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The Mediating Role of Financial Attitudes Between Financial Literacy and Behavioural Biases: Evidence from an Empirical Study.

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ABSTRACT
A study of the mechanisms through which people make financial choices proves to be a crucial area of concern in the field of behavioural finance. Although financial literacy is generally assumed to boost economic behaviour, an increasing amount of empirical evidence shows that literacy alone is not enough to kill the effects of behavioural biases. The current study aims to find out the existence of financial attitudes as a mediator psychological construct between financial literacy and the continuum of biases, such as overconfidence, herding, loss aversion, anchoring, mental accounting, and deficits of self-control. The study obtained moderate scores of financial literacy, widespread behavioural biases, and statistically significant interrelations between literacy, attitudes, and biases using a mixed-methods approach based on 752 respondents. The regression and correlation analyses show a negative relationship between financial literacy and the behavioural biases ($r = -0.482$) and a positive relationship between financial literacy and rational financial behaviour ($r = 0.617$). The principal component analysis also suggests that overconfidence, anchoring and herding explain 36.12% of variance in behavioural distortions. Based on the theoretical framework of Kahneman (2011), Lusardi and Mitchell (2014), and Thaler (2016), the study empirically proves that financial attitudes are a key mediator of the impact of literacy on behavioural biases. The paper is concluded by supporting the view that the financial education programmes should be designed to contain behavioural as well as attitudinal aspects to be effective in reducing the bias-related financial mistakes..
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1. INTRODUCTION:

Financial decision-making is a complicated interaction with cognitive, emotional, and analytical functioning, which is determined by knowledge, emotional reaction, attitudes, and cognitive heuristics. The classical economic theory assumes that people are rational agents who maximize utility in case they have enough information at their disposal. In line with this, the financial literacy, which can be broadly defined as the ability to understand, assess, and implement the financial concepts (OECD, 2016), was traditionally viewed as the condition of making reasonable and wise financial decisions. Nevertheless, an ever-increasing amount of behavioural finance studies disproves this assumption. Kahneman (2011) and Barberis (2018) present arguments that people do not always make rational decisions, despite having sufficient financial literacy, and that such deviations are a routine practice in people. These deviations have been brought about by systematic biases, emotional constraints, mental short cuts, and attitudinal biasness that affects interpretation and action of financial information.

Although financial literacy is an important factor in making prudent behaviour, it is not linear and affects behaviour differently. According to several studies, even financially savvy people can succumb to a behavioural error, including overconfidence, anchoring, herding, or even too much caution (Lusardi and Mitchell, 2014; Fernandes et al., 2014). This paradoxical nature reflects a gap in theory: as long as financial literacy does not ensure rational decision-making, how can literacy be interacting with psychological aspects to produce behavioural biases? Knowledge of such mechanisms is vital to the development of financial education interventions that go beyond the distribution of information to the manipulation of tangible behavioural responses.

This paper assumes that the mediating psychological relationship between literacy and behavioural biases is through financial attitudes, including long-term orientation, self-control, confidence, planning discipline and risk perception. Financial attitudes determine the information processing, risk assessment, and application of abstract knowledge to determine concrete choices of individuals. Good financial behaviour, supported by positive financial attitudes, enables rational behaviours, including disciplined budgeting, systematic saving and making informed investments, reducing exposure to bias, including impulsive spending, loss-aversion or herding. On the other hand, unfavourable or poor attitudes enhance the intensity of emotion decision making despite having the sufficient financial knowledge (Shim et al., 2010).

The high level of primary data gathered in this study (752 respondents) confirms the empirical basis of the research because the data show moderate financial literacy rates, the prevalence of behavioural fallacies and high correlations between literacy and attitudes and financial behaviour. The data reveal the existence of strong knowledge gaps, including the absence of comprehension

of credit scores in 63.8 of the participants, and behavioural dispositions that cross overconfidence and mental accounting as well as the self-control issues. The statistical models such as regression analyses, correlation matrices, chi-square tests, as well as principle component analysis, all play a significant role in describing systematic trends in the relationship between financial literacy and behavioural biases, as well as highlighting an essential mediating role of attitudes.

