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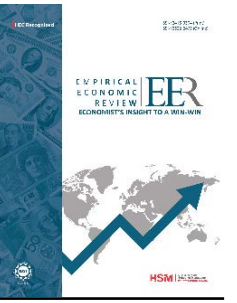

Title: **Evaluation of the Impact of Risk Tolerance and Financial Literacy on Investment Intentions of Securities Investors in Pakistan using the Theory of Planned Behavior (TBP)**

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Evaluation of the Impact of Risk Tolerance and Financial Literacy on Investment Intentions of Securities Investors in Pakistan using the Theory of Planned Behavior (TBP)

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Abstract

This paper aims to investigate the applicability of the Theory of Planned Behavior (TPB) in examining selected individuals' behavioral intention to invest in the capital market. It extends the TPB model by considering the role of risk tolerance as a significant factor that influences individuals' behavioral investment intentions. It also investigates the mediating impact of financial literacy on the relationship between TPB and investment intentions. This paper is based on a cross-sectional approach. The research model was tested using Structural Equation Modeling (SEM) technique. Data were collected from 114 individuals based in three major cities of Pakistan including Karachi, Lahore, and Islamabad through a survey questionnaire and analyzed via Smart PLS software. The results revealed the role of risk tolerance and financial literacy with regards to investment intentions of investors in financial securities. The current study indicates that attitude, subjective norms, perceived behavioral control, and risk tolerance significantly impact investment intentions. The above findings signify that financial literacy can increase the intention of investing in financial securities. However, the study also shows that financial literacy does not reduce the risk concerns of investing in securities. This study expands on the well-established TPB model by incorporating risk tolerance and financial literacy as moderators of behavioral intentions. It also extends the applicability of TPB in the area of investment decision-making towards all financial securities. Moreover, this study is limited to the financial sector of Karachi, Pakistan and can be extended to include the cross-country evaluation of the effect of financial literacy on risk tolerance.

Keywords: financial literacy, intention, risk tolerance, Theory of Planned Behavior (TPB)

Introduction

Human beings make decisions on a regular basis as operational engines for their life. The capacity to make decisions has a direct impact on all parts of life. As a result, the human decision-making process has remained a crucial part of research. Initially, the decision-making process was taken into consideration from the perspective of economic affairs (Fama, 1970). Rational decision-making depends on the information available, its analysis, and the selection of the optimal utility level. The rational decision-making of human beings is backed by the expected utility theory (Schiffman & Kanuk, 2007). Different authors including Markowitz (1999), Sharpe & Pnces (1964), and Fama (1970) identified the individual's rational decision-making practices while investing in portfolios, deciding asset pricing, and market efficiency, respectively. Later on, these aspects of rational decision-making were challenged due to a lack of sufficient information, motivation, and time (Simon, 1997).

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Hence, the rules governing traditional financial and economic theories were questioned. The field of economics emerged that could properly address the irrational decisions of human beings. Behavioral economics and behavioral finance explain the regular errors made by individuals in the decision-making process (Tomer, 2016). Individuals tend to make decisions that yield only satisfactory outcomes but are not optimal. Hence, the question arises, what are the factors that affect the rational decision-making of individuals? Certain market factors influence the rational decision-making of individuals regarding investment in financial markets and securities. An investor's rational decision-making when investing in financial securities is influenced by cognitive, psychological, and market factors. These factors include changes in price, customer preferences, market information, and risk tolerance (Raut et al., 2018; Riaz et al., 2020). From Pakistan's perspective, the level of risk associated with investment decisions is very significant due to the uncertainty in the economic and political situation of the country. The level of risk tolerance varies according to the amount of ambiguity and insecurity in financial markets. Certain studies revealed that a perceived risk impacts the investor's intention towards investment (Brewer et al., 2007).

Therefore, due to the uncertain economic and political situation, there is a dire need for an investigation into the risk tolerance level of investors in the Pakistani market. Besides risk tolerance financial literacy plays a vital role in the decision-making process regarding investment in financial securities. Previous studies suggest that there exists a positive relationship between financial literacy and investment intention. Individuals with a higher level of financial knowledge not only have sound decision-making abilities but are also better at making budgets, saving money, controlling spending, retirement planning, and wealth accumulation (Lusardi & Mitchell, 2008; Lusardi & Mitchelli, 2007; Moore, 2003; Perry & Morris, 2005; Stango & Zinman, 2009). Therefore, the role of financial literacy is very important in decision-making regarding investment. Financial literacy across Pakistan is low due to a lack of interest in financial markets. The external environment is volatile and adequate financial knowledge is required before investors get positive outcomes from their investments in financial securities. Previous research is insufficient to properly explain investor behavior, financial knowledge, and risk tolerance, especially in the Pakistani context.

