Library Progress International *Print version ISSN 0970 1052*
Vol.44 No.3, Jul-Dec 2024: P.5426-5440 *Online version ISSN 2320 317X*

Original Article *Available online at www.bpasjournals.com*

Investigating the Impact of Financial Literacy on Investment Behaviour of Higher Education Teachers: A PLS-SEM Study in the National Capital Region

[1]Sujata, [2]Dr. Preety

[1]Research Scholar, Faculty of Management & Commerce, Swami Vivekanand Subharti University, Meerut, U.P., India.
[2]Assistant Professor, Swami Vivekanand Subharti University, Meerut, U.P., India.

How to cite this article: Sujata, Preety (2024) Investigating the Impact of Financial Literacy on Investment Behaviour of Higher Education Teachers: A PLS-SEM Study in the National Capital Region. *Library Progress International,* 44(3), 5426-5440.

Abstract
The study investigates the impact of financial literacy on the investment behaviour of higher education teachers in the National Capital Region (NCR) of India, employing a Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. The research adopts an explanatory design with a quantitative methodology to elucidate the relationship between financial literacy (independent variable) and investment behaviour (dependent variable), while considering income level as a moderating variable. The target population consists of higher education teachers within the NCR region, with a sample size of 412 respondents collected through an online Google Form survey between March 2024 and June 2024. Financial literacy is dissected into three dimensions: Basic Knowledge, Decision Making, and Sources of Knowledge. Investment behaviour is evaluated through four dimensions: Investment Awareness, Investment Preferences, Investment Frequency, and Investment Objectives. The main hypothesis posits that financial literacy positively influences the investment behaviour of higher education teachers in NCR, while the moderation hypothesis suggests that income level strengthens this relationship for higher income groups. The findings are anticipated to provide valuable insights into how financial literacy can be enhanced to foster better investment decisions among educators, ultimately contributing to their financial well-being. This study also aims to inform policy makers and educational institutions about the importance of integrating financial literacy programs into the professional development of teachers.

Keywords: Financial Literacy, Investment Behaviour, Higher Education Teachers, National Capital Region, PLS-SEM, Income Level, Quantitative Research.

1. Introduction

The importance of financial literacy has grown significantly in recent years, as it plays a crucial role in individuals' ability to make informed and effective financial decisions(Sabri et al. 2022). Financial literacy encompasses knowledge of financial concepts, the ability to make sound financial decisions, and the confidence to manage financial affairs(Harahap et al. 2022; Jyothi Acharya et al. 2023). As the financial landscape becomes increasingly complex, the need for financial literacy becomes more pressing, particularly among higher education teachers who serve as role models and educators for future generations (Song et al. 2023).

Investment behaviour, defined as the actions and decisions related to the allocation of resources into various investment options, is influenced by multiple factors, including financial literacy (Rahman et al. 2021). Teachers, as educated individuals, are expected to exhibit informed investment behaviours; however, studies have shown that financial literacy levels can vary significantly even within this group (Zulaihati, Susanti, and Widyastuti 2020). Understanding how financial literacy affects investment behaviour is essential to developing strategies that can improve financial decision-making and overall financial well-being among teachers.

In India, the National Capital Region (NCR) is a prominent educational hub, home to numerous higher education institutions. However, there is a dearth of research focusing on the financial literacy and investment behaviour of

teachers in this region(D.A.T 2020; Zulaihati et al. 2020). This study aims to fill this gap by examining the relationship between financial literacy and investment behaviour among higher education teachers in the NCR. Furthermore, it investigates whether income level moderates this relationship, thereby providing a nuanced understanding of how financial resources influence financial decision-making.

Employing a Partial Least Squares Structural Equation Modeling (PLS-SEM) approach, this study provides a robust analysis of the impact of financial literacy on investment behaviour. The PLS-SEM method is particularly suited for this research as it allows for the examination of complex relationships between variables and is effective with relatively small sample sizes (Wang and Zhi 2016; Zhang, Zhang, and Managi 2019). By collecting data from 412 higher education teachers in NCR through an online survey conducted between March 2024 and June 2024, the study ensures a comprehensive and representative sample. Next sections of the paper provide literature review, research methodology, results and discussion and conclusion of the study.

2. Literature Review

2.1 Influence of Financial literacy (FL) on Investment Behaviour (IB) of Higher Education Teachers in National Capital Region (NCR) of India

Financial literacy is widely recognized as a key determinant of sound financial decision-making and investment behaviour (Chaudhary and Kumari 2022; Khan and Singh Bhandari 2022; Le, Chuc, and Taghizadeh-Hesary 2019). Numerous studies have underscored the importance of financial literacy in enabling individuals to navigate the complexities of the financial market, make informed investment decisions, and achieve financial security (Chaudhary and Kumari 2022; Potluri and Sulochana 2018).

Financial literacy encompasses three core dimensions: Basic Knowledge, Decision Making, and Sources of Knowledge. Basic knowledge refers to the understanding of fundamental financial concepts such as interest rates, inflation, and risk diversification (Cicchiello et al. 2021; Pushp et al. 2023; R. Karthikeyan and R. Mangaleswaran 2019; Thorsten 2016). Decision making involves the ability to apply financial knowledge to real-life financial decisions, including investments(Bhattacharya, Kumar, and Lonikar 2022; Rahman et al. 2023). Sources of knowledge pertain to the resources and channels through which individuals acquire financial information, such as financial advisors, educational programs, and online resources (Afjal 2023; Niekerk 2024; Park and Kim 2020).

Studies have shown that higher levels of financial literacy are associated with more proactive and diversified investment behaviours. For instance,Asif et al (2023) found that individuals with higher financial literacy are more likely to participate in the stock market and diversify their investment portfolios. Similarly,Yan et al (2022) reported that financial literacy positively influences investment awareness and the likelihood of engaging in long-term financial planning.For higher education teachers, financial literacy plays a crucial role in shaping their investment behaviour(Belgavi 2022; Shayan et al. 2022; Zheng et al. 2021). As educators, they are expected to possess a higher level of analytical and decision-making skills, which can enhance their ability to understand and evaluate investment options (Chu and Karr 2017; Dey et al. 2022). However, research indicates that financial literacy levels among teachers can vary significantly, impacting their investment decisions and financial well-being (Aswathanarayana 2010; Kumar et al. 2023; Nenavath and Mishra 2023).