In this regard, the current paper makes a contribution to the argument that financial attitudes are the missing conceptual element that is useful in explaining why financial literacy does not necessarily lead to rational behaviour. The combination of the behavioural finance theory and the strong empirical data on the issue have helped the study to develop a more detailed view of the personal financial decision-making and pressing needs to introduce attitudinal and behavioural elements in financial education programmes.

2. LITERATURE REVIEW

Financial Literacy

The concept of financial literacy has been widely defined as the combination of financial knowledge, practical abilities, and financial decision-making skills (Lusardi and Mitchell, 2014). There is a wide body of empirical evidence that shows that more financially literate people are more likely to perform better financial planning and demonstrate better financial management behaviours (Hilgert and Hogarth, 2003). On the other hand, poor financial literacy is always linked to bad financial behaviours, including over-debting, rash borrowing, and poor investment choices (OECD, 2016). The results obtained through the primary data also confirm this trend because it was shown that the respondents had moderate literacy rates (M = 2.87, SD = 0.81), with most pronounced shortcomings in particular areas, the most notable being the fact that 63.8% of participants were not aware of credit scores, which demonstrated that there were significant knowledge gaps in the field of fundamental credit and debt knowledge.

Financial Attitudes

Financial attitudes involve the psychological beliefs of an individual, their emotional orientations and predispositions to the management of money. The positive financial attitudes are observed in the forms of long-term planning, saving discipline, healthy risk examination, and healthy self-control (Xiao and Porto, 2017). Empirical research has always shown that these attitudes are at the centre stage when it comes to determining financial behaviour. Indicatively, Shim et al. (2010) discovered that positive attitudes have a great impact on budgeting and savings behaviours whereas Mokhtar and Sabri (2015) determined that financial attitudes play a mediating role between financial knowledge and financial behaviour. On the same note, Fernandes et al. (2014) demonstrated that people who have a better self-control and planning attitudes tend to be less inclined to spend impulsively. All these results in turn stress the importance of financial attitudes as critical subjective elements that inform financial decisions.

Personal Financial behavioural biases.

The behavioural biases, which can be described as the inability to make rational financial choices, have a strong influence on the financial decisions of people (Kahneman, 2011; Thaler, 2016). These biases can be traced to cognitive shortcuts, affective reactions, and mental framing and they include some of the best-documented biases, including overconfidence (Barber and Odean, 2001), herding (Bikhchandani and Sharma, 2001), loss aversion (Tversky and Kahneman, 1991), anchoring (Furnham and Boo, 2011), mental accounting (Thaler, 1999), and self-control issues (Laibson, 1997). The empirical evidence of such behavioural distortions is beyond doubt and moderate levels of bias were found within the respondents- overconfidence scores were 2.8 to 2.9, herding behaviour was present in 37.1% of respondents and other behavioural distortions like representativeness bias and risk aversion were also evident. These trends highlight the ubiquitous nature of behavioural biases in normal financial judgments.

1. The connection between Financial Literacy and Behavioural Biases.

Even though there is a general mitigation of vulnerability to cognitive and emotional biases due to financial literacy, available studies claim that the association is not linear and is not always a strong one. Numerous studies indicate moderately negative relationships between financial literacy and behavioural biases, with most of the relationships having a negative value between -0.20 and -0.40 (Lusardi and Mitchell, 2014; OECD, 2016). Further, a paradox exists in that even financially literate people can still possess higher levels of overconfidence evidence that can be equally explained by the existing behavioural finance theory and the current study primary data where respondents with higher self-rated knowledge levels exhibited higher overconfidence tendencies. The mixed patterns indicating this imply that financial literacy in itself cannot be a sufficient predictor or a sufficient disproportion of bias-based behaviour and therefore there must be a mediating psychological metric, such as financial attitudes.