Hence, there exists a research gap regarding both risk tolerance and financial literacy among Pakistani investors. This paper aims to investigate the investment intention of Pakistani investors in financial securities. Moreover, this study incorporates the theory of planned behavior adopted by other studies to measure the behavioral intention in other areas. The theory of planned behavior is widely used in predicting decision-making, intention, and behavior. Different subjects and studies have already applied the theory of planned behavior in different contexts to predict the intention and behavior of individuals (Lusardi & Mitchell, 2008; Raut et al., 2018). Following suit, the theory of planned behavior is also used in this study, along with incorporating risk tolerance as a predictor and financial literacy as a moderator.

The integration of behavioral biases such as conservatism, past behavioral biases, and risk tolerance were addressed by different authors in previous literature (Dash, 2010; Ibrahim & Arshad, 2018; Purwidianti & Tubastuvi, 2019; Raut et al., 2018). This study has incorporated risk tolerance as a predictor of investment intention and financial literacy as a moderator among all predictors and dependent variables. There is little to no literature available that sheds light on the moderating role of financial literacy in the context of behavioral biases among Pakistani investors.

Moreover, it's imperative to study the role of risk tolerance among Pakistani investors because people are more tilted towards loss aversion and risk tolerance owing to the uncertain political and financial conditions prevalent in the country. This study has immense significance because it provides an understanding of Pakistani investors. The role of risk tolerance in decision-making regarding stock exchange investment provides insight into the level of risk-taking behavior among Pakistani investors.

The results show that investors avoid risk-free securities. This finding implies that Pakistani investors like risk aversion when making investment decisions. Moreover, the moderating role of financial literacy is supported which shows that if investors have sound knowledge regarding any security, they are highly likely to invest more and vice versa. This finding implies that knowledge sharing among investors is a key element of a successful investor intention. Moreover, increased financial literacy is also very helpful in reducing risk averse behavior among investors as knowledge sharing enhances the investors' confidence in the security. The rest of the paper is divided as follows: Section 2 discusses the literature review of the TPB and additional constructs like risk tolerance and financial literacy. Section 3 describes the research methodology used, while, Section 4 provides data analysis and interpretation of results. The last section concludes the discussion and provides future direction.

Literature Review

This section briefly discusses the founding concepts of this empirical research study. The constructs are elaborated upon and the proposed hypothetical relationship between the variables is also argued.

Theoretical Underpinnings of the Theory of Planned Behavior (TBP) on Financial Decision -Making

This study explores the concept of individual decision-making, proposed in the Theory of Planned Behavior (TPB). TPB was presented by Ajzen (1987) as an extension of his Theory of Reasoned Action (TRA). TPB predicts investment interest is based on three major factors. Initially, TRA was based on the constructs of attitude and subjective norms, which influence an individual's intention and in turn their behavior. Attitude towards behavior explains how individuals evaluate the outcome of their behavior. Subjective norms explain how individuals give importance to the influence exerted by their peers and society as a whole. However, TPB provided another motivating factor towards intention, i.e., perceived behavior control (PBC). PBC describes how much the individual expects ease of use and control in the decision-making process (Ajzen, 2002). TPB states that the individuals' intention to behave is influenced by three factors: attitude, subjective norms, and PBC. According to the principle of correspondence, TPB convert intentions into actual behavior (Ajzen, 1987). Therefore, this study focuses on investors' intention to invest. Ajzen (2011) states that TPB can be generalized towards different disciplines and extended provided that the concept of generalization and the principle of correspondence are followed. Keeping in mind these points, this study proposes an explanation of TPB by adding the variables of risk tolerance and financial literacy.

