasingly recognised as a critical determinant of prudent financial decision-making by influencing both savings and investment choices. (Wang and Zou, 2024). The research studies have shown that financial literacy not only enrich and enhances the investment decision by improving portfolio diversification and market participation but also interacts with cognitive biases, potentially mitigating or exacerbating their effects. The rise of fintech and digital platforms in the global level has further complicated the investment landscape, necessitating a blend of financial and digital literacy to navigate effectively (Kartika et al., 2023). This research paper is organized as follows: The subsequent section presents a comprehensive review of the literature related to the impact of financial literacy on investment decision-making. Following this, we provide a detailed overview of our methodological framework, including data collection procedures and analytical techniques. The paper concludes with a discussion of our key findings and their implications for the field.

## 2. Literature Review

The burgeoning discipline of financial literacy has fascinated considerable attention, emerging as a determining factor in shaping the individuals' economic behaviours, particularly in the realm of investment decisions (Lusardi & Mitchell, 2014). In financial literacy, the human capital investment conceptualization encompasses a wide spectrum of knowledge and skills necessary for effective financial management, by influencing welfare and necessitating policies aimed to increasing financial knowledge across diverse populations (Lusardi & Mitchell, 2014, 2023). The study of financial literacy involves assessing the population's financial knowledge through surveys to identify subgroups that lack financial skills, which is followed by examining how financial literacy affects economic choices in different countries (Lusardi & Mitchell, 2014). The understanding of financial literacy extends beyond mere comprehension, impacting asset accumulation, portfolio selection, and credit choices, underscoring its pivotal role in fostering positive financial outcomes (Finke & Huston, 2014). Consequently, a multitude of studies have delved into the intricate relationships between financial literacy and various economic behaviours, revealing a robust correlation between financial literacy and adept day-to-day financial management skills (Lusardi & Mitchell, 2014). Despite the strides made in understanding the implications of financial illiteracy, there remain lacunae in both theoretical and empirical models, emphasizing the need for further research to refine our understanding and inform public policy (Lusardi & Mitchell, 2014).

The conventional microeconomic models posit that rational individuals strategically manage their consumption and savings, optimizing resource allocation across their lifespan; however, this model assumes individuals possess adequate financial knowledge, which is not always the case (Lusardi & Mitchell, 2014). The financial literacy is not merely a desirable attribute but a fundamental requirement for navigating the complexities of modern economies

and fostering economic stability (Agu et al., 2024). An individual's level of financial literacy equips them with the skills to manage resources effectively, mitigate risks, and make informed investment choices (D.A.T., 2020). However, when financial literacy is a choice, it is important to distinguish cause from effect. Those who invest in financial markets may want to improve their financial knowledge, since they have more at stake (Lusardi & Mitchell, 2014). The challenge lies in not only assessing what individuals know but also discerning what they need to know to effectively navigate the complexities of the financial sector.

In Indonesia, the financial literacy and experience have shown significantly influence investment decisions, although investor awareness alone does not (Kartika et al., 2023). Moreover, psychological factors such as risk tolerance and locus of control, alongside sociodemographic variables, play crucial roles in shaping investment intentions, particularly among younger investors (Kurniadi and Herdinata, 2024). In Saudi Arabia, financial orientation and perceived financial literacy have been positively linked to investment intentions, underscoring the importance of financial education in fostering investment behaviors (Adow, 2024). Collectively, numerous studies highlight the multifaceted nature of investment decision-making, advocating for comprehensive financial education programs that integrate behavioral insights and technological competencies to empower individuals and enhance financial well-being (Eko, 2022).

In nutshell, the empirical evidence suggests a significant portion of the population lacks fundamental financial literacy, leading to suboptimal financial decisions and increased vulnerability to economic shocks. The correlation between financial literacy and sound financial decision-making has been widely documented, highlighting its importance in asset accumulation, portfolio diversification, and prudent credit management. Understanding the impact of financial literacy on investment choices can further inform the development of targeted interventions aimed at improving financial well-being and promoting economic stability. Given the evolving landscape of financial markets and the increasing complexity of financial products, it becomes imperative to conduct a meta-analysis synthesizing existing research findings to provide a comprehensive understanding of the impact of financial literacy on investment decisions.