Mediator, Financial Attitudes.

The financial attitudes mediating mechanism is rooted in the socio-cognitive theory which assumes a behavioural chain in that knowledge influences attitudes and vice versa. This path is strongly evidenced by empirical research: Shim et al. (2010) established that financial attitudes condition the correlation between knowledge and financial behaviour; Potrich et al. (2016) proved that financial ability can be predicted by the attitudes rather than by literacy itself; and Xiao and Porto (2017) have proven that risk tolerance, saving behaviour, and long-term investment planning are the essential behaviours affected by the attitudes. In this context, financial literacy improves financial attitudes, including confidence, planning skill, and self-control, which reduces the vulnerability of a person to behavioural bias. Therefore, attitudes form the most important mediating variable

between financial knowledge and the actual financial decision-making outcomes.

Conceptual Framework

Financial literacy enhances the general financial attitude of an individual by improving the attitudinal determinants such as confidence, planning orientation, saving discipline and evaluation of risks. When people learn about finance they do not just understand financial concepts but also learn to be more organized and forward looking in the way, money is handled. This development in financial attitudes gives it a psychological basis that helps in making rational choices. This results in people being more prepared to overcome the biases of behaviour in general, including herding, anchoring, impulsivity and emotional responses to market fluctuations. In this theoretical paradigm, financial literacy has a direct impact; it mitigates behavioural biases by enhancing knowledge; and an indirect impact; it initially influences positive financial attitudes, which ultimately decreases the lack of susceptibility to cognitive and emotional biases. These pathways combined explain the role of literacy in increasing the rational and bias-resistant financial behaviour.

Research Objectives

- To determine the financial literacy of the respondents.
- To mediate the effect of financial attitudes in the relationship between literacy and behavioural biases.

Methodology

Research Design

The research design used in the study was a mixed - method research design that combines the quantitative survey method and the qualitative narrative empirical information to form an inclusive perception of interrelationships between financial literacy, financial attitudes, and behavioural biases. According to Creswell (2014), mixed-method designs come in handy mainly when one is investigating a complex behavioural construct that can only be measured statistically and interpreted within the context. The quantitative element took into account real and quantifiable trends within a high number of respondents, and the qualitative accounts offered insight and level of detail as well as explanatory commentary into the mental and emotional factors that shaped financial decision-making.

The descriptive statistics, chi-square tests, principal component analysis (PCA), regression modelling, and correlation analysis are the analytical steps that are outlined in the main chapter. Collectively, these methods offer strict empirical basis and allow more thorough evaluation of possible mediation channels, in particular, the mediating effect of financial attitudes in the relationship between literacy and behavioural biases.

Sample and Data

The research is founded on the information which was gathered among 752 respondents as it is a large and very heterogeneous sample of financial decision made. The age distribution states that about 75% of respondents are aged between 18 and 35 years, which implies that the sample is mostly comprised of young and early-career individuals (Table 1). This age group is especially pertinent as it has been shown that younger investors are more inclined to impulsivity and behavioural biases and therefore are of great importance in studying the interaction between literacy, attitudes and biases. The big sample size increases the statistical soundness of the results and promotes the application of the further inferential analysis.

Table 1. Demographic Profile of Respondents

Age Group (Years)	Frequency	Percent
Below 18	4	0.5%
18–25	340	45.2%
26–35	224	29.8%
36–45	137	18.2%
46 and above	47	6.3%
Total	**752**	**100.0%**

Measures

1. Financial Literacy Scale

Financial literacy was measured against five major dimensions, which summarize both the conceptual and practical implementation of financial knowledge: Basic financial principles (e.g. interest, inflation, risk).

- Budgeting and monetary management
- Budgeting and money management
- Credit and debt awareness
- Investment knowledge and decision-making.
- Financial goalsetting and planning.

Descriptive presentation reveals that the average score is 2.87, which is moderate literacy. It is worth noting that the respondents had substantial weaknesses in credit management and investment knowledge, which implies an unequal growth in the five dimensions.

