Available Online
Journal of Economic Impact
ISSN: 2664-9764 (Online), 2664-9756 (Print)
https://www.scienceimpactpub.com/jei

THE IMPLICATIONS OF MONEY MANAGEMENT FOR INVESTMENT- DECISIONS AMONG UNIVERSITY UNDERGRADUATES IN PUNJAB

Asif Ali [a], Muhammad Bilal [a], Hira Ashfaq [b,*], Ashfaq Maan [c], Bilal Maan [c]

[a] *Management Sciences, University of Okara, Okara, Pakistan*
[b] *Department of Management Sciences, UAF Constituent College, Okara, Pakistan*
[c] *Faculty of Social Sciences, University of Agriculture, Faisalabad, Pakistan*

ARTICLE INFO

Article history
Received: August 08, 2024
Revised: November 17, 2024
Accepted: November 26, 2024

Keywords
Money-management
Optimism-bias
Investment-decision
Undergraduates

ABSTRACT

Money management is essential for effective investment decisions and long-term economic well-being. This research study investigates the implications of money management for investment decisions among undergraduates of public-sector higher education institutions (HEIs) in the Punjab Province of Pakistan. This is particularly important in the present economic scenario of Pakistani HEIs, where undergraduates often lack the necessary skills for money management for better investment decisions. This study has used the multistage sampling technique for the study sample of undergraduate students. A comprehensive questionnaire was used for data collection from the selected respondents. The collected data were analyzed statistically and the major findings have been presented in this research paper. The results showed a significant relationship between money management and investment decisions among the public-sector university-undergraduates. Therefore, this research recommends the incorporation of money-management courses into the educational curricula to make investment-decision capabilities better, for future generations.

* *Email: hira.angel04@gmail.com*
https://doi.org/10.52223/econimpact.2024.6309

INTRODUCTION

Behavioral motivation for investment decisions and the degree to which these decisions can maximize income are the two crucial aspects that undergraduates consider for making investment decisions. The ability to manage one's own money well is the essence of money-management skills. It means the ability to comprehend and make sound decisions about one's own money including savings, investments, debt, insurance, and other money-management tools ((Bernheim and Garrett, 2003). One of the key objectives of financial education is to educate students to make sound decisions about their money management while making various investment decisions. As a result of this education, students are more likely to put their money into investments, which boosts their economic conditions in the best possible manner. For example, government bonds are considered the best assets, but investors might have preferences in favor of stocks or other investment opportunities. Furthermore, this has a strong correlation with global growth due to the overall economic conditions. This change reflects the fact that investors throughout the world are becoming more risk-averse (Robb, 2011). Therefore, they are flocking to emerging nations to purchase riskier assets like equities and government bonds. For example, the local currency exchange rate tended to strengthen against the US dollar due to a large influx of cash into emerging nations, even if several of these nations were still experiencing declines.

Nevertheless, the likelihood of encountering hurdles is comparatively higher, particularly in poorer nations. For instance, in terms of the Ease of Doing Business (EoDB) Index, Indonesia ranks 72 out of 190 nations, and foreign direct investment (FDI) in Indonesia has grown significantly (Pritazahara et al., 2015). Economists from both rich and developing nations have spent a lot of time and energy trying to determine steps for reaching a "threshold level" of inflation by analyzing primary data from a large number of countries and time-series data from individual cases (Wollie, 2018).

The need for experts who can ascertain, comprehend, and assess data pertinent to decision-making in the light of the implications has always been crucial for any society. This demonstrates the critical importance of money management for every individual, as it enables individuals to manage their financial issues effectively and avoid expected pitfalls (Bernheim and Garrett, 2003). Chen and Volpe (1998) found that undergraduates with poor skills in money management are more likely to hold erroneous views about money and make poor investment decisions. Robb (2011) stated that when people have a good grasp of money management, it helps them make better decisions with their personal money, such as saving and spending wisely. However, the widespread adoption of a consumerist mindset diminishes the importance of saving and investing. Therefore, on the one side, many people still believe that only those with substantial incomes should bother with personal money management and investing (Fernandes and Filipa, 2018). As a result, they need to see the significance of having sound money-management practices in their own lives. While, on the other side, some people have substantial salaries but fail to think about the ways &means to invest their money. Most of the cash was kept for investment, savings, and consumption.