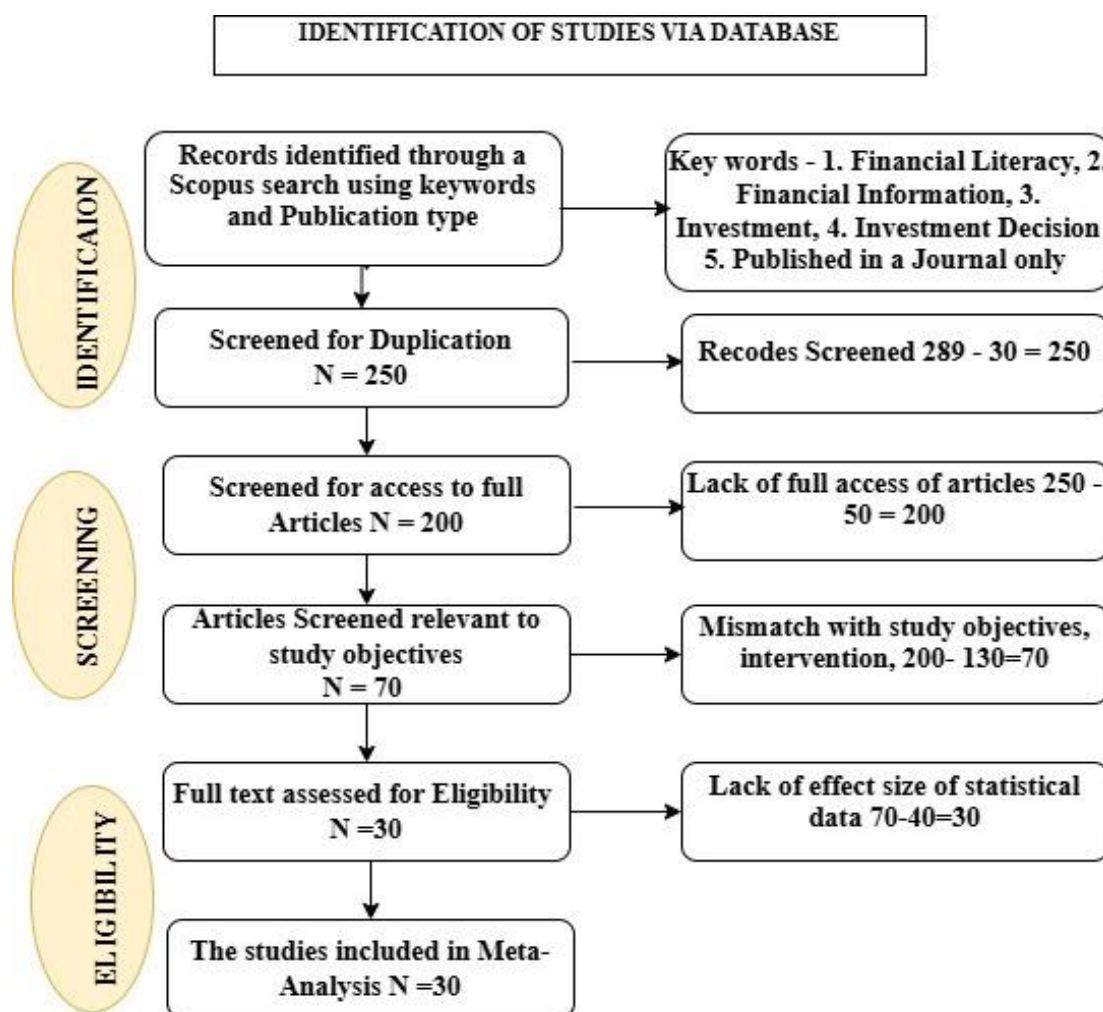
### **3. Data Extraction Management**

The detailed literature review search was performed using Scopus database. In order to draw a valid conclusion, the overall research studies must have certain elimination is required for meaningful and reliable conclusion in meta-analysis. Due to this, certain research studies are excluded for various reasons, which could be methodology, not relevant data, duplication of studies, statistical incompatibility, or not meeting the inclusion criteria. The Prisma model is framed carefully by looking into all relevant criteria for inclusion of studies, which would give an overall quality to the conclusion of meta-analysis. The data extraction was performed by using a standardized Excel form with the following categories: Author(s), publication year, journal, sample size, population included in study, year of data collection, and the statistics describing the main findings examining the association between financial literacy and investment decisions. The study population and the year of publication are treated as moderators.

The initial inclusion criterion required the selection of studies published after 2018, aligning with the publication date of the latest meta-analysis on the antecedents and outcomes of work engagement. The second criterion specified that only studies examining the impact of financial literacy on investment decisions would be included in the meta-analysis. Accordingly, the search was conducted for documents published between 2018 and 2024 using the keywords

'financial literacy and investment decision' in the title, keywords, or body of the document. After eliminating duplicates and irrelevant items, 250 studies were identified. From these, 200 relevant full-text articles were successfully retrieved. Exclusion criteria were then applied: (a) 70 studies were excluded for lacking alignment with the research objectives or interventions; (b) 30 studies were removed due to insufficient data for effect size computation or the use of incompatible measurement scales. Some studies used different measurement scales were studies in which the study quality was in question. Only 30 documents were screened for metanalysis (Gede Ariansyah and Firmialy, 2024), (Rahyuda and Candradewi, 2023), (Zhang and Sidik, 2024), (Lotto, 2020), (Chaturvedi Sharma, 2024), ( Vrdoljak, Aljinović 2023), (Yadav and Banerji, 2024), (Maheshwari *et al.*, 2024), (Munawar, 2023), (Farida *et al.*, 2023), (Baihaqqy *et al.*, 2020), (Prasad,2021), (Kartika *et al.*, 2023), *al.*, 2024),( Mahmood *et al.*, 2024),(Farida *et al.*, 2023),(Pandurugan and Al Shammakhi, 2024),(Naiwen *et al.*, 2021), (Ratnawati *et al.*, 2022), (Abdi, 2024), (Oppong *et al.*, 2023), (Ahmed *et al.*, 2021), (Subedi and Bhandari, 2024), (Suresh G, 2024), (Shrestha *et al.*,2023), (Ali *et al.*, 2022), (Rapina *et al.*, 2023), (Owusu *et al.*, 2021), (Darmayanti *et al.*, 2023). All unpublished studies are deleted; only published studies that have undergone the peer review process are considered, as it would ascertain the quality of the conclusion.