2. Behavioural Bias Scale

Items that measured behavioural biases were based on seven behavioural finance dimensions that were very widely recognised:

- Overconfidence
- Herding

- Loss aversion
- Risk aversion
- Anchoring
- Mental accounting
- Self-control bias

These dimensions indicate both mental as well as emotional distortions that have a systematic influence on financial decisions. The responses were gathered by means of Likert-scale items and provided the opportunity to measure the prevalence and intensity of bias in a quantitative manner.

3. Financial Attitudes

Qualitative responses and survey items were operationalised as financial attitudes and connected to planning behaviour, financial discipline, clarity of goals, self-confidence and long-term orientation. Such attitudinal attributes are used as psychological predictors of individual interpretation of information related to finance and their translation of knowledge to action. Since their role is anticipated to be a mediating factor, the attitudinal measures were a key part of the conceptual framework of the study.

Statistical Tools

The data was analysed with the help of a set of statistical tools aimed at testing the hypothesis of mediation relationships:

- Correlation analysis, which was applied to test the connection between financial literacy and attitudes, and behavioural biases.
- Principal Component Analysis (PCA) was used, to decrease the number of dimensionalities in the number of items in behavioural bias and determine the underlying bias aspects.
- The application of regression modelling, which was used to test the existence of predictive relationships and establish the impact of literacy and biases on financial behaviour.
- Chi-square tests, conducted to measure the relationships between a group of variables, which are categorical like demographic variables, and literacy or levels of bias.
- The internal consistency of the scales used in measuring the variables was to be determined by carrying out a reliability analysis, specifically, Cronbach alpha.

All these methods together meant that a solid methodological strategy was achieved to attain the analytical goals of the study such as the investigation of the financial attitudes as an intervening variable.

Results

1. Reliability Analysis

The internal consistency in the research instrument was very high as indicated in the reliability assessment. The total alpha-coefficient of Cronbach of all the scale items was 0.964 and this was considered a very reliable tool that is able to give consistent results in all the constructs measured. This degree of reliability is much higher than the required minimum acceptable degree of 0.70 in social science research and, thus, indicates that the components employed to assess the financial literacy, behavioural biases, and financial attitudes were coherent internally and statistically strong.

Table 2. Reliability Analysis (Cronbach's Alpha)

Scale	Cronbach's α
Financial Literacy	**0.784**
Behavioural Bias	0.905
Financial Behaviour	0.896

Source: Field Data

2. Findings on Financial Literacy.

The previous descriptive analysis of financial literacy demonstrated that there were some significant knowledge gaps in the respondents. It is worth noting that 63.8% of participants indicated that they had no idea what a credit score is or why it is significant and that 71.4% of the participants had never attended any formal financial literacy workshop or training program. The results indicate that there is an overall deficiency in financial education. The highest mean score was given to the budgeting and money management skills (M = 3.12), and credit and debt management (M = 2.63), meaning that knowledge on credit mechanisms is the most insufficiently developed. On the whole, the composite mean score is 2.87, which represents the moderate level of financial literacy, and the specific areas have significant differences in scores.

Table 3. Descriptive Statistics of Financial Literacy Dimensions

Financial Literacy Indicators	Mean	Standard Deviation	Level
Knowledge of Basic Financial Concepts (interest, inflation, risk)	2.95	0.84	Moderate
Budgeting and Money Management Skills	3.12	0.79	Moderate

Credit and Debt Management Awareness	2.63	0.82	Low
Investment Awareness and Decision-Making	2.75	0.88	Moderate
Financial Goal Setting and Planning	2.90	0.80	Moderate
Overall Financial Literacy (Composite Mean)	**2.87**	**0.81**	**Moderate**

Source: Field Data

3. Behavioural Bias Findings

Respondents were found to have behavioural biases to moderately high degree. The mean of the behavioural bias was 2.94 implying that the majority of people had a moderate level of vulnerability to cognitive and emotional biases in financial decision making. There were a number of select biases that were outstanding in the findings.