Attitude and Investment Intentions

An individual's tendency to react or respond to a behavior refers to as attitude. It also portrays an individual's judgments of the outcomes of a particular behavior. It can be in various forms such as objects, events, and people. It can also be seen as favorable or unfavorable (Kashif et al., 2017). An individual's attitude toward a behavior is influenced by their belief concerning their subjective judgment of the world around them; what they understand about themselves and their environment; how they link certain behaviors with numerous behaviors or losses that may be attained by them if they do or do not do so. Attitude toward behavioral intention depends on an individual's beliefs created based on experiences and information received by that individual. Consequently, a positive or negative attitude towards behavioral intention depends on their behavioral beliefs towards that attitude (Ajzen, 1987). Hence, the attitude of individuals plays an important factor in initiating behavioral intention. Different financial researchers have discovered that attitude towards investment depends on the risk involved. This, in turn, influences their intention to invest in any financial security (Fünfgeld & Wang, 2009; Wood & Zaichkowsky, 2004). In the perspective of this study, a person's attitude regarding investment is an essential parameter in promoting investment intention and gaining financial stability (Akhtar & Das, 2018). Based on this concept the study hypothesized that:

H1: Attitude towards investment has a positive impact on the intention to invest.

Subjective Norms and Investment Intentions

Subjective norms can be defined as social pressure to act or not to act (Ajzen, 2011). SN refers to an individual's perceptions of how they would be viewed by other groups in society if they performed a certain behavior. Subjective norms in decision-making are influenced by normative beliefs about close family members, friends, and associates. Many researchers posit the influence of subjective norms in the area of investment in financial securities (Ibrahim & Arshad, 2018; Lai, 2019; Ryu & Ko, 2019). Their findings indicate that SN has a significant influence on an investor's investment decision. Investors who have limited or no financial knowledge mostly rely on the suggestions of family members, relatives, and close friends when making an investment decision. These studies also recommend that financial security investors are more fascinated with the investment when more of their peers participate in the stock market. Therefore, social norms suggest a way of changing individual investor behavior because of their relationships (Akhtar & Das, 2018). Their findings indicate that subjective norm is positively associated with investment intention and that this is because of the dominancy of social influence in the Pakistani society. Therefore, it's hypothesized:

H2: Subjective norms towards investment have an impact on the intention to invest.

Perceived Behavior Control and Investment Intentions

Perceived behavioral control (PBC) refers to the extent to which an individual perceives performing a specific behavior as easy or difficult. The concept of perceived behavior control is introduced as the perception of ease and comfort in directing a specific behavior. This behavior depends on the intention to behave and is affected by the existence or absence of the required resources and opportunities. The intention to behave has a positive relationship with the perception of comfort and the capability of performing that act. It means that when an individual believes that they can take that action easily, their intent to perform it will be higher (Ajzen, 1991; Ibrahim &

Arshad, 2018; Wang et al., 2019). Contextually, Mahastanti and Hariady (2014) suggested that an investor's intention to invest in the stock market can only be predicted significantly through perceived behavior control. The findings suggest that when a person has the opportunity and ability to invest in the stock market, they will be inspired to perform these activities. Another study, conducted by Cuong and Jian (2014) investigated the behavioral control element that can be used to explain investors' behaviors in the Vietnamese stock market. Researchers further discussed that past experiences, data obtained from relatives, family and friends, and resource availability, individually and altogether, can assist in controlling the perceived ease of doing in investment behaviors. This study, therefore, proposed the hypothesis:

H3: Perceived behavioral control towards investment has an impact on the intention to invest.

Risk Tolerance and Investment Intentions

A person's willingness to engage in financial behavior with uncertain results can be interpreted as risk tolerance. It also refers to risk avoidance behavior (Magendans et al., 2017). However, Lim et al. (2013) specify risk tolerance as a non-permanent response to a specific stimulus situation (Lim et al., 2013). The findings from previous research have shown that risk tolerance is interconnected to high-risk investment selection (Gazali et al., 2018). An individual's level of risk tolerance is affirmatively able to forecast the intention to invest in financial assets (Croy et al., 2010). They found that individuals with a high level of risk tolerance prefer to invest in riskier financial assets and deny participating in risk-free investments. In support to these findings, the study of Weber et al. (1998) suggested that individuals with a low level of risk tolerance tended to look for ways that they could avoid risk (Aren & Hamamci, 2020). This helped formulate the following hypothesis:

H4: Risk tolerance towards investment has an impact on the intention to invest.