**Figure: 1 PRISMA Diagram on Screened Studies**



Source: Author Computation

**Table: 1 Summary Statistics about Studies included in Meta Analysis**

Sl. No.	Authors	Intext Citation	Title	Year	Source Title	Population	n	r	p - value
1	Aditya Gede Ariansyah, Sita Deliyana Firmialy	(Gede Ariansyah and Firmialy, 2024)	<i>“The Influence of Financial Literacy on Investment Decisions Through Locus of Control Based on Gender (Case Study on Young Gen-Z Entrepreneurs”</i>	2024	Journal of Economics, Finance and Management Studies	Young Investors	131	0.316	0.01
2	Henny Rahyuda, Made Reina Candradewi	(Rahyuda and Candradewi, 2023)	<i>“Determinants of cryptocurrency investment decisions (Study of students in Bali)”</i>	2023	Investment Management and Financial Innovations	Young Investors	179	0.3	0.001
3	Runhe Zhang, Morni Hayati Jaafar Sidik	(Zhang and Sidik, 2024)	<i>“Big Data, Artificial Intelligence, and Financial Literacy: Exploring their Combined Influence on Investment Behavior among Chinese Households”</i>	2024	Journal of Information Systems Engineering and Management	Household Investors	370	0.445	0.01
4	Josephat Lotto	(Lotto, 2020)	<i>“Towards improving households’ investment choices in Tanzania: Does financial literacy matter?”</i>	2020	International Journal of Financial Studies	Household Investors (Agriculture Investment	3812	0.418	0.01
5	Josephat Lotto	(Lotto, 2020)	<i>“Towards improving households’ investment choices in Tanzania: Does financial literacy matter?”</i>	2021	International Journal of Financial Studies	Household Investors (Investment Account)	3812	0.817	0.01

6	Josephat Lotto	(Lotto, 2020)	<i>“Towards improving households’ investment choices in Tanzania: Does financial literacy matter?”</i>	2022	International Journal of Financial Studies	Household Investors (Household Personal Business)	3812	0.468	0.01
7	Josephat Lotto	(Lotto, 2020)	<i>“Towards improving households’ investment choices in Tanzania: Does financial literacy matter?”</i>	2023	International Journal of Financial Studies (Informal Investment)	Household Investors (Informal Groups)	3812	-0.431	0.01
8	Chaturvedi Sharma P.	(Chaturvedi Sharma, 2024)	<i>“Unveiling investment Behaviour: Through Emotional Intelligence, Social Stigma, Financial Literacy, and Risk Tolerance. Effects of Financial literacy and financial risk tolerance on investor Behaviour”</i>	2025	International Journal of Social Economics	Individual Investors	761	0.621	0.002
9	Vrdoljak A.T and Aljinović Z	Vrdoljak, Aljinović 2023)	<i>“The Impact of Financial Literacy and Sociodemographic Factors on Investor Preferences”</i>	2023	17 <sup>th</sup> International Symposium on Operational Research, Slovenia Proceeding	Individual Investors	60	0.664	0.05
10	Mansi Yadav	(Yadav and Banerji, 2024)	<i>“Digital financial literacy, saving and investment behaviour in India”</i>	2024	Journal of Social and Economic Development	Individual Investors	500	0.901	0.01
11	Maheshwari H; Samantaray A.K.; Panigrahi R.R.; Jena L.K.	(Maheshwari et al., 2024)	<i>“Financial literacy in predicting investment decisions: do attitude and overconfidence influence?”</i>	2023	International Journal of Social Economics	Individual Investors	311	0.079	0.282