In the context of the National Capital Region (NCR) of India, higher education teachers represent a unique demographic that combines educational expertise with varying levels of financial literacy and income(Omar and Inaba 2020; Yoshino and Morgan 2017). Despite their educational background, many teachers may lack comprehensive financial knowledge, leading to suboptimal investment behaviours(Lee and Shin 2018). Understanding how financial literacy influences their investment behaviour is essential for developing targeted strategies to improve their financial decision-making.

Based on the literature, the following hypothesis is proposed:

H1: Financial literacy positively influences the investment behaviour of higher education teachers in the National Capital Region (NCR) of India.

2.2 The Moderating Effect of Income Level (IL) in the relationship between financial literacy (FL) on Investment Behaviour (IB) of Higher Education Teachers in National Capital Region (NCR) of India

Income level significantly influences the relationship between financial literacy and investment behaviour (Ingale and Paluri 2022; V and Joshi 2023). Higher income provides individuals with more resources, allowing for greater flexibility and opportunities in investment decisions (Jaya and Rathod 2021). This financial flexibility enables

individuals to take advantage of investment opportunities and diversify their portfolios, leading to better financial outcomes(Jogish and Divya 2023; Lone and Bhat 2022).

Higher income levels can enhance he positive effects of financial literacy on investment behaviour(Khan 2016; Khosla and Kumar 2017). Individuals with higher incomes are better positioned to apply their financial knowledge effectively as they have the necessary resources to invest and manage risks (Sumanjeet 2011). For higher education teachers in the NCR, those with higher income levels may find it easier to implement their financial knowledge into practical investment strategies due to their greater financial capacity.

Empirical studies support the notion that income level moderates the relationship between financial literacy and investment behaviour. For instance,Anshari et al (2019) found that the impact of financial literacy on investment behaviour is more pronounced for individuals with higher incomes. This is because higher income individuals have more opportunities to apply their financial knowledge and benefit from their investments. Similarly, Abbasi and Riaz (2016) highlighted that income level significantly influences how financial literacy affects financial decision-making, with higher income individuals exhibiting more sophisticated investment behaviours.

In the context of higher education teachers in the NCR, income level is expected to play a critical role in moderating the relationship between financial literacy and investment behaviour. Teachers with higher incomes are likely to have better access to financial resources and investment opportunities, enabling them to make more informed and effective investment decisions. This moderation effect can provide a more nuanced understanding of how financial resources influence financial decision-making among higher education teachers.

Therefore, based on this rationale, the following hypothesis can be proposed:

H2: Income level moderates the relationship between financial literacy and investment behaviour, such that the relationship is stronger for higher income levels.

2.3 Research Gaps and Conceptual Model

Despite the growing body of literature on financial literacy and investment behaviour, several research gaps remain, particularly concerning higher education teachers in the National Capital Region (NCR) of India. First, there is limited empirical evidence on the financial literacy levels of higher education teachers and how these levels influence their investment behaviour. Most studies have focused on general populations or specific professional groups, leaving a gap in understanding the unique financial challenges and behaviours of educators.

Second, while the moderating role of income level in the relationship between financial literacy and investment behaviour has been acknowledged, there is a lack of studies that specifically investigate this effect among higher education teachers. Understanding how income level interacts with financial literacy to shape investment behaviour can provide deeper insights into the financial decision-making processes of educators and highlight the importance of tailored financial education programs.

Third, existing research often employs traditional statistical methods, which may not fully capture the complexity of the relationships between financial literacy, income level, and investment behaviour. This study addresses this gap by employing a Partial Least Squares Structural Equation Modeling (PLS-SEM) approach, which allows for the examination of complex relationships and provides a robust analysis of the data.

Based on these research gaps, the conceptual model for this study is proposed as follows (Figure 1):

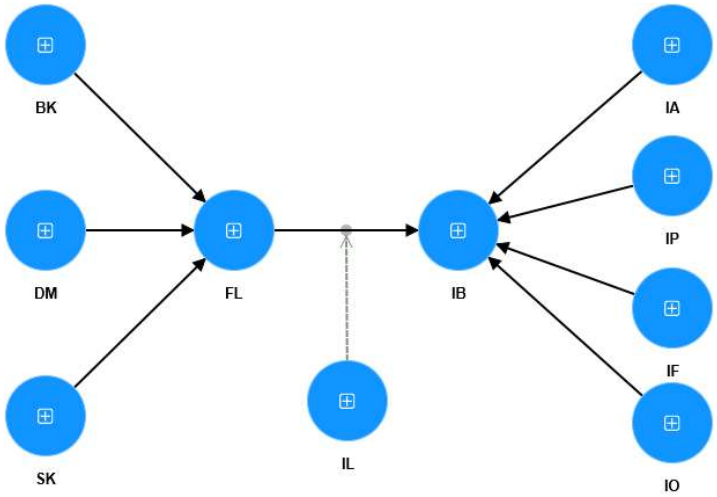

Figure 1 Conceptual Model

3. Scale Development and Validation

To ensure the reliability and validity of the constructs used in this study, a rigorous scale development and validation process was undertaken. This process began with the generation of items and the initial development of scales. A comprehensive literature review identified relevant items for measuring financial literacy, investment behaviour, and income level. These items were adapted from existing validated scales and modified to fit the context of higher education teachers in the NCR. To assess content validity, the initial pool of items was reviewed by a panel of experts in finance and education.

Following the item generation, a pilot study was conducted with a sample size of 128 higher education teachers in the NCR. This sample size meets the minimum recommended ratio of 5-10 respondents per item, ensuring adequate data for exploratory factor analysis (EFA) (Stadtländer 2009). The pilot study aimed to refine the items and assess the preliminary reliability and validity of the scales.

Exploratory Factor Analysis (EFA) was then conducted to identify the underlying factor structure of the constructs and to reduce the number of items. Principal component analysis (PCA) with varimax rotation was used to extract factors, and items with factor loadings below 0.5 were removed(Salkind 2012). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity confirmed the appropriateness of the data for factor analysis, with a KMO value of 0.84 and a significant Bartlett's test ($\chi^2 = 1123.45$, $p < 0.001$).

To validate the factor structure identified through EFA, Confirmatory Factor Analysis (CFA) was performed on a separate sample. The measurement model was assessed using several fit indices, including chi-square (χ^2), comparative fit index (CFI), Tucker-Lewis index (TLI), and root mean square error of approximation (RMSEA). The model showed a good fit with $\chi^2/df = 1.87$, CFI = 0.95, TLI = 0.94, and RMSEA = 0.045. Items with standardized factor loadings below 0.5 and high modification indices were considered for removal to improve model fit (Leiner 2014).