Financial Literacy

Financial literacy is a factor that influences an individual's investment interest. It refers to knowledge of financial securities and their technical and fundamental evaluation for investment purposes (Aren & Hamamci, 2020). The understanding of financial securities helps investors make investment decisions with confidence (Purwidianti & Tubastuvi, 2019). Financial literacy is a factor that allows investors to manage their investments in such a manner so as to acquire maximum returns (Lusardi & Mitchell, 2008). Garg and Singh (2018) referred to financial literacy as a means of removing poverty and improving the financial well-being of households. Concerning the objective of this study, financial literacy is a level of intelligence and knowledge that demonstrates the decision-making capability of investing in financial instruments (Aren & Hamamci, 2020). Financial literacy has been investigated regarding TPB by different researchers. These include the effects of financial literacy on risk aversion and investment preference or the effect of financial literacy on gender and culture.

Moderating Role of Financial Literacy

Financial literacy is the knowledge, of an investor, related to financial securities that they intend to invest in. Several researchers have investigated financial literacy in a different context.

Adam et al. (2018) found that financial literacy has a positive impact on planning for retirement, support of family, and financial well-being. Potrich et al., (2018) concluded that financial literacy has a positive impact on compulsive buying behavior. The research conducted by Fedorova et al. (2015) stated that investors with financial literacy, proactively participated in the stock market. This relationship was also discovered by Van Rooij et al. (2011). They found that low financial literacy negatively impacts stock preferences. The impact of financial literacy on decision-making in the Indian stock market, by implementing TPB, was explored by Sivaramakrishnan et al., (2017). The mediating effect of big five personality traits between financial literacy and investment decisions was explored by Hamza and Arif (2019). Tauni et al. (2017) discovered a negative impact of financial literacy on the extraversion trait of the big five model. A detailed investigation by Tauni et al. (2017) posited that individuals with personality traits other than conscientiousness are willing to invest in risky securities based on the information they receive.

Besides big five model significance in investment decisions, financial literacy and risk tolerance are found to be considerable factors in investment decision-making (Dash, 2010). In another study the variable financial literacy is investigated with regards to risk tolerance related to an investment decision (Wang et al., 2011). Investigators have found a positive relationship between financial literacy and risk-averse investment behavior.

Although, numerous research is available on financial literacy concerning the big five personality theory or risk tolerance, its' moderating role is still a new phenomenon. Shah et al. (2021) studied the moderating role of financial literacy among overconfidence heuristics and investment decisions. Sadiq and Khan (2019) found a significant moderating role of financial literacy between risk behavior and investment intention. However, investigating the moderating role of financial literacy between attitude, subjective norm, perceived behavioral control and risk tolerance on investment intention in light of the TPB is relatively new and can add to the literature of behavioral finance.

Therefore, based on the above discussion, this study hypothesizes that

H5: Financial literacy moderates between attitude and the intention to invest.

H6: Financial literacy moderates between subjective norms and the intention to invest.

H7: Financial literacy moderates between perceived behavioral control and the intention to invest.

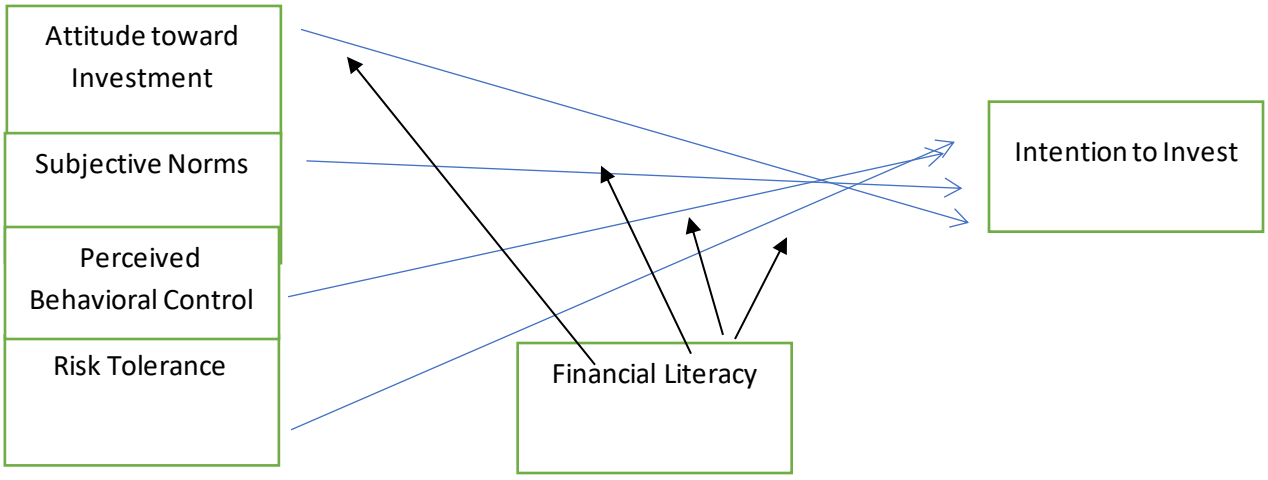
H8: Financial literacy moderates between risk tolerance and the intention to invest.