12	Sidra Munawar	(Munawar, 2023)	<i>“Effect of Financial Literacy on Financial Decision and Consumer Behaviour”</i>	2023	Pakistan Journal of Humanities and Social Sciences	Individual Investors	325	0.228	0.01
13	Farida Y.N; Matin C.A; Suyono E; Suparlinah I; Wiratno A.	(Farida et al., 2023)	<i>“Factors Influencing the Behavior of Young Investors’ Investment Decisions: The Emerging Market Analysis”</i>	2023	Corporate and Business Strategy Review	Individual Investors	105	0.198	0.01
14	Baihaqqy M.R.I.; Disman; Nugraha; Sari M.	(Baihaqqy et al., 2020)	<i>“The Correlation between Education Level and Understanding of Financial Literacy and its Effect on Investment Decisions in Capital Markets”</i>	2020	Journal of Education and e-Learning Research	Individual Investors	108	0.507	0.01
15	Prasad S.; Kiran R.; Sharma R.K	(Prasad, 2021)	<i>“Influence of financial literacy on retail investors’ decisions about return, risk, and market analysis”</i>	2021	International Journal of Finance and Economics	Individual Investors	200	0.83	0.005
16	Kartika H.; Karmawan I.G.M; Rusmanto T.	(Kartika et al., 2023)	<i>“The Influence of Financial Literacy, Financial Experience, Behavioural Finance &amp; Investor Awareness on the use of Fintech Applications in Making Investment Decision”</i>	2023	Proceedings of 2023 International Conference on Information Management and Technology, ICIMTech 2023	Individual Investors	200	0.215	0.05

17	Mahmood F; Arshad R; Khan S; Afzal A; Bashir	(Mahmood et al., 2024)	<i>“Impact of behavioural biases on investment decisions and the moderation effect of financial literacy: Evidence from Pakistan”</i>	2024	Acta Psychological	Individual Investors	261	-0.445	0.3
18	Pandurugan, Vaidehi, Al Shammakhi, Badriya Nasser Said	(Pandurugan and Al Shammakhi, 2024)	<i>“Modelling the theory of planned behaviour to evaluate the investment intention of Generation Z in the speculative market: stocks, Forex, and cryptocurrencies”</i>	2024	Arab Gulf Journal of Scientific Research	Young Investors	253	0.629	0
19	Naiwen L; Wenju Z; Mohsin M; Ur Rehman M.Z; Naseem; Afzal A.	(Naiwen et al., 2021)	<i>“The role of financial literacy &amp; risk tolerance: An analysis of gender differences in the textile sector of Pakistan”</i>	2021	Industrial Textile	Individual Investors	300	0.406	0.01
20	Ratnawati; Sudarmiatin; Soetjipto B.E.; Restuningdiah N.	(Ratnawati et al., 2022)	<i>“The Role of Financial Behaviour as a Mediator of the Influence of Financial Literacy &amp; Financial Attitudes on MSMEs' Investment Decision in Indonesia”</i>	2022	Journal of Social Economics Research	Individual Investors	100	0.35	0.017
21	Abdi A.A.	(Abdi, 2024)	<i>“Influence of financial literacy on investment decisions of managers of small and medium enterprises in Mogadishu, Somalia”</i>	2024	International Journal of Advanced and Applied Sciences	Individual Investors	250	0.76	0.05

22	Oppong C.; Salifu Atchulo A.; Akwaa-Sekyi E.K.; Grant D.D.; Kpegba S.A.	(Oppong et al., 2023)	<i>“Financial literacy, investment, and personal financial management nexus: Empirical evidence on private sector employees”</i>	2023	Cogent Business and Management	Individual Investors	399	0.864	0.01
23	Ahmed Z; Noreen U; Ramakrishnan S.A.L; Binti Abdullah D.F.	(Ahmed et al., 2021)	<i>“What explains the investment decision-making behaviour? The role of financial literacy and financial risk tolerance”</i>	2021	Afro-Asian Journal of Finance and Accounting	Individual Investors	382	0.379	0.01
24	Subedi D.P.; Bhandari D.R.	(Subedi and Bhandari, 2024)	<i>“Impact of Psychological Factors on Investment Decisions in Nepalese Share Market: A Mediating Role of Financial Literacy”</i>	2024	Investment Management and Financial Innovations	Individual Investors	410	0.31	0.05
25	Suresh G	(Suresh G 2024)	<i>“Impact of Financial Literacy and Behavioural Biases on Investment Decision-making”</i>	2024	FIIB Business Review	Individual Investors	250	0.051	0.324
26	SK Shrestha, B Manandhar, P Bhattarai, N Shrestha	(Shrestha et al.,2023)	<i>“Impact of Financial Literacy on Personal Investment Decisions in Kathmandu Valley”</i>	2023	Intelligence Journal of Multidisciplinary Research	Individual Investors	200	0.697	0.05
27	Ali M.A.S; Ammer M.A; Elshaer I.A.	(Ali et al., 2022)	<i>“Determinants of Investment Awareness: A Moderating Structural Equation Modeling-Based Model in the Saudi Arabian Context”</i>	2022	Mathematics	Young Investors	409	0.31	0.01