Investigating the implications of money management for making investment decisions, especially in the case of undergraduates of the public-sector universities of Punjab, Pakistan carries specific importance. Given its potential implications for the investment-decisions of university undergraduates in developing countries like Pakistan, with a huge young population, money management affords an interesting case study (Duan et al., 2019). Therefore, this research paper is an attempt to investigate the money-management practices among undergraduates of the public-sector higher education institutions (HEIs) in Punjab and its implications for their investment decisions.

Understanding the phases and issues of money management among undergraduates is essential as it directly relates to their ability to engage with economic markets, appraising investment options, and, ultimately, money-making. Educational institutions are striving hard to take steps to include financial education in their curricula. Hence, there is a demanding need to analyze the effectiveness of these measures to pinpoint the room for betterment (Li et al., 2019). In this way, educators, policymakers, and educational and financial institutions can help equip university students with financial knowledge & skills to make better & sound financial decisions. Several key dimensions are explored in this study with regard to money management and investment decisions among undergraduate students at HEIs in the Punjab Province of Pakistan. The present research study has been designed to see the association between money management and investment decisions. This is crucial to fill the gaps in adopting better money-management strategies and making the best investment decisions. Therefore, the paper has been presented with the following objectives.

The primary objectives of this study are to explore the money management practices of the respondents and examine their investment decision-making processes. It seeks to investigate the relationship between money management and investment decisions, identifying any significant associations between the two. Additionally, the study aims to provide practical guidelines and recommendations to help respondents enhance their investment decisions for better financial outcomes.

The primary objectives of this study are to explore the money management practices of the respondents and examine their investment decision-making processes. It seeks to investigate the relationship between money management and investment decisions, identifying any significant associations between the two. Additionally, the study aims to provide practical guidelines and recommendations to help respondents enhance their investment decisions for better financial outcomes.

Theoretical Framework

There are two major theories relevant to the present research that have been presented below:

Financial-socialization theory

Theory in business management and social sciences means providing the social, cultural, political, economic, psychological, sociological, and other important explanations for the happening of business and social phenomena in any human society & culture. Socialization is, specifically, a process in which different social institutions such as family, educational, religious, political, recreational, and other important basic social institutions are involved in shaping and developing the personality of human beings in terms of their thoughts, knowledge, training, mindset, habits, traditions, beliefs, norms, values, sanctions, rules, actions, reactions and interaction-patterns & styles while living, learning and working in the family and other institutions of any society & culture.

Therefore, financial socialization theory provides guidelines and explanations regarding money management when people share financial information through discussions in terms of both positive & negative dimensions, experiences, hopes, plans, and outcomes with their relatives, friends, peer group, business group, family members, play-group, street-corner society, and other near and dear ones. This clarifies the logic behind the idea that people are expected to have a basic understanding of financial information before they can be considered financially literate and know money-management skills & tools for making better financial & investment decisions.

Theory of reasoned-action

The theory of reasoned action (TRA) provides an explanation of the interrelationship of human beliefs and actions in any society & culture. Fishbein and Ajzen (1975) suggested that intentions to be engaged in a particular activity can be predicted by looking at and analyzing those intentions for providing their logical & reason-based explanations. The two main factors that influence people's intentions for their actions are:

Behavior-specific attitudes i.e. assessments or evaluations

Subjective norms i.e. felt pressure for a particular action.

A more positive attitude towards the conduct to be followed and strict social norms are the predictors of most followed behavioral intentions. A number of models have used TRA components to forecast public behavior; these models account for voting, smoking, alcohol & drug use, condom use, dental care, and other human behaviors. Consistent with the TRA, it has been, for example, observed that sun-protection norms such as friends' sun-protection behavior predict intentions to go for sun protection while sunbathing norms predict intentions to sunbathe. By having guidelines for applying these theories, an effort has been made in this study to see the implications of money management for making investment decisions among university undergraduates in the Punjab Province of Pakistan. Therefore, the following theoretical framework has been presented to be used in the present research.

The schematic presentation shown in Figure 1 depicts the relationship between the independent and dependent variables of the study. The diagram also shows the implications of the mediator variable i.e. optimism-bias.

The schematic presentation (Figure 1) also provides guidelines for developing research hypotheses for this study. Therefore, hypotheses development has been discussed and presented below.