Methodology

This study uses cross-sectional survey research to test the theoretical model and hypotheses. The cross-sectional design is used to measure the phenomenon at a particular time and it is a widely used design in management sciences. This design used a survey strategy that provides strong reasons and explanations of association among variables of interest (Saunder et al., 2012). The sample size was calculated using G Power analysis and it was more than 90. G power is supposed to be a reliable sample size calculator (Erdfelder et al., 1996). The instruments used in this study are adopted from the following sources: Attitude from Chen and Li (2007), and Taylor and Todd

(1995); Subjective norms from Taylor and Todd (1995); perceived behavioral control from Taylor and Todd (1995), and Bansal and Taylor (2002); intention to invest from Chen and Li (2007); risk tolerance from Hallahan et al. (2004) and the construct of financial literacy from Lusardi (2008), and Ghaffar and Sharif (2016). The unit of analysis in this study are individuals who are involved in financial securities investment in the Pakistan Stock Exchanges of Karachi, Lahore, and Islamabad. The Snowball sampling technique was used to collect the data. Snowball sampling is used where it is difficult to identify the respondents (Saunder et al., 2012). In this study, it was difficult to approach the members or investors directly interested in securities investment. The primary data was collected through a close-ended questionnaire circulated google forms and hard copies. The respondents were asked to respond on a 5 point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). A total of 300 questionnaires were distributed and 114 valid responses were obtained indicating 38% response rate which is acceptable for representation (Saunder et al., 2012).

Theoretical Model



The data received from respondents was scrutinized for missing values. The demographics were identified with the help of SPSS and path analysis was conducted by using Smart PLS.

Population and Sample

Data were collected from respondents through an adopted questionnaire from previously mentioned sources and was prepared in the google form for further distribution. The population consists of investors in financial securities, who have either invested in any type of security or planning to invest. Due to a lack of time, proper sample frame, and resources, snowball sampling was used in this study. Most of the respondents are between the ages of 20-30 (61.4%) and can be classified as the millennial generation.

Results and Findings

The following table explains the demographic information. Table 1 describes the characteristics of the sample. The majority are aged between 23-30 years, of which 55 (78.6%) are male. From this age group, 51 (64.6%) are managers and 12 (54.5%) are VPs.

Table 1 *Sample characteristics*

	Values	%	Position		
			Manager	AVP	VP
Gender					
Female	18	15.8	18	0	0
Male	96	84.2	**61**	13	22
Age					
20-30	70	61.4	**51**	7	**12**
31-40	33	28.9	21	6	6
Above 40	11	9.6	7	0	4
Education					
Graduate	47	41.2	1	0	1
Masters	61	53.5	**43**	8	10
PhD	4	3.5	2	2	0
Other	2	1.8	2	0	0
Name of Organization					
Allied Bank	1	0.9	1	0	0
Meezan Bank	6	5.3	4	2	0
UBL	6	5.3	4	0	2
Others	101	88.6	**70**	11	20
Position					
Manager	79	69.3			
AVP	13	11.4			
VP	22	19.3			

At first, the validity and reliability of the questionnaire and items were checked. Once validated, a structural equation model was constructed to test the direct and moderated paths.