28	Rapina Rapina, Meythi, Dien N. Rahmatika, and Mardiana	(Rapina et al., 2023)	<i>“The impact of financial literacy and financial behaviour in entrepreneurial motivation – evidence from Indonesia”</i>	2023	Cogent Education	Young Investors	252	0.54	0.01
29	Owusu G.M.Y.; Anokye F.K.; Otiekku J.K.; Ahinful G.S.	(Owusu et al., 2021)	<i>“What influences the willingness of university students to invest in stocks?”</i>	2021	International Journal of Education Economics and Development	Young Investors	473	0.121	0.078
30	Darmayanti N.P.A; Wiagustini N.L; Artini L.G.S; Candraningrat I.R.	(Darmayanti et al., 2023)	<i>“Driving Millennials to Be Investors: The Case of Investment Decision Performance in Indonesian Capital Market”</i>	2023	Quality - Access to Success	Young Investors	300	0.392	0.01

#### 4. Data Analysis

##### 4.1 Meta-Analysis Procedure

Meta-analysis is a statistical procedure for combining data from multiple studies, allowing researchers to draw more robust conclusions than can be obtained from individual studies alone. To find a synthesized findings from a collection of studies, meta-analysis can provide a more precise estimate of the true effect size, identify potential sources of heterogeneity, and assess the overall consistency of evidence through several key steps: formulating a clear research question, specifying inclusion and exclusion criteria, searching for relevant studies, extracting data from each study, assessing the quality of the study, calculating effect sizes, and synthesizing the evidence using appropriate statistical methods. The guidelines for the Meta analysis were taken from (Viechtbauer, 2010). The analysis employed the Fisher r-to-z transformation of the correlation coefficient as the primary effect size. A random-effects model was applied to the data, and heterogeneity ( $\tau^2$ ) was estimated using the restricted maximum likelihood (REML) method, as outlined by Viechtbauer (2010).

Alongside the estimation of  $\tau^2$ , both Cochran’s Q-test for heterogeneity (Cochran, 1954) and the  $I^2$  statistic are reported. If any heterogeneity is detected (i.e.,  $\tau^2 > 0$ ), regardless of the Q-test result, a prediction interval for the true effect sizes is also included. To identify potential outliers or influential studies, studentized residuals and Cook’s distances are examined. A study is flagged as a potential outlier if its studentized residual exceeds the critical value derived from the Bonferroni-adjusted standard normal distribution for k studies. Similarly, studies with Cook’s distances exceeding the median plus six times the interquartile range are considered influential. To assess publication bias, both the rank correlation test and regression test (using the standard error of the observed effects as a predictor) are employed to evaluate funnel plot asymmetry. The findings of the meta-analysis are synthesized and considered within the framework of established studies considering the strengths and limitations of the included studies and the overall consistency of the evidence.

##### 4.1.1 Effect Size Calculations

To assess the relationship between financial literacy and investment decisions through random effect model, the research work consider 30 articles were included in Table: 2. The study result observed that the Fisher r – to - z transformed correlation coefficients ranged from -0.4784 to 1.4775, with most estimates being positive at 93 per cent level. The estimated average Fisher r – to - z transformed the pooled correlation coefficient using a random-effects model was estimated at 0.4713, with a 95% confidence interval ranging from 0.3086 to 0.6340, indicating a statistically significant effect ( $z = 5.6772$ ,  $p < 0.0001$ ). Results from the Q-test revealed substantial heterogeneity among the true effect sizes ( $Q(29) = 6563.0850$ ,  $p < 0.0001$ ), supported by a  $\tau^2$  value of 0.2025 and an  $I^2$  statistic of 99.29%, suggesting that nearly all observed variability is due to heterogeneity rather than sampling error. The 95% prediction interval for the true effects ranges from  $-0.4256$  to  $1.3682$ , suggesting considerable variability across studies. While the average effect is positive, some individual studies are expected to show negative outcomes, reflecting heterogeneity in the observed results.

**Table: 2 Assessing the relation between Financial Literacy and Investment Decision through Random Effect Model**

Random-Effects Model (k = 30)						
Estimate	se	Z	p	CI Lower Bound	CI Upper Bound	

Intercept	0.471	0.083	5.68	<.001	0.309	0.634
Note. Tau <sup>2</sup> Estimator: Restricted Maximum-Likelihood						
Heterogeneity Statistics						
<b>Tau<sup>2</sup></b>	<b>I<sup>2</sup></b>	<b>H<sup>2</sup></b>	<b>R<sup>2</sup></b>	<b>df</b>	<b>Q</b>	<b>p</b>
0.2025 (SE=0.0543)	99.29%	140.658	.	29	6563.085	<.001