Hypotheses Development

These hypotheses are directly related to positive and negative directions but contain operationally defined variables and are in testable form. Hypothesis allows us to determine, through hypotheses-testing, the truthfulness and correctness of the proposed relationship between the independent and dependent variables, as proposed in the above theoretical framework in the above Figure 1. The hypothesis that is proved correct, becomes a fact and is incorporated in the body of knowledge.

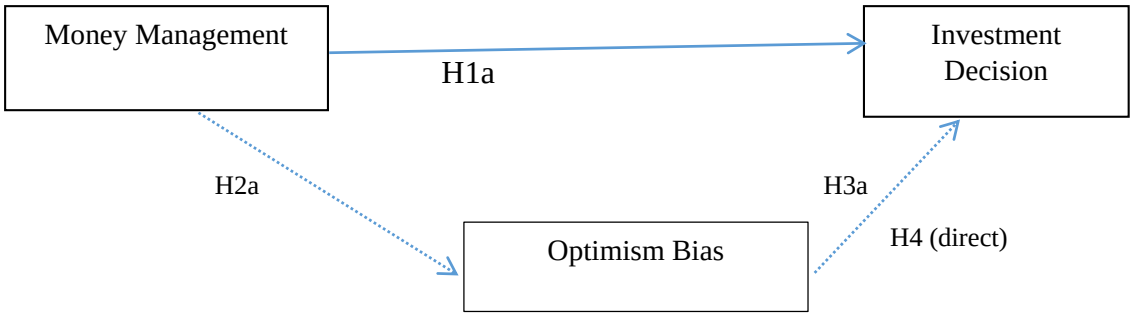

Figure 1. Schematic presentation of the theoretical framework.

Money Management and Investment Decision

Undergraduates who excel in money management such as budgeting, saving, and tracking expenses are likely to have a clearer understanding of their financial capacity to go for the acceptance of any opportunity or challenge for making rational investment decisions. The clarity can lead to more well-taken investment decisions. For example, someone who consistently saves a portion of his/her income and has a well-structured budget may feel more confident investing in higher-risk assets such as stocks, knowing they have a financial cushion. Let's break it down with specific examples, measurement methods, and details to support the hypothesis.

Example: A person who follows a strict budgeting plan allocates 20% of his/her income to make investments. This discipline does not only build his/her investment portfolio but also helps him to avoid impulsive financial decisions, leading to better investment choices.

Example: An Undergraduate with an established emergency fund feels secure enough to invest in volatile assets like technology stocks, while someone without a safety net may avoid any potential high-reward investment. Surveys were carried out to assess undergraduates' money-management skills (e.g., budgeting accuracy, savings rate) and their investment behaviors (e.g., types of assets chosen, frequency of investment). Standardized statistical tests were applied to measure money management and correlate the scores with investment decisions made. Case studies were conducted on Undergraduates or other student groups before and after financial education programs to analyze changes in their investment decisions and outcomes. Research has shown that undergraduates with better money management were more expected to invest in stocks and specialized assortments. For example, a study might find that those with a money-management score above a certain threshold are 50% more likely to invest in equity markets than those below that score. Psychological aspects, such as confidence stemming from effective money management, can lead to more proactive investment strategies, as seen in individuals who attend financial workshops and, subsequently, increase their investment activity.

H1a: Effective money-management practices positively and significantly influence investment decisions, resulting in more strategic and successful investment outcomes.

H1a: There is a direct and significant relationship between money management and investment decisions.

Money Management and Optimism-bias

In studying the implications of money management for investment decisions among undergraduates in Punjab, Pakistan, it is essential to explore the ways & means through which students' ability to manage money (money management) affects their investment choices, particularly in the presence of cognitive biases like optimism-bias. Money management assists as the independent variable that influences undergraduates' monetary behavior, including their skill to make up-to-date and discreet investment decisions. However, this relationship may not be straightforward, as optimism bias, a tendency to overestimate positive outcomes and underestimate risks, can mediate the association level between money management and investment decisions.

The idea is that students who know how to budget their money properly will tend to invest more carefully and with better research than those unfamiliar with financial principles. Nonetheless, these students might over-expect their financial future and as a result, be too steady-handed in transferring risk away from themselves by investing in the wrong pots due to their poor capacity to manage with money. As such, this mediating effect of optimism bias will increase or weaken the positive implications of money management for investment- decisions.