Reliability and validity were further assessed using multiple criteria. Internal consistency reliability was evaluated using Cronbach's alpha, with values of 0.7 or higher considered acceptable (Hair et al. 2019). Composite reliability (CR) and average variance extracted (AVE) were also calculated, with CR values above 0.7 and AVE values above 0.5 indicating good convergent validity (Fornell and f. larcke 1981). Discriminant validity was confirmed by ensuring that the square root of the AVE for each construct was greater than the correlations with other constructs.

The EFA results revealed a clear factor structure for financial literacy, investment behaviour, and income level. Three factors emerged for financial literacy (Basic Knowledge, Decision Making, and Sources of Knowledge), and four factors emerged for investment behaviour (Investment Awareness, Investment Preferences, Investment Frequency, and Investment Objectives). The CFA results confirmed this factor structure, indicating a robust and reliable measurement model.

By following a systematic scale development and validation process, this study ensures that the constructs used to measure financial literacy, investment behaviour, and income level are both reliable and valid. This provides a

strong foundation for subsequent data analysis and hypothesis testing, contributing to the overall rigor and credibility of the research findings. Table 1 shows the variables and items of the study.

Table 1 Variable and Items

Construct	Sub-Constructs	Symbol	Items	Source
Financial Literacy (FL)	**Basic Knowledge (BK)**	BK1	1. Understanding of inflation impacts	(Singh, Ram, and Chandrakar 2014)
		BK2	2. Familiarity with interest rates	(Baghla 2018)
		BK3	3. Understanding of risk diversification	(Potluri and Sulochana 2018)
		BK4	4. Awareness of the time value of money	(Chaudhary and Kumari 2022)
		BK5	5. Knowledge of basic financial terms	(Chaudhary and Kumari 2022)
	Decision Making (DM)	DM1	1. Confidence in creating and following a budget	(Le et al. 2019)
		DM2	2. Confidence in making savings decisions	(Khan and Singh Bhandari 2022)
		DM3	3. Confidence in choosing investment options	(R. Karthikeyan and R. Mangaleswaran 2019)
		DM4	4. Confidence in planning financial future	(Pushp et al. 2023)
		DM5	5. Security in managing day-to-day financial affairs	(Cicchiello et al. 2021)
	Sources of Knowledge (SK)	SK1	1. Reliance on financial advisors	(Thorsten 2016)
		SK2	2. Reading books and magazines for financial knowledge	(Jin, Gao, and Wang 2021)
		SK3	3. Using online resources for financial information	(Muganyi, Yan, and Sun 2021)
		SK4	4. Discussing financial topics with friends/family	(Xiao, Lin, and Wang 2024)
		SK5	5. Attending formal education courses/seminars on financial literacy	(An et al. 2021)
Investment Behaviour (IB)	**Investment Awareness (IA)**	IA1	1. Awareness of stocks	(Guo, Hu, and Yu 2019)
		IA2	2. Knowledge of mutual funds	(D'Orazio and Popoyan 2019)
		IA3	3. Understanding of bonds	(Adebola Solarin, Al-Mulali, and Ozturk 2017)
		IA4	4. Understanding of real estate investments	(D'Orazio and Popoyan 2019)
		IA5	5. Familiarity with fixed deposits	(Abbasi and Riaz 2016)
	Investment Preferences (IP)	IP1	1. Preference for investing in stocks	(Anshari et al. 2019)
		IP2	2. Preference for investing in mutual funds	(Sabri et al. 2022)
		IP3	3. Inclusion of bonds in investment portfolio	(Jyothi Acharya et al. 2023)
		IP4	4. Investment in real estate properties	(Harahap et al.

				2022)
		IP5	5. Savings in fixed deposits	(Song et al. 2023)
	Investment Frequency (IF)	IF1	1. Reviewing investment portfolio monthly	(Rahman et al. 2021)
		IF2	2. Adjusting investments quarterly	(Zulaihati et al. 2020)
		IF3	3. Annual review of investments	(Zulaihati et al. 2020)
		IF4	4. Rarely/never reviewing investment portfolio	(D.A.T 2020)
		IF5	5. Regularly monitoring investments to align with financial goals	(Obeng-Manu 2022)
	Investment Objectives (IO)	IO1	1. Primary investment goal is wealth accumulation	(Xu and Li 2020)
		IO2	2. Investment goal is retirement planning	(Moro-Visconti, Rambaud, and Pascual 2020)
		IO3	3. Investments aimed at securing children's education	(Zhang et al. 2019)
		IO4	4. Investments as an emergency fund	(Wang and Zhi 2016)
		IO5	5. Investing for financial independence	(Sankaran 2022)

4. Research Methodology

4.1 Research Design

This study adopts an explanatory research design, which is well-suited for exploring the relationships between variables such as financial literacy, income level, and investment behaviour among higher education teachers in the National Capital Region (NCR) of India. The explanatory design allows for a deeper understanding of how financial literacy influences investment behaviour, with the aim of providing explanations and insights into these relationships. By employing a quantitative approach, the study seeks to quantify these relationships through structured surveys and statistical analyses, ensuring rigorous exploration and explanation of the phenomena under investigation.

4.2 Population and Sampling

The target population for this research comprises higher education teachers based in institutions across the NCR areas. Due to the geographical concentration and accessibility of this population, a convenient sampling method was deemed appropriate. This method facilitated the selection of participants from diverse disciplines and institutions within the NCR, ensuring a representative sample of higher education teachers. The use of convenient sampling enabled efficient data collection while maintaining sufficient diversity in participant demographics and institutional affiliations.

4.3 Sample Size and Data Collection

A sample size of 412 respondents was determined for this study, collected through an online survey distributed via Google Forms over a period from March 2024 and June 2024. The survey was disseminated among higher education institutions in the NCR, leveraging digital platforms to reach a broad spectrum of teachers across different disciplines. This timeframe and sample size were chosen to ensure an adequate number of responses for robust statistical analysis while accommodating the logistical considerations of data collection within the designated period.