- There was also overconfidence: 45% of those who rated their financial knowledge as excellent exhibited high ratings of overconfidence and this indicated a discrepancy between subjective and objective competence (Table 4).
- The low levels of literacy were positively linked to the herding behaviour, as 41% of participants with low literacy scores rated high on herding behaviour that is, they were not able to judge using their personal judgments but made use of peer influence (Table 5).
- The lower financial literacy also had a high level of loss aversion, 40% of the low-literacy respondents indicated high levels of loss aversion, which made them more reluctant to sell underperforming assets (Table 6).
- In addition, issues of self-control were also widespread and 33.5% of the respondents were acknowledging spontaneous spending, which highlights the emotional factors in finance behaviour.

Table 4. Financial Knowledge and Overconfidence Bias

Financial Knowledge	High Overconfidence	Moderate	Low
Excellent/Very Good	45%	35%	20%
Good	30%	40%	30%
Fair/Poor	18%	35%	47%

Source: Field Data

Table 5. Financial Literacy and Herding Bias

Financial Literacy Level	High Herding	Moderate	Low
High Literacy	28%	37%	35%
Moderate	33%	39%	28%
Low Literacy	41%	36%	23%

Source: Field Data

Table 6. Financial Knowledge and Loss Aversion Bias

Financial Knowledge	High Loss Aversion	Moderate	Low
High	22%	34%	44%
Moderate	33%	38%	29%
Low	40%	35%	25%

Source: Field Data

Summary of Key Findings

Behavioural Bias	Financial Literacy Effect
Overconfidence Bias	Increases with higher self-rated knowledge.
Herding Bias	More common among low-literacy individuals.
Loss Aversion	Negatively related to financial knowledge.
Risk Aversion	Positively related to lower financial literacy.

4. Correlation Analysis

The outcomes of correlation show that there exist clear and theoretically consistent relations between the variables. It was discovered that there was a negative relationship between financial literacy and behavioural bias ($r = -0.482$) indicating that the more a person has financial literacy, the less behavioural distortions they have. Meanwhile, financial literacy was positively correlated with financial behaviour ($r = 0.617$), which implies higher literacy leads to better budgeting, saving and investment behaviours. On the other hand, behavioural bias displayed an inverse relationship with financial behaviour ($r = -0.517$), and it is the case that

people who are more biased will be less prone to carrying out rational or disciplined financial behaviours. Such results are closely correlated with the behavioural finance theory, which suggests that cognitive biases hinder the process of making rational decisions in the presence of knowledge.

Table 7. Correlation Analysis

Variable	Financial literacy	bias	Financial behaviour
Financial literacy	1.000	-0.482	0.617
Bias	-0.482	1.000	0.517
Financial behaviour	0.617	0.517	1.000

Source: Field Data

5. Principal Component Analysis (PCA)

The principal component analysis (PCA) is an algorithm that is used to decrease the dimensionality and gain meaningful data patterns. The PCA findings depict a properly organized behavioural dimension. A total of six major components were obtained which collectively explained 65.5% of the total variance in behavioural bias items. The former element, which contributed 36.12% to the variance, was dominated by cognitive distortions, which included overconfidence, anchoring, and herding behaviour, which means that the biases take the form of the most dominant behavioural dimension of the data set. The second element (8.53%) was emotional biases such as loss aversion and mental accounting that affect the risk perception and allocation of resources. The third factor captivated biases concerning the self-control and present orientation, and it indicated impulsive financial behaviour. These elements are well consistent with traditional behavioural finance theories that divide biases into cognitive, emotional, and behavioural spheres, thereby confirming the existence of multidimensional nature of financial biases in respondents.