Convergent Validity

Convergent validity of items is established when factor loading is more than 0.7, AVE is less than 0.5, and Cronbach's alpha and composite reliability is more than 0.7 (Hair Jr et al., 2017). Table 2 presents the results of the validity measurement of the questionnaire. Few items of financial literacy are removed due to loading lower than 0.4, based on the recommendation of Sholihin and Ratmono (2013). The results in table 2 prove the validity of the construct as most of the values of Cronbach's alpha and composite reliability are above the criterion of 0.7. However, the lower values are acceptable only if they are not below 0.6. The results below satisfy this criterion (Hair Jr et al., 2017).

Table 2 *Convergent Validity*

Variable	Item	Loading	Cronbach's Alpha	CR	AVE
Attitude	AT1	0.938	0.913	0.945	0.852
	AT2	0.917			
	AT3	0.914			
Subjective Norms	SN1	0.795	0.793	0.879	0.709
	SN2	0.886			
	SN3	0.842			
Perceived Behavior Control	PBC1	0.873	0.819	0.892	0.734
	PBC2	0.870			
	PBC3	0.827			
Risk Tolerance	RT1	0.581	0.661	0.800	0.578
	RT2	0.883			
	RT3	0.784			
Investment Intention	IN1	0.760	0.785	0.873	0.698
	IN2	0.891			
	IN3	0.850			
Financial Literacy	FL1	0.596	0.645	0.761	0.382
	FL3	0.609			
	FL4	0.664			
	FL6	0.725			
	FL8	0.520			

Discriminant Validity

Discriminant validity estimates the differences of items of one variable for the other variable (Hair Jr et al., 2017). Three major criteria establish discriminant validity. First, the AVE of the item in Fornell's (1981) test result is higher in comparison to other items. Second, HTMT values are below 0.8 and third, cross-loading of the item is above other items (Chin, 1998). Based on the results shown in table 3 and 4, the discriminant validity of all items and variables is established.

Table 3 *Fornell Larcker Test Results*

	AT	SN	PBC	RT	INT	FL
AT	**0.923**					
SN	0.714	**0.842**				
PBC	0.408	0.411	**0.857**			
RT	-0.327	-0.119	-0.246	**0.760**		
INT	0.674	0.554	0.479	-0.428	**0.835**	
FL	0.242	0.343	0.514	0.041	0.287	**0.626**

R-Square

An R square value predicts the overall validity of the model. First, the structural equation of direct paths was modeled, and later on, each moderation effect is tested separately. Table 5 below presents the model fit details. The R square value clearly shows that overall, all four variables: attitude, subjective norms, PBC, and risk tolerance directly affect 55% of the intention to invest. When moderated by financial literacy, the attitude has the highest influence on intention i.e., 34%.

Table 4 *Heterotrait-Monotrait Ratio*

AT	SN	PBC	RT	INT	FL
0.839					
0.474	0.511				
0.375	0.188	0.306			
0.765	0.699	0.596	0.528		
0.302	0.416	0.648	0.262	0.399	

Summary of Hypotheses Testing

The hypotheses in this study are assessed using Structural Equation Modeling (SEM) in Smart PLS software, bootstrapping at 5000 samples. Most of the results met the criteria of significance level < 0.05 and hence support the proposed hypothesis. Table 5 below presents a summary of all the path analyses. Based on these results, it can be concluded that the first hypothesis which states that attitude toward behavior has a positive effect on investment intentions, is supported ($p<0.05$, $\beta=0.414$). Therefore, it can be concluded that the financial investors showed positive attitude towards investment intention The second hypothesis which states that subjective norms have a positive effect on investment intention is also supported ($p<0.05$, $\beta=0.151$). It can be concluded that the influence of groups around investors influences their investment decisions. The third hypothesis which states that perceived behavior control has a positive effect on investment intention is also supported ($p<0.05$, $\beta=0.193$). It can be concluded that the investor's perception about their knowledge regarding securities and the perceived control of investment directly influences them to invest in financial securities. The fourth hypothesis which states that risk tolerance has a positive effect on investment intentions is supported ($p<0.10$, $\beta=-0.228$). It can be concluded that when investors are risk-tolerant, they critically evaluate the securities and prefer not to buy risky securities.