H2a: The stronger the financial capability of the students, the more likely they will behave like individual investors and act intelligently in making investment decisions.

H2a: Optimism bias mediates the association between money management and investment- decisions, students with high optimism bias and good money management may be likely to choose riskier investment actions.

H2a: Money management has a significant and direct effect on optimism bias.

This analysis is salient because it underscores that financial education programs intended to enhance money management will, potentially, have limited effectiveness if not accompanied by specific engagement with students' cognitive biases. By taking into account the interplay between money-management skills and optimism bias, educators and policy-makers can develop a more holistic approach to teaching money management in order to provide students with the technical knowledge as well as psychological insights required to make rational investment decisions.

Money Management and Optimism-bias with Investment Decisions

This study starts with an analysis of the implications of money management for investment decisions of undergraduates in Punjab, Pakistan using a mediator variable called optimism bias. This is to investigate the indirect association between money management and making investment decisions. When it comes to money management, students should be able to plan and budget their financial resources, properly. Good money management should be for making smart & good investment decisions.

However, the presence of optimism bias, a cognitive distortion where individuals overestimate positive outcomes and underestimate risks can, indirectly, affect this relationship.

The underlying assumption seems to be that improved money-management skills would lead to better investment decisions. But, the indirect influence of overconfidence could turn over more effective management as useless. Students having high optimism bias may believe that they have excellent money-management skills and get individual stock-investing right. But, if they earn lower returns as compared with a properly constructed passive index portfolio. It would be generally expected from them to, therefore, earn less of the overall pie of higher return investments. This, ultimately, ends up with Fair Game. For the student who has somewhat lower returns for a higher increase in investment; it is all a matter of a percentage decrease. Interestingly, this indirect effect minimizes the beneficial effect of money management on investment decisions. This happens as a result of an optimism bias that encourages riskier behavior even under sound money management.

H3a (Indirect Effect): Optimism bias mediates the relationship between money management and investment decisions. This happens as money management skills lead to more cautious investment decisions only when optimism bias is low. The indirect effect of money management upon investment decisions through optimism bias will be significant. It means that a higher optimism bias reduces the positive implications of good money management for investment outcomes.

H3a: There is an Indirect and significant Relationship between Money management and Investment Decisions through Optimism Bias (Mediator).

What this hypothesis underscores, is that there are reasons to believe that having money-management skills alone may not be enough to generate good investment decisions, if optimism-bias has not also been tackled. When optimism bias functions indirectly, it leads students to behave in a manner as they are quite skilled in financial matters. However, they might be running into risk even if they are efficient in their money-management skills. Thus, they argue that money-management training programs should cover both the technical side by telling ways & means of money management and behavioral biases like optimism bias. This is crucial for students' capacity-building to make more reasonable investment decisions.

Optimism Bias and Investment Decision

The implications of money management for investment decisions should be investigated in order to understand the effect of optimism bias on these variables. Understanding the mechanism by which optimism bias influences investment decision-making among undergraduates in Punjab, Pakistan, is crucial. As a mediator and influencer on several components of money management, optimism bias characterizes the situation where individuals believe they are less likely to experience a negative outcome as compared with others. This bias, in turn, influences investment behavior. The investment decision is a quantitative value that describes the extent of goodness or badness of an individual's choice for financial investments. It is the dependent variable in this research paper.

The hypothesis is that the optimism bias has implications for investment decisions by changing the risk perception and prospective returns. In particular, a high optimism bias can cause investors to be overly optimistic and make risky investment decisions. Optimism bias, in fact, serves directly to induce this effect by warping students' evaluations of investment-opportunities. Resultantly, they: a) overstate the expected returns and b) understate risks.

H4 (Direct Effect): Investment decisions are influenced by a direct effect of optimism bias. This, essentially, assumes that the higher the level of optimism bias, the riskier will be the investment-decisions. In other words, undergraduates with high levels of optimism, are more likely to engage in risky-investment behaviors that may have dampening implications for their pockets, irrespective of their good money-management skills.

H4: Optimism Bias has a direct, positive, and significant relationship with the Investment Decision.