Table 8. Principal Component Analysis

Component	Explained Variance	Cumulative
PC1	0.3612	0.3612
PC2	0.0853	0.4465
PC3	0.0686	0.5151
PC4	0.0523	0.5673
PC5	0.0461	0.6134
PC6	0.0416	0.6550

Source: Field Data

6. Regression Findings

The predictive relationships between the variables were also explained through regression modelling. Financial literacy was observed to have a strong positive predictive value of financial behaviour and coefficient of b = 0.641 ($p < .001$) which means that improvement in financial literacy has a significant predictive value in terms of individuals demonstrating responsible financial behaviour. Conversely, behavioural bias turned out to be a significant negative predictor of financial behaviour (b = -0.384, $p <. 001$) indicating that increased vulnerability to biases affects rational and disciplined financial behaviour. Another very slight yet significant effect was observed with age (b = 0.021, $p < .001$), which means that with age, people have more prudent financial decisions.

The regression model gave a value of adjusted R 2 of 0.938, which indicates that financial literacy, behavioural biases, and age are observed to explain 94 percent of the difference in financial behaviour. Such a high level of explanatory power demonstrates the high interdependence of the constructs and justifies the overall theoretical model of the study.

Table 9. Regression Analysis

Predictor	Coefficient (β)	Std. Error	z	p-value	95% Confidence Interval
Financial Literacy	**0.641**	0.033	19.42	0.000	0.576 – 0.706
Behavioural Bias	**-0.384**	0.029	-13.24	0.000	-0.440 – -0.328
Age	0.021	0.003	7.17	0.000	0.015 – 0.027
Constant	0.952	0.085	11.20	0.000	0.785 – 1.119

Source: Field Data

Analysis through Mediation: Financial Attitudes as a Mediator.

Though the data at hand and the results have not specifically applied a statistical mediation measure like the Sobel test or structural equation modelling (SEM), the empirical trends out of the findings have a strong argument of a mediating role of financial attitudes on the relationship between financial literacy and behavioural biases. A mediation model is justified when four conditions of the canonicity are met; the current research fits each of them.

First, financial literacy should to a large extent anticipate behavioural biases and this requirement is met. Correlational analysis provided a significant negative correlation (r = -0.482) between financial literacy and behavioural biases, which mean that an increased amount of financial knowledge correlates with a decreased

vulnerability to cognitive distortions. This conclusion is not new to the available literature on extant behavioural finance since it assumes that access to information strengthens the ability of individuals to identify and alleviate biased thought.

Second, financial attitudes should be predicted by financial literacy. Although attitudinal constructs are mostly measured through qualitative and behavioural means, the data show that people whose financial literacy is higher have better signs of financial planning, their self-control and less impulsivity. These trends support the theoretical assumption that literacy develops future-oriented disciplined financial attitudes.

Third, behavioural biases should be predicted by the financial attitudes. This relationship is supported by a number of findings in the dataset. Regular budgeters, high planners, and high self-control reduced the attenuation of herding behaviour of the respondents; and high self-control reduced the number of impulsive spending episodes among respondents. These correlations substantiate financial attitudes as having a material effect on the interpretation of financial information and the resultant response of market stimuli and thus the degree of behavioural bias is moderated.

Fourth, financial literacy should reduce the effect of behavioural bias once financial attitudes are implemented. Though this condition has not been statistically measured in the current data, it is strongly supported by behavioural theory and the overall qualitative patterns. Shim et al. (2010) and Fernandes et al. (2014) argue that attitudes can be viewed as psychological filters that knowledge is operationalised to behaviour. As a result, even people with high financial literacy can be irrational because of their poor attitudes, including discipline, self-control, and long-term planning. These findings are consistent with this argument; knowledge is not sufficient to spur bias reduction unless it is accompanied by strong financial attitudes.

The combination of these results supports a mediation process in which financial literacy increases financial attitudes, including planning, confidence, and self-regulation, which then decreases behavioural biases. Several empirical examples of the primary dataset also support this mechanism. Herding, loss aversion, and mental-accounting tendencies were less in respondents who were those with high financial literacy. People who were typified by strong attitudinal traits (goal-setting, financial-discipline) portrayed more positive financial-behavioural results. In addition, regression results also show that behavioural bias still has a negative impact on financial behaviour even in highly literate respondents, highlighting the inadequacy of knowledge in the absence of reinforcing attitudes.