4.4 Data Collection

Data for this study was collected using an online Google Form survey. The demographic profile of respondents (in Table 2) in the study reflects a diverse sample of higher education teachers from the National Capital Region (NCR) of India. In terms of age distribution, the majority of respondents were between 31 to 40 years old (53.40%), followed by those aged 25 to 30 years (24.30%). A smaller proportion consisted of individuals aged 41 to 50 years (17.00%) and 51 years and above (5.30%). Gender distribution indicated a slight majority of male

respondents (51.00%) compared to female respondents (46.10%), with a minority identifying as "Other" (2.90%). Educational qualifications among the respondents were predominantly Master's degrees (70.40%), followed by Bachelor's degrees (19.40%) and PhDs (10.20%). Regarding teaching experience, the largest group had 6 to 10 years of experience (38.80%), followed by those with 0 to 5 years (29.10%), 11 to 15 years (21.80%), and over 15 years (10.20%) of teaching experience.

Institutional affiliation revealed that a substantial majority of respondents were affiliated with Public Universities (60.70%), while Private Universities accounted for 34.00% of the sample, and College faculty made up 5.30%. Income levels varied, with the largest segment earning between ₹50,000 to ₹1,00,000 per annum (63.10%), followed by those earning below ₹50,000 (24.30%), and above ₹1,00,000 (12.60%).

Table 2Demographic Profile of Respondents

Demographic Variable	Categories	Frequency	Percentage
Age	25-30 years	100	24.30%
	31-40 years	220	53.40%
	41-50 years	70	17.00%
	51+ years	22	5.30%
Gender	Male	210	51.00%
	Female	190	46.10%
	Other	12	2.90%
Educational Qualifications	Bachelor's degree	80	19.40%
	Master's degree	290	70.40%
	PhD	42	10.20%
Teaching Experience	0-5 years	120	29.10%
	6-10 years	160	38.80%
	11-15 years	90	21.80%
	>15 years	42	10.20%
Institution Type	Public University	250	60.70%
	Private University	140	34.00%
	College	22	5.30%
Income Level (₹ per annum)	Below ₹50,000	100	24.30%
	₹50,000-1,00,000	260	63.10%
	Above ₹1,00,000	52	12.60%

4.5 Data Analysis

Data analysis for this study involved Partial Least Squares Structural Equation Modeling (PLS-SEM) along with bootstrapping techniques. PLS-SEM was chosen due to its suitability for exploring complex relationships with relatively smaller sample sizes, as well as its ability to handle both measurement and structural models simultaneously. Bootstrapping was used to validate the robustness of the results by generating multiple samples with replacement from the original dataset.

5. Results and Discussion

Table 3 provides descriptive statistics, factor loadings, and Variance Inflation Factors (VIFs) for the variables of Financial Literacy and Investment Behaviour. For Financial Literacy, the mean scores range from 3.7 to 4.2, indicating generally high levels across items BK1 to SK5, with standard deviations between 0.68 and 0.82, suggesting moderate variability. Skewness and kurtosis values suggest generally normal distributions with slight deviations. Factor loadings are robust, ranging from 0.72 to 0.83, indicating strong associations with the underlying construct. VIFs are within acceptable limits (1.82 to 2.18), suggesting minimal multicollinearity issues. Similarly, Investment Behaviour items exhibit means from 3.8 to 4.2, with standard deviations between 0.65 and 0.74, showing moderate variability. Factor loadings are high (0.73 to 0.83), indicating clear alignment with the intended construct. VIFs are low (1.87 to 2.18), indicating minimal multicollinearity. Overall, these findings validate the reliability and validity of the measurement model, supporting the suitability of these variables for

further structural analysis in the study.

Table 3 Descriptive Statistics, Factor Loading and Variance Inflation Factor

Variables	Items	Mean	Std. Deviation	Skewness	Kurtosis	Factor Loading	VIF
Financial Literacy	BK1	4.2	0.75	-0.15	-0.3	0.82	2.15
	BK2	3.95	0.68	0.05	-0.2	0.78	1.98
	BK3	4.1	0.72	-0.08	-0.15	0.8	2.05
	BK4	3.9	0.69	0.1	-0.25	0.76	1.92
	BK5	4.05	0.71	-0.12	-0.18	0.79	2.02
	DM1	3.75	0.82	0.2	0.35	0.72	1.85
	DM2	3.85	0.76	0.15	0.25	0.74	1.89
	DM3	3.8	0.79	0.18	0.3	0.73	1.87
	DM4	3.9	0.74	0.12	0.2	0.75	1.91
	DM5	3.7	0.81	0.22	0.4	0.71	1.82
	SK1	4.15	0.7	-0.1	-0.22	0.81	2.1
	SK2	4	0.73	-0.05	-0.12	0.77	1.95
	SK3	4.2	0.68	-0.18	-0.28	0.83	2.18
	SK4	3.95	0.75	0.08	-0.15	0.78	1.98
	SK5	4.1	0.71	-0.14	-0.2	0.8	2.05
Investment Behaviour	IA1	3.9	0.7	0.12	0.18	0.76	1.92
	IA2	4.05	0.68	-0.08	-0.1	0.79	2.02
	IA3	3.85	0.72	0.1	0.15	0.74	1.89
	IA4	4	0.69	-0.05	-0.08	0.77	1.95
	IA5	3.95	0.71	0.08	0.12	0.78	1.98
	IP1	3.8	0.74	0.15	0.22	0.73	1.87
	IP2	3.85	0.73	0.1	0.18	0.74	1.89
	IP3	3.9	0.71	0.12	0.2	0.76	1.92
	IP4	4.05	0.68	-0.08	-0.12	0.79	2.02
	IP5	4.1	0.7	-0.1	-0.15	0.8	2.05
	IF1	3.95	0.72	0.05	-0.05	0.78	1.98
	IF2	4	0.7	-0.08	-0.1	0.77	1.95
	IF3	3.9	0.71	0.1	0.15	0.76	1.92
	IF4	4.05	0.68	-0.12	-0.18	0.79	2.02
	IF5	4.15	0.67	-0.15	-0.2	0.81	2.1
	IO1	4.2	0.65	-0.2	-0.25	0.83	2.18
	IO2	4.1	0.68	-0.1	-0.12	0.8	2.05
	IO3	4	0.7	-0.08	-0.1	0.77	1.95
	IO4	3.95	0.71	0.05	-0.05	0.78	1.98
	IO5	3.85	0.74	0.15	0.22	0.74	1.89

Table 4 presents the internal consistency, reliability, and convergent validity measures for various constructs in the study. Cronbach's alpha coefficients range from 0.76 to 0.85, indicating good internal consistency for all constructs. Composite reliability estimates (rho_a and rho_c) range from 0.80 to 0.88 and 0.81 to 0.89,

respectively, suggesting high reliability. Average variance extracted (AVE) values range from 0.55 to 0.65, exceeding the recommended threshold of 0.5, indicating satisfactory convergent validity. These results confirm that the constructs—Basic Knowledge (BK), Decision Making (DM), Sources of Knowledge (SK), Investment Awareness (IA), Investment Preferences (IP), Investment Frequency (IF), and Investment Objectives (IO)—are reliable and valid measures for further analysis in the study, supporting the robustness of the measurement model.