Summary of Hypotheses

All of the above hypotheses are still relevant as they acknowledge that cognitive biases including optimism bias can have a massive effect on investment decisions. Knowing this direct effect also contributes to design of educational programs and other money-management initiatives. This may explain several strategies towards taking practical steps for shaping and inculcating the knowledge on skills &tools for money management but also some behavioral factors that govern investment decisions. The summary of the developed hypotheses is presented in Table 1.

Table 1. Summary of hypotheses and Results.

Sr. No	Hypotheses	H. No.	Theoretical-Base	Direction	Significance
1	Money Management and Investment Decision	H1a	Financial Socialization & Reasoned Action Theories	Positive	Significant
2	Money Management and Optimism Bias.	H2a	Financial Socialization & Reasoned Action Theories	Positive	Significant
3	Money management through mediator Optimism Bias and Investment Decision	H3a	Financial Socialization & Reasoned Action Theories	Positive	Significant
4	Optimism Bias and Investment Decision.	H4	Financial Socialization & Reasoned Action Theories	Positive	Significant

METHODOLOGY

This section outlines the research methodology employed in investigating the implications of money management for investment decisions among university undergraduates in Punjab, Pakistan. The research methodology comprises the sampling frame, sampling techniques, sample size, data-collection tool, and statistical analysis of collected data and reporting results in the form of this research paper.

Sample Selection

The sampling frame of the study consisted of undergraduate students enrolled in the public-sector universities of the Punjab Province of Pakistan. There were 45 public-sector universities in Punjab. A combination of multistage, convenient, and simple random sampling techniques was applied at different stages of the sample selection. In the first stage, two universities namely the University of Okara (UO) and the University of Agriculture, Faisalabad (UAF) were selected through a convenient-sampling

technique. The logic and reasons include: first, looking into the facilitation, feasibility, and accessibility for data collection, and second, both universities have a huge population of undergraduates that represent the overall population of undergraduate students in Punjab. Furthermore, both universities have undergraduate programs in many disciplines which was a prerequisite for having a random sample of undergraduate students. In the second stage, the Faculty of Sciences, UAF, and the Faculty of Business Management Sciences, UO, were selected randomly. Then, departments of Chemistry and BBA were selected randomly from the selected faculties of both universities, respectively.

Sample Size

At the next stage, 252 undergraduate students from the BBA Department at UO and 193 undergraduates from the Chemistry Department at UAF were selected randomly. The size of the sample has been determined by using suitable methods of statistics to certify adequate representativeness. Factors such as the population size of undergraduate students in the public-sector universities of Punjab and the desired level of confidence and precision have been used to guide the determination of the sample size which is 480 respondents. 445 respondents filled out accurate questionnaires and the rest of the 35 respondents did not fill out the questionnaires.

Measurement and Scales

A five-point Likert-type scale of 1 to 5 where 1= very low/not applicable, 2= low, 3 = Moderate, 4 = high, and 5 = very High was used to ascertain the responses of the respondents through a well-designed questionnaire.

Questionnaire Development

The questionnaire was prepared to keep in mind the literature, conceptual framework, and indicators relevant to money management and investment decisions. The questionnaire was divided into sections covering socio-demographics, money management, knowledge about investment options, assessing financial products, financial skills, optimism bias, and investment Decision variables. Scaling (Using Measurement-Scale): There are different scales used in the business management and social sciences to measure attitudes, behavior, perceptions, opinions, and other kind of responses from the respondents in different research studies. These scales include Likert-Scale, Likert-type, Semantic, and others for recording the responses through an interviewing schedule or a questionnaire. Different statements based on the above-mentioned Likert-type scale were used for measuring the responses in this study.

Indexation (Developing Index-Variables): However, it is a rule of thumb that no single statement can measure the responses as responses are multi-dimensional. Therefore, it is recommended that at least two or more statements should be used to measure a variable. However, no researcher is confident that two or more statements measure the same idea. Therefore, Alpha-Test is used for the purpose and the variable coaming as an outcome of the application of this test is called the Index-Variable. Hence, Cronbach's Alpha Test was applied for the purpose of this research, and index variables were used in the data analysis. The same has been presented in the table-2, 3&4, below:

RESULTS AND DISCUSSION

This research would benefit more from a structural equation modeling strategy since it is more compatible with the prediction models (Bentler et al., 1987). Smart PLS4 was used to test the study model. First, the wellness of each scale was looked at in the way it worked in terms of reliability and validity. The term "convergent validity" is used to describe the relationship between measures or whether they are on the same scale (Hair et al., 2010). It is a simple way of saying the extent of agreement there is between measures on the same scale (wang et al., 2011). Composite reliability (CR 0.70) and average variance extracted (AVE 0.50) should be measured for each concept according to Fornell and Larcker (1981) in order to evaluate the measurement's convergent validity. All of the variables in Tables 2, 3 & 4 exceed the minimally allowable CR level. In the interval of 0.843 to 0.913. Investment Decision (0.883) beyond that, the AVE ranges from 0.562 to 0.827, Investment decisions are (0.520), Money management is (0.572), and optimism bias is (0.519). The factor loading level of 0.70 is the suggested one, and all variables reach it. The factor loadings of the variables fall somewhere between 0.683 and 0.847.

If a measurement is to be considered representative of its field, its discriminant validity must be checked (Hair et al., 2010). The dissimilarity between measurements is shown by wang et al. (2011). For discriminant validity to be satisfied, each variable's square root of AVE must be larger than the other correlation coefficients (Fornell and Larcker, 1981). Tables 2, 3, and 4 demonstrate that discriminant validity is supported because the square root of AVE for each variable is larger than its shared variance within a construct. Hence, the results demonstrate that the convergent validity has been attained.

Table 2. Index variable named money management.

Money Management	SFL	Alpha	CR	AVE
I save a portion of my pocket money regularly	0.743			
I can save despite having a low income/Pocket Money	0.748			
I am prepared to risk some of my own pocket money when making an investment	0.748	0.755	0.843	0.572
I truly see the importance of making money management	0.786			

Note(s) in Table 2, 3 and 4: α = Cronbach's alpha, CR = Composite reliability, SFL = Standardized factor loadings, AVE = Average variance extracted.

Table 3. Index variable named investment decision.

Investment Decision	SFL	Alpha	CR	AVE
Have you ever received professional advice or guidance regarding your investment choices based on your level of financial literacy?	0.726	0.846	0.883	0.520
In your opinion, how important is it to have a solid understanding of financial matters when making investment decisions?	0.683			
How do you think improving your financial literacy could impact your investment decision-making process?	0.693			

Do you believe that being aware of optimism bias can help you make more objective and realistic investment decisions?	0.742
Have you ever experienced situations where your optimism bias influenced your investment choices?	0.762
You are influenced by experts (Consumer or representative) and other investors decisions while making investment decisions	0.717
To what extent do you think optimism bias plays a role in shaping your investment decisions?	0.723

Table 4. Index variable named optimism bias.

Optimism Bias	SFL	Alpha	CR	AVE
How does optimism bias influence investors' perception of risk and return in investment	0.685	0.846	0.883	0.519
Can you explain how optimism bias might lead investors to underestimate potential risks associated with an investment opportunity?	0.697			
What are the psychological mechanisms behind optimism bias and how do they affect investment	0.737			
In what ways does optimism bias impact long-term versus short-term investment strategies?	0.760			
How can investors mitigate the negative effects of optimism bias while still harnessing its potential	0.717			
How does optimism bias affect decision-making during market booms and downturns?	0.719			
How do professional investors and fund managers manage optimism bias within their investment	0.726			

Assessment of Measurement Model

In accordance with Hair et al. (2017), the researchers examined the external model for validity and reliability. This led to an evaluation of the convergent reliability and internal consistency of the AVE, CR, and SFL with respect to standardized factor loadings. Tables, 3 & 4 show that the results demonstrated sufficient reliability and convergent validity, with SFL, CR, and AVE all exceeding the specified thresholds (0.736, 0.859, and 0.549, respectively) (Hair et al., 2017). Second, after applying the method proposed by Fornell and Larcker (1981), that is, the square root of AVE must be larger than the sum of any two correlations between latent constructs—discriminant validity was determined. Henseler et al. (2015) also used the advanced Hetrotrat-Monotrait Ratio Inference (HTMT inference) criterion test to back up the discriminant validity. Following the previous test's findings of discriminant validity, the HTMT inference results showed that all 95% confidence intervals (CI0.90) do not encompass the value of 1, as shown in Table 5. Final results: MM= 0.633, indicating acceptable model fitness according to Hair et al. (2017).