The fifth hypothesis is supported ($p<0.05$, $\beta=0.168$) which states that financial literacy moderates the effect of attitude towards investment intention. It can be concluded that when investors have more knowledge about the securities, their belief in the outcome of the investment strengthens, leading them to invest more. The sixth hypothesis which states that financial literacy moderates the effect of subjective norms on investment intention, is declared supported ($p<0.05$, $\beta=0.104$). This means that even with more knowledge about how to invest and where to invest, the investor is influenced by the herding effect from peer-groups. The seventh hypothesis which states that financial literacy moderates the effect of perceived behavioral control on investment intention, is declared supported ($p<0.05$, $\beta=0.135$). It implies that as investors gain more knowledge about securities, they are more confident in their investment, returns, and perceived control over investing, and the outcome of investments improves. This influences them to invest more in financial securities. The eight hypothesis which states that financial literacy moderates the effect

of risk tolerance on investment intention, is not supported (p>0.05, β=-0.125). It can be concluded that financial literacy strengthens or weakens the relationship between risk tolerance and investing in securities. This risk aversion attitude influences them to be careful in investing and hence their investment intention towards financial securities decreases.

Table 5 *R-Square*

Hypotheses	**R Square**	**Adjusted R square**	**P-value**
Direct effect	0.554	0.535	0.000
Indirect effects			
AT → FL → IN	0.343	0.337	0.000
SN → FL → IN	0.244	0.237	0.000
PBC → FL → IN	0.168	0.160	0.000
RT → FL → IN	0.057	0.048	0.000

Table 6 *Hypothesis Testing*

	Hypotheses	**Path Analysis**	**p-values**	**Result**
H_1	AT → IN	0.414	0.000*	Supported
H_2	SN → IN	0.151	0.003*	Supported
H_3	PBC → IN	0.193	0.002*	Supported
H_4	RT → IN	-0.228	0.054**	Supported
H_5	AT → FL → IN	0.168	0.038*	Supported
H_6	SN → FL → IN	0.104	0.011*	Supported
H_7	PBC → FL → IN	0.135	0.032*	Supported
H_8	RT → FL → IN	-0.125	0.297	Not supported

*p < 0.05; **p < 0.1

Discussion

This study aims to evaluate the role of risk tolerance as an antecedent of investment intention and financial literacy as a moderator with the help of the theory of planned behavior. Previous studies have also discussed the relationship between financial literacy and investment intention and found a positive association between the two. Lusardi and Mitchell, (2008; 2007), Moore (2003), and Perri and Morris (2005) have found a similar relationship between financial literacy and investment decision-making regarding budgetary control, money saving, and restricted spending. Hence, in this study, the relationship is explored by incorporating financial literacy as a moderator in the theory of planned behavior. In this context, the findings of this research reveal that there is a positive nexus between investment attitude and investment intentions. There exists a positive relationship between subjective norms and investment intention which show that the investment intention increases with higher social influence. Similarly, perceived behavioral control has a positive influence on the investment intention of individuals. Higher control leads to a stronger

intention to invest in financial securities. These findings are consistent with previous studies by Mahardhika and Zakiyah (2020), and Raut et al (2018).Furthermore, this research also found that risk tolerance positively affects an individual's investment intention. This means that individuals with higher risk tolerance have stronger investment intentions and vice versa. Previous studies also evaluated the role of financial risk tolerance (Hallahan et al., 2004), risk perception of securities, risk aversion, and risky investment intention (Aren & Hamamci, 2020) and found similar findings. The path analysis established a significant positive moderated effect of financial literacy with all antecedents of investment intention except risk tolerance. Similarly, Lusardi and Mitchell (2007; 2008) found that individuals with higher financial literacy may plan better retirement plans as compared to individuals with lower investment knowledge. The findings by Purwidianti and Tubastuvi (2019) also provide similar results for SMEs of Indonesia regarding financial literacy. This non-supported path shows that individuals with higher financial knowledge are more risk averse as compared to those who have limited financial knowledge of financial securities.