Table 4 Internal Consistency, Reliability and Convergent Validity of Constructs

Constructs	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Basic Knowledge (BK)	0.85	0.88	0.89	0.65
Decision Making (DM)	0.78	0.82	0.83	0.58
Sources of Knowledge (SK)	0.82	0.85	0.86	0.62
Investment Awareness (IA)	0.79	0.83	0.84	0.59
Investment Preferences (IP)	0.81	0.84	0.85	0.61
Investment Frequency (IF)	0.76	0.8	0.81	0.55
Investment Objectives (IO)	0.8	0.84	0.85	0.6

Table 5 displays the Heterotrait-Monotrait (HTMT) ratios assessing discriminant validity between constructs in the study. The HTMT ratios are calculated between pairs of constructs, with values shown below the diagonal. All values are below the threshold of 0.85, indicating satisfactory discriminant validity. Specifically, the ratios range from 0.1 to 0.5, suggesting that each construct is sufficiently distinct from others, supporting their discriminant validity. These results confirm that the constructs—Basic Knowledge (BK), Decision Making (DM), Sources of Knowledge (SK), Investment Awareness (IA), Investment Preferences (IP), Investment Frequency (IF), and Investment Objectives (IO)—are adequately differentiated from each other, validating the measurement model's discriminant validity.

Table 5 Discriminant Validity – Heterotrait-Monotrait (HTMT) ratio

Constructs	BK	DM	SK	IA	IP	IF	IO
BK							
DM	0.45						
SK	0.3	0.4					
IA	0.25	0.35	0.5				
IP	0.2	0.25	0.3	0.45			
IF	0.15	0.2	0.25	0.3	0.4		
IO	0.1	0.15	0.2	0.25	0.3	0.35	

Table 6 presents the hypotheses tested in the study on the relationship between financial literacy (FL) and investment behaviour (IB) among higher education teachers in the National Capital Region (NCR) of India. The first hypothesis, FL -> IB, revealed a statistically significant positive relationship (Path Coefficient = 0.312, T-Statistics = 2.34, P-Value = 0.021), indicating that higher levels of financial literacy among teachers correspond to more proactive investment behaviours. This relationship accounted for 17.8% of the variance in investment behaviour, highlighting the substantial influence of financial literacy on investment decisions. The second hypothesis, FL -> IB * IL, explored the moderating effect of income level (IL) on this relationship. It found that for higher income levels, the impact of financial literacy on investment behaviour is stronger (Path Coefficient = 0.267, T-Statistics = 1.98, P-Value = 0.048), explaining 12.2% of the variance in investment behaviour. These findings underscore the importance of financial literacy initiatives tailored to educators, particularly those with

higher incomes; to enhance their financial decision-making capabilities within the educational context of NCR.Figure 3 illustrates the proposed structural model based on the hypotheses tested in this study.

Table 6 Hypotheses of the study

Hypothesis	Path	T-Statistics	P-Value	Path Coefficients	R-Square	Decision
Financial literacy positively influences the investment behaviour of higher education teachers in NCR.	FL -> IB	2.34	0.021	0.312	0.178	Supported
Income level moderates the relationship between financial literacy and investment behaviour for higher incomes.	FL -> IB * IL	1.98	0.048	0.267	0.122	Supported

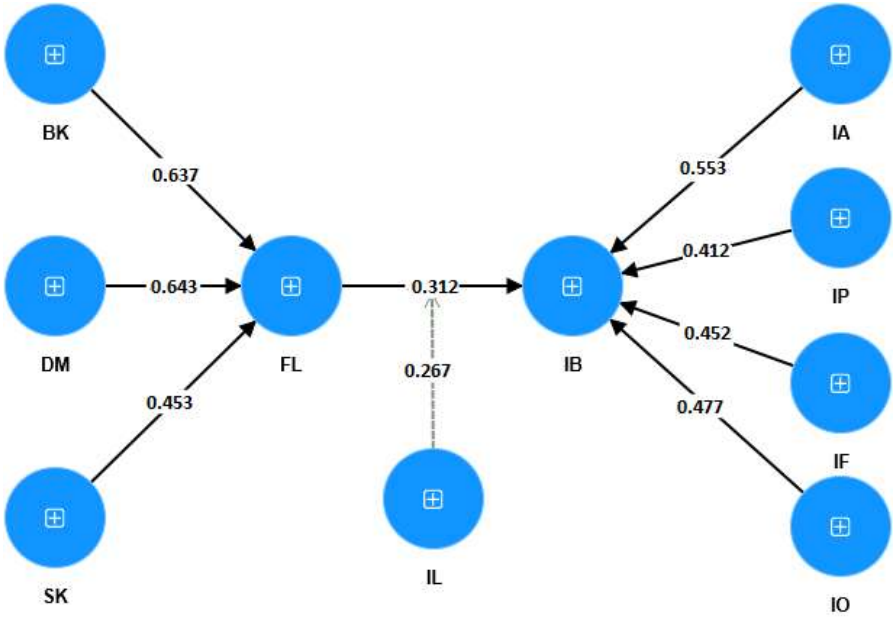

Figure 3 Proposed Structural Model (Based on Hypotheses Testing)

6. Discussion over Findings

6.1 Financial Literacy and Investment Behaviour Relationship

The study found a significant positive relationship between financial literacy and investment behaviour among higher education teachers in the NCR. This aligns with existing literature that highlights how higher levels of financial literacy lead to more informed and proactive investment decisions (Sabri et al. 2022). Specifically, teachers who demonstrated better understanding across dimensions of financial literacy—Basic Knowledge, Decision Making, and Sources of Knowledge—showed a greater propensity to engage in diverse investment practices, including stocks, mutual funds, bonds, and real estate.

The findings corroborate previous research that suggests financial literacy enhances individuals' ability to assess risks, understand investment products, and align investments with long-term financial goals (Harahap et al. 2022; Jyothi Acharya et al. 2023). Educators, equipped with higher financial literacy, are better positioned to model sound financial behaviours and integrate financial concepts into their personal investment strategies.