Correlation Analysis

The inner or structural model is used to unveil the association between the model's constructs (Hair et al., 2017). The predictive power of the model was assessed through the most common. There were significant relationships between the variables of four hypotheses, shown in Table 6.

Analysis of Path-Coefficients

The statistical results of the hypotheses with 5,000 bootstrap samples and a 95 percent bias-corrected confidence interval are shown in Table 7. Further, the results pertaining to behavior outcomes demonstrated that Money management is supported and has a highly significant effect. Thus confirming H2a supported due to significant effect. The results revealed the significant effect of optimism bias on repeat Investment Decisions Therefore, H4 is significantly supported. The results of the direct effects are summarized in Table 7.

In addition, the current research also followed Cohen's (1988) recommendations (effect sizes: small =0.02, medium = 0.015, and large = 0.35) to measure effect size (F^2) scores. The results in Table 8 showed the following effect sizes (F^2): F^2 MM = 0.0047 and F^2 OB = 795.752, which were all large effect sizes including Money Management.

R-Square

Method of coefficient of determination (R^2 value), which ranges from 0 to 1. The R^2 value of 0.899, 0.520, and 0.25 is considered substantial, and moderate, respectively (Hair et al., 2017). For the current model, the values of R^2 for endogenous constructs are shown in Table 9.

Direct Effect (Path Coefficients)

In Table 10, the p-value is 0.038 which is smaller than the level of significance (0.05), so the null hypothesis was rejected. The results are statistically significant between money management and optimism bias. It is concluded that money management has a significant and also positive effect on optimism bias.

Mediating Effect Performance

As far as the mediating analysis is concerned, the researcher followed the product indicator method in Smart PLS 4.1, which is preferable when the sample size is medium to large and latent independent and mediating constructs are reflecting measures (Henseler and Chin, 2010). The interaction effect of money management through optimism bias on investment decisions has a significant effect. Moreover, the results of all variables showed significant effects on Investment Decisions through optimism bias as a mediator. The Results from Table 11 and 12.

Table 5. Discriminant validity: (HTMT Ratio Table).

	Investment Decision	Money Management	Optimism Bias
Investment Decision	-	-	-
Money Management	0.636	-	-
Optimism Bias	0.703	0.633	-

Table 6. Correlation between the variables.

Correlation	Investment Decision	Money Management	Optimism Bias
Investment Decision	1.000		
Money Management	0.522	1.000	
Optimism Bias	0.999	0.520	1.000

Table 7. Results of path-coefficients analysis.

Path-coefficients analysis	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
MM -> OB	0.078	0.080	0.050	1.579	0.031
OB -> ID	0.999	0.999	0.001	1911.407	0.000

Note: *p < 0.01, **p < 0.05 ID = Investment Decision, MM = Money Management, OB= Optimism Bias.

Table 8. Results of F Square.

Money Management -> Optimism Bias	0.0047 (F^2 Values)
Optimism Bias -> Investment Decision	795.752

Table 9. Results of R-square.

Results of R-square	R-Square	Adjusted R-Square
Investment Decision	0.899	0.899
Optimism Bias	0.520	0.515

Table 10. Direct effect (Path-coefficients).

Direct effect (Path-coefficients).	Original Sample (OS)	Sample Mean (SM)	Standard deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
MM -> OB	0.107	0.109	0.052	2.080	0.038
OB -> ID	0.978	0.978	0.002	501.812	0.000

Note: Significant level of variables: ***p < 0.001

Table 11. Indirect effects (Specific path analysis).

Indirect effects (Specific path analysis).	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
MM -> OB -> ID	0.105	0.106	0.050	2.080	0.038

Note: Significant level: ***p < 0.001, significant level: p < 0.05

Table 12. Confidence Interval at 95%.

	Original Sample (O)	Sample Mean (M)	C.I lower Limit: 2.5%	Upper Limit 97.5%
MM -> OB -> ID	0.105	0.106	0.010	0.205

CONCLUSIONS

The results showed a significant relationship between money management and investment decisions. There was also a significant relationship between money management and optimism bias. Furthermore, optimism bias has also a significant relationship with investment decisions. Interestingly, there was a significant relationship between money management, through mediator optimism bias, and investment decision. The findings of this research work are aligned with previous results by Hu et al. (2011), Dou et al. (2012), Filieri (2016), Riquelme et al. (2016), and Ahmad and Sun (2018). However, these findings are relevant to the undergraduates of the public-sector universities in Punjab-Pakistan.