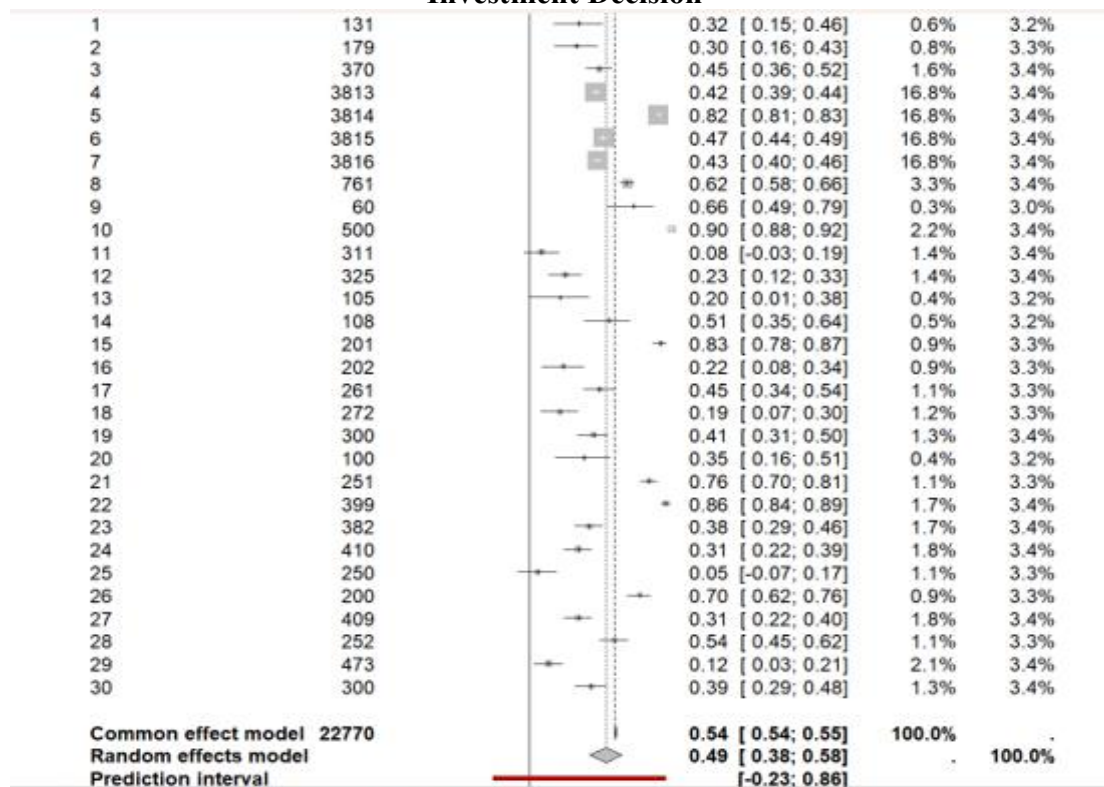
Source: Author Computation. (The Jamovi Project, 2022). Jamovi. (Version 2.3)

#### 4.1.2 Forest Plot under Random Effect Model

The estimated effect size details of the square are provided in the form of forest plot under random effect model for financial literacy and investment decision is shown in Figure: 2. The overall weight of the study is reflected in the form of size squares through the confidence interval indicating the horizontal lines extending from the squares. The Forest Plot was generated to visualize the association between financial literacy and investment decision-making, with the analysis conducted using R Statistical Software (v4.1.2; R Core Team, 2021), offering a comprehensive graphical representation of the effect sizes and their distribution across the studies.

If the confidence interval crosses the vertical line at zero, it suggests the effect is not statistically significant. The pooled effect is represented by random effect model in the black diamond at the bottom with the overall estimated confidence interval is reflected at 0.49.

**Figure: 2 Forest Plot under Random Effect Model for Financial Literacy and Investment Decision**



Source: Author Computation

The overall impact of financial literacy on investment decision-making details are provided with several key statistical findings from the above Figure: 2. The common effect model yield an effect size of 0.54 [0.54; 0.55], suggesting a strong and consistent positive impact of financial literacy on investment decisions across the sample studies. Meanwhile, the random effects model produced an effect size of 0.49 [0.38; 0.58], which appropriately accounts for variability among different studies and contexts. Importantly, since the confidence interval does not include zero, the effect remains statistically significant under random effects theory, by supporting the robust relationship. Furthermore, the prediction interval value ranging from -0.23 to 0.86, reflects the expected variation in the effect size for future studies. The inclusion of zero within the interval suggests that the financial literacy generally influences the investment decisions positively, future research may observe non-significant results under certain conditions.