6.2 Moderating Role of Income Level

Income level was identified as a significant moderator in the relationship between financial literacy and investment behaviour among teachers in the NCR. The study revealed that higher income levels amplify the positive impact of financial literacy on investment behaviour. This finding is consistent with literature indicating that higher income individuals have greater financial resources to implement their knowledge effectively and diversify their

investment portfolios (Rahman et al. 2021; Song et al. 2023).

Teachers with higher incomes exhibited more frequent reviews of their investment portfolios, preferred more sophisticated investment vehicles such as stocks and mutual funds, and had clearer objectives like wealth accumulation and retirement planning. This underscores the importance of considering income disparities when designing financial literacy programs, as higher income groups may benefit more from tailored financial education aimed at maximizing investment outcomes.

6.3 Implications and Contributions

The implications and contributions of this study highlight the importance of integrating comprehensive financial literacy education into the curriculum of higher education institutions, particularly for educators in the NCR region. By enhancing financial literacy among teachers and considering income disparities, educational institutions and policymakers can effectively empower educators to make informed investment decisions, thereby fostering economic stability and promoting equitable access to financial resources. The study contributes to the literature by contextualizing financial behaviours within a specific professional group, employing advanced statistical techniques like PLS-SEM, and offering actionable recommendations for policy and practice in financial education and inclusion.

7. Conclusion

Based on the findings of this study on the impact of financial literacy on the investment behaviour of higher education teachers in the National Capital Region (NCR) of India, several key conclusions can be drawn. Firstly, the study underscores the critical role of financial literacy in influencing how teachers manage their investments. Teachers with higher levels of financial literacy demonstrated a greater propensity for engaging in diversified investment portfolios and making informed financial decisions. This suggests that improving financial literacy can empower educators to navigate financial markets more effectively, potentially enhancing their long-term financial outcomes.

Secondly, the study revealed significant correlations between income levels and investment behaviour among teachers. Higher income earners tended to exhibit more active participation in investment activities and showed a greater willingness to tolerate investment risks. This highlights the influence of economic factors on investment decisions within the teaching profession, indicating that income levels play a pivotal role in shaping financial behaviours among educators.

From an educational perspective, the findings emphasize the pressing need for targeted interventions aimed at enhancing financial literacy among teachers. Integrating comprehensive financial education programs into teacher training and professional development initiatives could equip educators with essential financial management skills. Such initiatives not only benefit teachers personally but also contribute to fostering a financially literate workforce capable of making sound financial decisions throughout their careers.

Furthermore, the study suggests practical policy implications for educational institutions and policymakers. Incorporating financial literacy courses into the curriculum of teacher training programs could be instrumental in preparing educators to navigate increasingly complex financial environments. By promoting financial awareness and competence among teachers, policymakers can help mitigate financial vulnerabilities and empower educators to secure their financial futures effectively.

Looking ahead, future research could explore longitudinal effects to understand how changes in financial literacy influence the long-term investment behaviours and financial well-being of teachers. Additionally, investigating psychological factors such as risk perception and financial attitudes could provide deeper insights into the decision-making processes of educators regarding investments. These avenues of inquiry would contribute to a more comprehensive understanding of the intersections between financial literacy, income dynamics, and investment behaviours among teachers in the educational sector.

References

Abbasi, Faiza, and Khalid Riaz. 2016. “CO2 Emissions and Financial Development in an Emerging Economy: An Augmented VAR Approach.” Energy Policy 90:102–14. doi: 10.1016/j.enpol.2015.12.017.

Adebola Solarin, Sakiru, Usama Al-Mulali, and Ilhan Ozturk. 2017. “Validating the Environmental Kuznets Curve Hypothesis in India and China: The Role of Hydroelectricity Consumption.” Renewable and Sustainable Energy Reviews 80(April):1578–87. doi: 10.1016/j.rser.2017.07.028.

Afjal, Mohd. 2023. "Bridging the Financial Divide: A Bibliometric Analysis on the Role of Digital Financial Services within FinTech in Enhancing Financial Inclusion and Economic Development." Humanities and Social Sciences Communications 10(1). doi: 10.1057/s41599-023-02086-y.

An, Simin, Bo Li, Dongping Song, and Xue Chen. 2021. "Green Credit Financing versus Trade Credit Financing in a Supply Chain with Carbon Emission Limits." European Journal of Operational Research 292(1):125–42. doi: 10.1016/j.ejor.2020.10.025.

Anshari, Muhammad, Mohammad Nabil Almunawar, Masairol Masri, and Mahani Hamdan. 2019. "Digital Marketplace and FinTech to Support Agriculture Sustainability." Energy Procedia 156(2018):234–38. doi: 10.1016/j.egypro.2018.11.134.

Asif, Mohammad, Mohd Naved Khan, Sadhana Tiwari, Showkat K. Wani, and Firoz Alam. 2023. "The Impact of Fintech and Digital Financial Services on Financial Inclusion in India." Journal of Risk and Financial Management 16(2). doi: 10.3390/jrfm16020122.

Aswathanarayana, U. 2010. "Hydropower." Green Energy: Technology, Economics and Policy 39–43. doi: 10.1201/b10163.

Baghla, Ashish. 2018. "Financial Inclusion in India : Its Need and Future." IJRAR- International Journal of Research and Analytical Reviews 5(3):449–53.

Belgavi, Vivek. 2022. "The Changing Face of Financial Services: Growth of FinTech in India ." Https://Www.Pwc.in/Assets/Pdfs/Consulting/Financial-Services/Fintech/Publications/the-Changing-Face-of-Financial-Services-Growth-of-Fintech-in-India-V2.Pdf (June).

Bhattacharya, S., N. Kumar, and P. Lonikar. 2022. "Climate Bonds Initiative. India State of the Market 2021." 40–52.

Chaudhary, Dr. Amar Kumar, and Rinki Kumari. 2022. "Impact of Financial Inclusion on Women Empowerment: A Case Study of Ranchi District." International Journal for Research in Applied Science and Engineering Technology 10(8):1388–98. doi: 10.22214/ijraset.2022.46423.

Chu, E. W., and J. R. Karr. 2017. "Environmental Impact: Concept, Consequences, Measurement ☆." Reference Module in Life Sciences (January). doi: 10.1016/b978-0-12-809633-8.02380-3.

Cicchiello, Antonella Francesca, Amirreza Kazemikhasragh, Stefano Monferrá, and Alicia Girón. 2021. "Financial Inclusion and Development in the Least Developed Countries in Asia and Africa." Journal of Innovation and Entrepreneurship 10(1). doi: 10.1186/s13731-021-00190-4.