The study opens doors for further research on the value of specific financial education initiatives, potentially, leading to educational strategies to address money-management needs, particularly, among the educated youth in the country. Furthermore, this research was focused on undergraduates in Punjab, Pakistan, which is the limitation of the findings to other provinces of Pakistan. The specific cultural and economic context may influence investment behaviors differently in other areas. Again, the study relied on self-reported data from participants, which can lead to biases such as social attractiveness or erroneous self-assessment. Hence, other methods of data collection such as observation, in-depth interviews, and FGDs can be applied in future research.

REFERENCES

Ahmad, W., Sun, J., 2018. Modeling consumer distrust of online hotel reviews. Int. J. Hosp. Manag. 71, 77–90.

Bentler, P.M., 1987. Practical Issues in Structural Modeling. Common Problems/Proper Solutions: Avoiding Error in Survery Research/Sage.

Bernheim, B.D., Garrett, D.M., 2003. The effects of financial education in the workplace: Evidence from a survey of households. J. Public Econ. 87, 1487–1519.

Chen, H., Volpe, R.P., 1998. An analysis of personal financial literacy among college students. Financ. Serv. Rev. 7, 107–128.

Dou, X., Walden, J.A., Lee, S., Lee, J.Y., 2012. Does source matter? Examining source effects in online product reviews. Comput. Human Behav. 28, 1555–1563.

Duan, Y., Chen, C., Huo, J., 2019. The impact of monetary rewards for online reviews. Asia Pacific J. Mark. Logist. 31, 1486–1515.

Fernandes, T., Fernandes, F., 2018. Sharing dissatisfaction online: analyzing the nature and predictors of hotel guests negative reviews. J. Hosp. Mark. Manag. 27, 127–150.

Filieri, R., 2016. What makes an online consumer review trustworthy? Ann. Tour. Res. 58, 46–64.

Fishbein, M., Ajzen, I., 1975. Belief, Attitude, Intention and Behaviour: An Introduction 901 to Theory and Research. Read MA AddisonWesley 480, 902.

Fornell, C., Larcker, D.F., 1981. Evaluating structural equation models with unobservable variables and measurement error. J. Mark. Res. 18, 39–50.

Hair, J., Hollingsworth, C.L., Randolph, A.B., Chong, A.Y.L., 2017. An updated and expanded assessment of PLS-SEM in information systems research. Ind. Manag. Data Syst. 117, 442–458.

Henseler, J., Chin, W.W., 2010. A comparison of approaches for the analysis of interaction effects between latent variables using partial least squares path modeling. Struct. Equ. Model. 17, 82–109.

Henseler, J., Ringle, C.M., Sarstedt, M., 2015. A new criterion for assessing discriminant validity in variance-based structural equation modeling. J. Acad. Mark. Sci. 43, 115–135.

Hu, N., Bose, I., Gao, Y., Liu, L., 2011. Manipulation in digital word-of-mouth: A reality check for book reviews. Decis. Support Syst. 50, 627–635.

Li, K., Niskanen, J., Niskanen, M., 2019. Capital structure and firm performance in European SMEs: Does credit risk make a difference? Manag. Financ. 45, 582–601.

Pritazahara, R., Sriwidodo, U., 2015. The Influence of Financial Knowledge and Financial Experience on Investment Planning Behavior with Self Control as a Moderating Variable. J. Econ. Entrep. 15, 28–37.

Riquelme, I.P., Román, S., Iacobucci, D., 2016. Consumers' perceptions of online and offline retailer deception: a moderated mediation analysis. J. Interact. Mark. 35, 16–26.

Robb, C.A., 2011. Financial knowledge and credit card behavior of college students. J. Fam. Econ. Issues 32, 690–698.

Wang, M., Keller, C., Siegrist, M., 2011. The less You know, the more You are afraid of—A survey on risk perceptions of investment products. J. Behav. Financ. 12, 9–19.

Wollie, G., 2018. The relationship between inflation and economic growth in Ethiopia. Budapest Int. Res. Critics Institute-Journal 1, 264–271.