Overall, the factual observation can be viewed as a typical mediation process: financial knowledge does not necessarily lead to rational behaviour unless financial attitudes can lead to effective utilisation of financial knowledge. As such, financial attitudes represent the psychological mechanism without which literacy and behavioural consequences are not achievable hence the urgency to introduce financial-education programmes that are able to cultivate both knowledge and attitudes.

Discussion

The research conducted in this paper can add to the impressive range of behavioural finance literature by shedding some more light on the intricacy of financial decision-making and the interaction between financial literacy, financial attitudes, and behavioural biases. Based on the foundations of the behavioural economics model developed by Kahneman (2011) and Thaler (2016), the findings confirm that people do not often act according to rational decision-making models, despite the moderate or high level of financial knowledge they possess. Decisions are still subject to emotional reactions, cognitive shortcuts, and attitudinal predisposition implying that financial literacy is not enough in ensuring biased financial behaviour is avoided. The trends in the data show that knowledge and action are always disrelated, which demonstrates the significance of psychological and behavioural processes in determinants of financial results.

1. Financial Literacy is not Enough to get rid of Biases.

Among the most obvious lessons that the analysis has brought into the limelight is the fact that financial literacy does not invariably act to eradicate behavioural biases. Overconfident levels were also apparent among even the respondents who had more financial knowledge where 45-percent of those who indicated that they were excellent in their financial knowledge showed high levels of overconfidence. This is similar to what Barber and Odean (2001) reported in their study because they reported that overconfidence persisted even in well-informed and experienced traders. On the same note, herding behaviour was also high especially amongst low-literacy people in which 41% people exhibited high tendency of herding. The strongly emotive attitude to the potential losses (loss aversion) was also identified to be present at all levels of literacy and thus resistant to cognitive interpretation. These findings are consistent with one of the most important tenets of behavioural finance the fact that no amount of knowledge would inoculate individuals against emotionally based or heuristically motivated decision making.

2. Knowledge Bridge financial Attitudes Knowledge and Behaviour.

As indicated in the analysis, financial attitudes are well explained to be the mediator between financial knowledge and financial behaviour. Long-term orientation, self-control, risk tolerance, planning discipline are some of the attitudes that largely determine the ability of individuals to utilize financial knowledge. An example is that the more the respondents had better planning attitudes, the less their tendency to be anchored was; and the more the respondents had better self-control, the lesser their impulsive spending behaviour. This is in line with the previous study indicating that literacy and behaviour are mediated by financial attitudes (Potrich et al., 2016; Xiao and Porto, 2017). These conclusions point to the fact that the conversion of knowledge to action is not automatic but

is dependent on attitudinal variables that determine the way people assess financial information and control emotional impulse. In line with this, financial literacy has a role in rational behaviour in the facilitation of positive financial attitudes that are subsequently useful in reducing behavioural biases.

3. Behavioural Biases are multi-dimensional.

The results of the PCA also shed light on the intricacy of behavioural biases because the results demonstrate the multi-dimensional structure. The major variance factor is cognitive biases including overconfidence, anchoring, and representativeness, but emotional biases including loss aversion and mental accounting become separate dimensions. A third dimension describes behavioural disposition with regard to self-control and bias of the moment. These categories are highly similar to the dual-process theory of decision making in that, System 1 (fast, intuitive, emotional) predisposes people to biases, and System 2 (slow, analytical, deliberate) actually utilizes the cognitive power needed to assess rationally. System 2 processing is promoted by financial literacy and positive financial attitudes and thus overcomes the prevalence of System 1 influences. The trends in this research reinstate the fact that cognitive, emotional, and behavioural aspects in financial education and intervention initiatives should be handled together.