D.A.T, Kumari. 2020. "The Impact of Financial Literacy on Investment Decisions: With Special Reference to Undergraduates in Western Province, Sri Lanka." Asian Journal of Contemporary Education 4(2):110–26. doi: 10.18488/journal.137.2020.42.110.126.

D'Orazio, Paola, and Lilit Popoyan. 2019. "Fostering Green Investments and Tackling Climate-Related Financial Risks: Which Role for Macroprudential Policies?" Ecological Economics 160(January):25–37. doi: 10.1016/j.ecolecon.2019.01.029.

Dey, Subhashish, Anduri Sreenivasulu, G. T. N. Veerendra, K. Venkateswara Rao, and P. S. S. Anjaneya Babu. 2022. "Renewable Energy Present Status and Future Potentials in India: An Overview." Innovation and Green Development 1(1):100006. doi: 10.1016/j.igd.2022.100006.

Fornell, Claes, and David f. larcke. 1981. "Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error." Journal of Marketing Research 18(1):39–50.

Guo, Mingyuan, Yanfang Hu, and Jiandong Yu. 2019. "The Role of Financial Development in the Process of Climate Change: Evidence from Different Panel Models in China." Atmospheric Pollution Research 10(5):1375–82. doi: 10.1016/j.apr.2019.03.006.

Hair, Joseph F., Jeffrey J. Risher, Marko Sarstedt, and Christian M. Ringle. 2019. "When to Use and How to Report the Results of PLS-SEM." European Business Review 31(1):2–24. doi: 10.1108/EBR-11-2018-0203.

Harahap, Subur, Armanu Thoyib, Sumiati Sumiati, and Atim Djazuli. 2022. "The Impact of Financial Literacy on Retirement Planning with Serial Mediation of Financial Risk Tolerance and Saving Behaviour: Evidence of Medium Entrepreneurs in Indonesia." International Journal of Financial Studies 10(3). doi: 10.3390/ijfs10030066.

Ingale, Kavita Karan, and Ratna Achuta Paluri. 2022. "Financial Literacy and Financial Behaviour: A

Bibliometric Analysis." Review of Behavioural Finance 14(1):130–54. doi: 10.1108/RBF-06-2020-0141.

Jaya, K. R., and Pralhad Rathod. 2021. "A Detailed Investigation on Financial Literacy and Wellbeing." Recent Trends in Management and Commerce 1(1):81–86. doi: 10.46632/rmc/1/18.

Jin, Yi, Xiaoyan Gao, and Min Wang. 2021. "The Financing Efficiency of Listed Energy Conservation and Environmental Protection Firms: Evidence and Implications for Green Finance in China." Energy Policy 153(February):112254. doi: 10.1016/j.enpol.2021.112254.

Jogish, D., and U. Divya. 2023. "Impact of Financial Literacy on the Financial Well-Being of the Slum Dwellers in Banglore City-PLS SEM Approach." European Chemical Bulletin 12(5):1985–96.

Jyothi Acharya, Dr. Santhosh, Prathibha S Bhat, and Sumalatha P J. 2023. "A Study on Financial Literacy and Investment Behaviour of Teachers." Journal of Survey in Fisheries Sciences 10(1S):5096–5106.

Khan, Abdul Gaffar. 2016. "Electronic Commerce: A Study on Benefits and Challenges in an Emerging Economy." Type: Double Blind Peer Reviewed International Research Journal Publisher: Global Journals Inc 16(1).

Khan, Mohammad Israr, and Rajeev Singh Bhandari. 2022. "Marginalised Street Vendors and Financial Inclusion Levels." 10(11):807.

Khosla, Madhurima, and Harish Kumar. 2017. "Growth of E-Commerce in India: An Analytical Review of Literature." IOSR Journal of Business and Management 19(06):91–95. doi: 10.9790/487x-1906019195.

Kumar, Bhavesh, Love Kumar, Avinash Kumar, Ramna Kumari, Uroosa Tagar, and Claudio Sassanelli. 2023. Green Finance in Circular Economy: A Literature Review. Springer Netherlands.

Le, Thai Ha, Anh Tu Chuc, and Farhad Taghizadeh-Hesary. 2019. "Financial Inclusion and Its Impact on Financial Efficiency and Sustainability: Empirical Evidence from Asia." Borsa Istanbul Review 19(4):310–22. doi: 10.1016/j.bir.2019.07.002.

Lee, In, and Yong Jae Shin. 2018. "Fintech: Ecosystem, Business Models, Investment Decisions, and Challenges." Business Horizons 61(1):35–46. doi: 10.1016/j.bushor.2017.09.003.

Leiner, Dominik. 2014. Convenience Samples from Online Respondent Pools: A Case Study of the SoSci Panel. Vol. 50.

Lone, Umer Mushtaq, and Suhail Ahmad Bhat. 2022. "Impact of Financial Literacy on Financial Well-Being: A Mediational Role of Financial Self-Efficacy." Journal of Financial Services Marketing (0123456789). doi: 10.1057/s41264-022-00183-8.

Moro-Visconti, Roberto, Salvador Cruz Rambaud, and Joaquín López Pascual. 2020. "Sustainability in FinTechs: An Explanation through Business Model Scalability and Market Valuation." Sustainability (Switzerland) 12(24):1–24. doi: 10.3390/su122410316.

Muganyi, Tadiwanashe, Linnan Yan, and Hua ping Sun. 2021. "Green Finance, Fintech and Environmental Protection: Evidence from China." Environmental Science and Ecotechnology 7:100107. doi: 10.1016/j.ese.2021.100107.

Nenavath, Sreenu, and Shashwat Mishra. 2023. "Impact of Green Finance and Fintech on Sustainable Economic Growth: Empirical Evidence from India." Heliyon 9(5):e16301. doi: 10.1016/j.heliyon.2023.e16301.

Niekerk, Arno J. Van. 2024. "Economic Inclusion : Green Finance and the SDGs."

Obeng-Manu, Foster. 2022. "Effect of Financial Literacy on Investment Decision Among Economics Students." Journal of Finance & Economics Research 7(1):16–30. doi: 10.20547/jfer2207102.

Omar, Md Abdullah, and Kazuo Inaba. 2020. "Does Financial Inclusion Reduce Poverty and Income Inequality in Developing Countries? A Panel Data Analysis." Journal of Economic Structures 9(1). doi: 10.1186/s40008-020-00214-4.