#### 4.2 Assessing Publication Bias

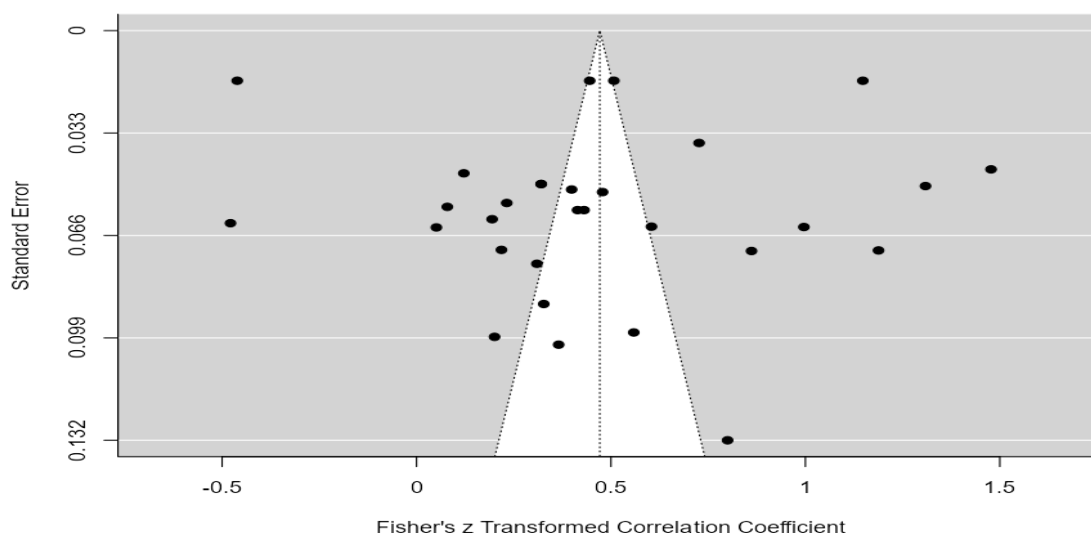
Table: 3 describe the publication bias assessment for the standardized residuals, the results of the study suggest that none of the studies had a value larger than  $\pm 3.1440$ , which indicate there was no presence of outlier in the model. According to the Cook's distances, one potentially influential study (KK) though no outliers were detected. The test results of Funnel plot asymmetry rank highly correlated with the probability and regression p-value stood at 0.9431 and 0.943, respectively with no evidence of publication bias. The Funnel plot and its associated data were used to assess the heterogeneity among studies by indicating that there is no significance asymmetry and thus indicating consistency across the included studies.

**Table 3 Publication Bias Assessment**

Test Name	Value	p-value
Fail-Safe N	35,815	< .001
Begg and Mazumdar Rank Correlation	-0.009	0.943
Egger's Regression	0.071	0.943
Trim and Fill Number of Studies	0	.

**Note:** Fail-safe N Calculation Using the Rosenthal Approach Author Computation. (The Jamovi Project, 2022). Jamovi. (Version 2.3)

**Fig 2 Funnel Plot for assessing Publication Bias**



**Source:** Author Computation. (The Jamovi Project, 2022). Jamovi. (Version 2.3)

The assessment of publication bias in the meta-analysis reveals robust and credible results across multiple statistical tests. The Fail-Safe N (Rosenthal’s Approach) yielded a value of 35,815 with a p-value less than .001, signifying a high level of robustness in the Meta-analytic findings. This suggests that even if an extensive number of unpublished studies existed, the overall conclusion of the meta-analysis would remain unaffected. The statistically significant p-value ( $< .001$ ) further supports the reliability of the observed effect. Additionally, the Begg and Mazumdar rank correlation test returned a Tau value of -0.009 with a p-value of 0.943. The non-significant p-value indicates strong evidence against the presence of publication bias, and the near-zero Tau value reinforces this interpretation by suggesting minimal correlation between effect size and study precision.

The Egger’s regression test results also evaluate the funnel plot asymmetry for publication biasness with an intercept of 0.071 with a p-value of 0.943. The non-significance of the p-value and the near-zero intercept suggest an absence of small-study effects, which indicate minimal risk of publication bias due to asymmetric data. Furthermore, the Trim and Fill method did not impute any additional studies, implying that no studies are missing from the analysis and reinforcing the conclusion that publication bias is unlikely to have an impact. Collectively, the findings offer robust evidence that the results of meta-analysis are not significantly affected by publication bias, thereby supporting the credibility and enhancing the generalizability of the study's conclusions

#### 4.3 Assessing the Moderating Impact of the Study Population

The below Table: 4 results indicate -0.0203 for the effect size due to the moderator = 0.0601, with uncertainty in the estimate with the P-value = 0.735: As the reading is not statistically significant ( $p > 0.05$ ), which means the moderator does not have a significant effect on the correlation. At 5 per cent significant level (-0.138, 0.097). The overall changes range includes zero, which concludes that the population of the study, young investors, individual investors, household investors, and SME investors, as Moderators is not significant for the study period. Overall, the population of the study has no significant moderator effect on the relation between financial literacy and intention to invest.