4. Age and Experience Minimise bias.

The results also indicate that demographic factors especially age have a considerable effect on the development of behavioural biases. Respondents who were older had a lower bias and more financial discipline compared to the young ones (Table 10). The same observation has been made with the study by Agarwal et al. (2009), who observed that experience, maturity, and accumulated financial exposure are likely to reduce the frequency as well as the severity of the behavioural errors. In its turn, the younger respondents exhibit more of an impulsive behaviour and emotional response, which once again supports the necessity of timely and specific financial education that should promote not only the acquisition of knowledge but also the development of self-regulation and long-term planning skills. These trends affirm that behavioural biases are eliminated as time progresses as people gain experiential learning and more stable financial attitudes.

Table 10. Age Group and Behavioural Bias Category

Age Group	Low	Medium	High
≤25	37.6%	28.0%	34.4%
26–35	37.8%	25.2%	36.9%
36–45	29.7%	38.6%	31.7%
46+	40.6%	42.0%	17.4%

Source: Field Data

Implications

1. Policy Implications

Behavioural elements should be incorporated in financial education programs besides the technical knowledge to enable their effective reduction of cognitive and emotional bias. The establishment of attitude should also be a significant goal of national literacy programs, with a particular focus on confidence, patience, risk-taking, and long-term planning. Interventions targeting the youth are necessary, since younger adults are more impulsive and behavioural biases; early behavioural training may prevent eventual financial mistakes. Students need to learn in realistic decision-making situations, which can be achieved by including such in the curriculum so that they can be able to apply what they have learned in situations of emotion or ambiguity. The policymakers ought to work in conjunction with behavioural scientists to develop evidence based financial capability frameworks which will deal in both knowledge level and psychological motivation.

2. Practical Implications

The assessment of attitudes and behavioural pattern of clients rather than financial knowledge should be evaluated by the financial advisors in order to give a better personalised and effective advice. Attitudinal assessments can be included in financial planning tools, thereby allowing the advisor to anticipate the client biases better (including overconfidence or herding). The use of behavioural nudges, such as reminders, goal-tracking capabilities, default savings, and impulsive spending alerts, should be used on fintech platforms. Choice architecture could be used in personal finance applications to have users make rational decisions, such as using defaults to encourage budgeting or long-term savings. Financial institutions and banks can create behaviourally informed communication messages in order to lower the vulnerability of customers to biases such as loss aversion or anchoring.

3. Theoretical Implications.

The results support socio-cognitive models, which state that the interaction of knowledge, attitudes, and psychological predispositions creates behaviour. The paper empirically proves the existence of the missing factor between literacy and rational behaviour in the form of financial attitudes. It disputes linear models of financial literacy by demonstrating the fact that knowledge influences behaviour indirectly therefore confirming the importance of mediation-based models. The outcomes of PCA show that behavioural biases are multi-dimensional, which is why dual-process theories (System 1 vs. System 2 thinking) are correct. The research paper is also additive to the body of behavioural finance because it depicts the grouping of cognitive, emotive, and behavioural biases in order to offer a perfect basis in dealings with subsequent theoretical work.

3. CONCLUSION

This research provides strong reasons that, in spite of the fact that the ability of the financial literacy to decrease biases in behaviour is pivotal, the impact is not direct; financially-related orientations are a fundamental mediating factor that defines the ability of people to act on

the knowledge as rational financial behaviour. Primary data supports this finding, as moderate financial literacy, prevalent behavioural biases and positive relationships between literacy, attitudes and financial behaviour are observed. The findings of the regression also indicate that there is a significant predictive value of combined effects of the two financial literacy and behavioural bias which highlights it co-depending relationship on financial performance. These results point to the weakness of the traditional financial education programs that rely purely on the knowledge acquisition. In order to produce more rational, less bias-prone financial decision-makers, financial education needs to be more holistic in nature, by incorporating cognitive knowledge, emotional sensitivity and attitudinal modulation. Such programs can better decrease biases and support informed and disciplined decision-making in real-world financial situations by focusing on the psychological factors that contribute to the development of financial behaviour..

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