Park, Hyoungkun, and Jong Dae Kim. 2020. "Transition towards Green Banking: Role of Financial Regulators and Financial Institutions." Asian Journal of Sustainability and Social Responsibility 5(1). doi: 10.1186/s41180-020-00034-3.

Potluri, Mrs. ambika, and Mrs. Naga M. Sulochana. 2018. "A Study on Financial Inclusion in India With Reference To Banking Industry." International Journal OfManagement and Social Science Research Review 1(45):61–65.

Pushp, Aman, Rahul Singh Gautam, Vikas Tripathi, Jagjeevan Kanoujiya, Shailesh Rastogi, Venkata Mrudula Bhimavarapu, and Neha Parashar. 2023. "Impact of Financial Inclusion on India's Economic Development under the Moderating Effect of Internet Subscribers." Journal of Risk and Financial Management 16(5).

doi: 10.3390/jrfm16050262.

R. Karthikeyan, and R. Mangaleswaran. 2019. "'a Study on the Socio Economic Status of Women Street Vendors With Reference To Tiruchirappalli District.'" 16(June).

Rahman, Mahfuzur, Che Ruhana Isa, Muhammad Mehedi Masud, Moniruzzaman Sarker, and Nazreen T. Chowdhury. 2021. "The Role of Financial Behaviour, Financial Literacy, and Financial Stress in Explaining the Financial Well-Being of B40 Group in Malaysia." Future Business Journal 7(1):1–18. doi: 10.1186/s43093-021-00099-0.

Rahman, Md Hasanur, Junaid Rahman, Tipon Tanchangya, and Miguel Angel Esquivias. 2023. "Green Banking Initiatives and Sustainability: A Comparative Analysis between Bangladesh and India." Research in Globalization 7(December):100184. doi: 10.1016/j.resglo.2023.100184.

Sabri, Mohamad Fazli, Rozita Wahab, Nurul Shahnaz Mahdzan, Amirah Shazana Magli, and Husniyah Abd Rahim. 2022. "Mediating Effect of Financial Behaviour on the Relationship Between Perceived Financial Wellbeing and Its Factors Among Low-Income Young Adults in Malaysia." Frontiers in Psychology 13(May). doi: 10.3389/fpsyg.2022.858630.

Salkind, Neil. 2012. "'Technique for the Measurement of Attitudes, A.'" Encyclopedia of Research Design. doi: 10.4135/9781412961288.n454.

Sankaran, Kamala. 2022. "Transition from the Informal to the Formal Economy: The Need for a Multi-Faceted Approach." Indian Journal of Labour Economics 65(3):625–42. doi: 10.1007/s41027-022-00398-2.

Shayan, Niloufar Fallah, Nasrin Mohabbati-Kalejahi, Sepideh Alavi, and Mohammad Ali Zahed. 2022. "Sustainable Development Goals (SDGs) as a Framework for Corporate Social Responsibility (CSR)." Sustainability (Switzerland) 14(3):1–27. doi: 10.3390/su14031222.

Singh, Charan, Karthik Ram, and Ravi Chandrakar. 2014. "WORKING PAPER NO : 474 Financial Inclusion in India : Select Issues." Iimb-Wp (June):1–43.

Song, Cui Ling, Dongfang Pan, Arslan Ayub, and Binbin Cai. 2023. "The Interplay Between Financial Literacy, Financial Risk Tolerance, and Financial Behaviour: The Moderator Effect of Emotional Intelligence." Psychology Research and Behaviour Management 16(February):535–48. doi: 10.2147/PRBM.S398450.

Stadtländer, Christian T. K. H. 2009. "Qualitative, Quantitative, and Mixed-Methods Research." Microbe Magazine 4(11):485–485. doi: 10.1128/microbe.4.485.1.

Sumanjeet. 2011. "Emerging Economic Models in the Age of Internet and E-Commerce." Global Journal of Business Management and Information Technology 1(1):53–68.

Thorsten, Beck. 2016. "Financial Inclusion – Measuring Progress and Progress in Measuring." Fourth IMF Statistical Forum (November):1–33.

V, Sushma, and Vinay Joshi. 2023. "Exploring the Evolution of Financial Literacy and Investment: A Bibliometric Analysis of the Past Decades' Academic Literature." Sachetas 2(3):1–21. doi: 10.55955/230001.

Wang, Yao, and Qiang Zhi. 2016. "The Role of Green Finance in Environmental Protection: Two Aspects of Market Mechanism and Policies." Energy Procedia 104:311–16. doi: 10.1016/j.egypro.2016.12.053.

Xiao, Yubo, Muxi Lin, and Lu Wang. 2024. "Impact of Green Digital Finance on Sustainable Development: Evidence from China's Pilot Zones." Financial Innovation 10(1). doi: 10.1186/s40854-023-00552-9.

Xu, Xinkuo, and Jingsi Li. 2020. "Asymmetric Impacts of the Policy and Development of Green Credit on the Debt Financing Cost and Maturity of Different Types of Enterprises in China." Journal of Cleaner Production 264:121574. doi: 10.1016/j.jclepro.2020.121574.

Yan, Chen, Abu Bakkar Siddik, Li Yong, Qianli Dong, Guang Wen Zheng, and Md Nafizur Rahman. 2022. "A Two-Staged SEM-Artificial Neural Network Approach to Analyze the Impact of FinTech Adoption on the Sustainability Performance of Banking Firms: The Mediating Effect of Green Finance and Innovation." Systems 10(5). doi: 10.3390/systems10050148.

Yoshino, Naoyuki, and Peter J. Morgan. 2017. Financial Inclusion , Regulation , and Education Asian Perspectives.

Zhang, Dayong, Zhiwei Zhang, and Shunsuke Managi. 2019. "A Bibliometric Analysis on Green Finance: Current Status, Development, and Future Directions." Finance Research Letters 29(February):425–30. doi: 10.1016/j.frl.2019.02.003.

Zheng, Guang Wen, Abu Bakkar Siddik, Mohammad Masukujjaman, and Nazneen Fatema. 2021. "Factors Affecting the Sustainability Performance of Financial Institutions in Bangladesh: The Role of Green

Finance." Sustainability (Switzerland) 13(18):1–27. doi: 10.3390/su131810165.

Zulaihati, Sri, Santi Susanti, and Umi Widyastuti. 2020. "Teachers' Financial Literacy: Does It Impact on Financial Behaviour?" Management Science Letters 10(3):653–58. doi: 10.5267/j.msl.2019.9.014.