**Table 4: Moderating Impact of the Study Population**

Mixed-Effects Model (k = 30)						
	Estimate	SE	Z	P	CI Lower Bound	CI Upper Bound
Intercept	0.5281	0.1881	2.81	0.005	0.159	0.897
Moderator	-0.0203	0.0601	.	0.735	-0.138	0.097

**Source:** Author Computation. (The Jamovi Project, 2022). Jamovi. (Version 2.3)

#### 4.4 Assessing the Moderating Impact of year of Publication

According to the Table 5, the estimated results for moderating impact of the year publication envisage with -0.0293 and their size effect is influenced due to the moderator indicates the effect size due to the moderator, SE = 0.0660. The uncertainty of the estimated p-value specifies 0.66. As the reading is not statistically significant ( $p > 0.05$ ), which means the moderator does not have a significant effect on the correlation at 95 per cent CI = [-0.159, 0.100]: the variation in change range was included zero, which concludes that the moderator is not significant. Therefore, the year of study has no significant moderator effect on the relation between financial literacy and intention to investment

**Table 5: Moderating Impact of the Year Publication**

Mixed-Effects Model (k = 30)						
	Estimate	SE	Z	p	CI Lower Bound	CI Upper Bound
Intercept	0.5786	0.256	2.3	0.02	0.077	1.081
Moderator	-0.0293	0.066	.	0.66	-0.159	0.1

**Source:** Author Computation. (The Jamovi Project, 2022). Jamovi. (Version 2.3)

## 5. Discussion and Conclusion

According to OECD (2023), “OECD/INFE 2023 International Survey of Adult Financial Literacy”, it has been acknowledged that financial literacy is a basic skill for the well-being of individuals and society in the 21<sup>st</sup> century should acquire the underlying concepts behind those skills. The OECD 2020 results also stated that many adults don’t have the basic financial skills to make sound investment decisions. Overall, only 34 per cent of the adults in participating countries have reached the minimum target score on financial literacy. The concept of inflation was clearly understood by 84 per cent, but only 63 per cent can apply the concept in practical life while making decisions about saving or investment. In comparison, the financial products before decision making stood only 26 per cent for adults, and 24 per cent tries to seek the advice of the expert before making any investment decisions. Apart from that, the survey also indicates that 15 per cent of the investors face some financial hurdles like scam or fraudulent activities

The report is a huge eye-opener in the field of financial literacy of every individual across all sections of the population by exploring and investigating the research over the years. According to Bhushan (2016), the diversification of investment is done by financially literate individuals while those with limited financial knowledge often opt for safer, low-risk alternatives. Krische (2019) explained the ability to interpret financial statements plays a crucial role for sound investment decisions for literate individual. Khan et al. (2020) observed the higher levels of financial literacy is closely associated with increased participation in financial markets. In the recent years, the younger generation investment decisions are channelled by their level of financial literacy (Kumari, 2020 and Nugraha & Rahadi, 2021). In China’s economy reported that households with greater financial literacy experience higher investment returns. Baihaqqy (2020) strongly advocated for the widespread promotion of financial literacy across all segments of society. According to (Farida et al., 2023), there is an increase of 93 per cent in investors from 2020 -21, most of them belong to Generation Z or millennials. The future of the country is in the hands of young adults, the direction of market will be mainly steered by them. For policymakers to know about the factors that affect these young adults will be of great significance.

The individual investors make up 56.33 per cent, and the household investors form 17 per cent of the study population. According to (Aladangady et.al 2024), a household is defined as a unit where one or two people are economically independent and the rest are dependent on the economic centre, which makes decisions about the investment of family finances. These studies try to understand how the family financial decision of saving and investment is affected by financial literacy, as each unit in the overall effects the whole economy. Among the five studies focused on households, 80 per cent found that the financial literacy plays a dominant role in investment decision making. However, the financial literacy was not found to be significant when the investment decision was made during the informal group’s members, which again a positive move in increasing the financial literacy and declining trend of investment in informal group (Lotto, 2020).

On the other hand, the individual investor is an independent identity who invests money in the financial market and other assets has higher amount of return. Of the 10 studies, 80 per cent have shown the effect of financial literacy on significant effect on investment decisions. (Mahmood et al., 2024). The study also shown a negative effect of financial literacy on investment decisions, as herding sentiment has a major effect on investors' decisions, and secondly, financial literacy makes people think and make rational decisions, which is not possible when the decision is guided by herd behavior with the Beta value of financial literacy is low and not significant (Maheshwari *et al.*, 2024). Irrespective of the demographic group, all investors need to be financially literate to make sound investment decisions. As mentioned by Li et al. (2020), younger individuals with higher levels of financial literacy make wiser investment decisions. Based on the dataset from nine economy, Thomas and Spataro (2018) concluded the research work through econometric analysis with multiple factors by including the endogeneity of financial literacy and human capital, influence individual investment profitability. Khan et al. (2020) further emphasized that financial literacy positively impacts financial market participation, regardless of the type of investment. Overall, the financial literacy enhances investor confidence, encouraging more diversified and rational investment decisions, which not only benefit individuals but also contribute to broader economic development in the country.

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#### **Conflicts of Interest / Competing Interests:**

The authors declare that there are no known financial or personal relationships that could have influenced the work presented in this manuscript.

#### **Ethical Approval:**

Not applicable. The study relies exclusively on secondary data and does not involve any human participants or animals.

#### **Data Availability:**

All datasets analyzed during the study are publicly accessible and have been appropriately cited within the manuscript.

#### **Author Contributions:**

All authors made equal contributions to the conception, design, analysis, and writing of this paper.

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