This study revealed that despite ample knowledge of financial decision making and financial management, investors often rely on the herding effect in the group rather than using financial knowledge. Similarly, the influence of perceived behavioral control inhibits the financial investment decisions because investors are more confident when they are financially literate and find the returns on their investment easier than financially illiterate investors. Lastly, we witnessed that financially literate investors are more cautious about risky securities since they have relatively more knowledge than amateur investors. Warren Buffet, the famous experts of the stock market, once said that "it is not the intellect but the temperament that is important while investing", this quote focuses on the fact that behavior is more important than cognitive abilities since investors behave in a certain emotional way than rational people. Likewise, investing in the stock market in Pakistan has always been a dilemma for investors, where some investors have made fortunes and others have suffered heavy losses. It is evident from previous literature that investors in Pakistan are relatively frugal and risk-averse and they are lack of financial knowledge in the capital markets. Hence, led the research to scientifically study the reasons behind the investment intentions among Pakistani investors.

Conclusion

This study aimed to assess the impact of variables involved in the investment decisions of investors, wherein significant conclusions were drawn based on primary data collected from investors of different demographics, financial education levels and, risk appetite based in Karachi, Lahore, and Islamabad. The data collected was then tested empirically to draw different conclusions concerning the investment behavior of investors in financial securities. In this study, six variables i.e., attitude, subjective norms, perceived behavior control, risk tolerance, investment intention, and financial literacy were studied and conclusions were drawn that are beneficial to further study and explore behavioral aspects of human beings in financial decision making.

It has been concluded that 6 variables that are mostly related to the theory of planned behavior and financial literacy have positively impacted investors' intention to invest in the stock market. It is seen that financially literate investors were more tilted towards investing. Therefore, it is suggested there should be stock market awareness programs, and people with disposable income need to be given information by stockbrokers and investment managers following which more people will invest in the stock market. Moreover, ease of investing is absent in Pakistani markets

as compared to developed nations. It is recommended that there should be easy procedures for beginners who want to invest but face difficulty, thereby affecting their perceived behavior control.

Practical and Theoretical Implications

This study contributed to the previous literature by incorporating risk tolerance as an antecedent of investment intention and financial literacy as a moderator among these constructs. Moreover, the findings implicate that risk tolerance can be increased by enhancing financial literacy and financial literacy can be boosted by increasing the interest of individuals in financial markets. Individuals in Pakistani markets are risk averse due to the unstable economic and political situation. Moreover, the financial securities infrastructure also creates hindrances in the risk-taking behavior of individuals.

By including risk tolerance as a predictor of investment intention and financial literacy as a moderator in the theory of planned behavior, this study conceptually implicates current knowledge. It is revealed from the study that investors' attitude towards investment is positive, that is, they are more tilted towards financial markets owing to their positive trajectory towards financial markets. Similarly, the positive effect of subjective norms was witnessed regarding investment intentions of investors, i.e., they are more likely to invest in stock markets/other financial securities if they see people engaging in similar behavior displayed by coworkers. Moreover, the perceived behavioral control of the investor, which in this case is the perception of their ability to invest in the financial market, was resultantly positive concerning investment intention, which means investors in Pakistan do think they can operate and invest in financial markets. Similar findings are reported by Mahardhika & Zakiyah (2020), and Raut et al. (2018). Different from previous studies, risk tolerance being another important variable of the study was empirically tested in light of investment intention. It showed a positive effect in terms of an investor's knowledge regarding a particular stock, i.e., investors tend to be less risk tolerant about risky stocks thereby supporting the risk tolerance/capacity of the investor to bear the risk. Furthermore, financial knowledge is key to an investor's positive intention to invest in the stock market since they are more likely to understand the financial analysis, i.e., both technical and fundamental, thereby participating more in financial securities. The findings from these two variables contribute to previous literature as a hybrid theoretical model of the theory of planned behavior. In behavioral finance, the inclusion of behavioral and psychological factors in financial decision-making with the help of the theory of planned behavior is quite often used to understand the investment intention of investors (Bashir et al., 2013; Ibrahim & Arshad, 2018; Riaz et al., 2020; Shah et al., 2020)

Limitations and Future Research Directions

This study has certain limitations. The study is limited to only three cities in Pakistan which is a limited geographical area. Future studies can be conducted across all stock exchanges in Pakistan and among Asian investors to generalize the results. Besides this, a small sample was used in this study due to the specialized focus on millennial investors. Future studies can include more individuals with different genders, ages, and educational criteria. Further, different variables of psychological and behavioral biases like herding, loss aversion, conservatism, etc. can be incorporated to investigate investment intentions. More importantly, this study used a cross-sectional study design, in the future invertor behavior can be measured through longitudinal data collection method.

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