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Investment Behaviour of Individual Investors of Pakistan Stock Market with Moderating Role of Financial Literacy

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Abstract: The purpose of this study is to examine the determinants of investors' behaviour in the Pakistan stock market with the moderating role of financial literacy. The study also explains the mediating mechanism between the attitude of investment, religiosity, social influence and investment behaviour in stocks. This study used quantitative method to test the hypotheses. The data was collected by using survey approach and self-administrative questionnaire. The data was collected from 250 stock investors through convenience sampling. This study utilized Partial Least Squares structural equation modelling method (PLS-SEM) to test modelled hypothesis and used the Smart PLS version 2.0 to conduct the analysis. This study found that social influence and religiosity influence investment intention while religiosity doesn't affect investment behaviour. This study also indicates that relationship of investment intention and investment behaviour of individual investors in stock market was significantly moderated by financial literacy. Moreover, results indicate that intentions to investment significantly mediate between the religiosity and investment in stock. Similarly, intentions to investment significantly mediate between social influence and investment in stock. However, intention to investment doesn't significantly mediate between attitude toward investment and investment behaviour in stock. This study extends the existing literature, specifically in a Pakistan context and helps the policymaker to develop policies to increase investment in the stock market.

Keywords: attitude toward risk, social influence, religiosity, intentions to invest in the stock, investment behaviour

INTRODUCTION

Investment behaviour of the individual investors got popularity in academics because of participation of individual investors in the stock market has suddenly increased in recent years (Calvet, Célérier, Sodini, & Vallée, 2017). There are several causes for this increase: first, is the unprecedented return on the assets of the stock market, opportunities of "making money work" and attaining returns on invested money. Second, the high liquidity of financial instruments which means an investor could rapidly convert to financial market instrument into cash. Third, a variety of financial assets that means a series of financial assets accessible to individuals, they can select assets according to the objectives of their investment (Akhtar & Das, 2019). Meanwhile, a wide range of financial assets and services offered by financial market have made it more complex and difficult for individual investors to make investment rationally (Ledgerwood, Earne, & Nelson, 2013; Schmukler & Didier, 2014; Tauni, Fang, Mirza, Memon, & Jebran, 2017), consequently, investors indulge in irrational behaviour.

Behavioural finance argues that numerous investors possess a risk-averse attitude and influenced by others (Guiso & Jappelli, 2006), that lead them toward behavioural biases (Kahneman, Knetsch, & Thaler, 1991). Individual investors are influenced by different psychological and emotional elements, which may lead them towards irrational investment behaviour (Campbell, 2006; Goetzmann & Kumar, 2008; Kumar & Goyal, 2016). The rational investment decision-making process requires complete information regarding investment, rational thinking and proper analysis of information associated with investment (Rubaltelli, Pasini, Rumiati, Olsen, & Slovic, 2010). Most individual investors fail to make rational investment decisions due to ignorance of their investment goals (Sabir, Mohammad, & Shahar, 2019). Moreover, individuals are misled and confused about their investment objectives and fail to achieve their investment goals because they cannot align their projected returns with their risk-taking attitude (Hoffmann & Post, 2017). Hence, there is a need to understand the

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investment behaviour of individuals and what factors affect the behaviour of individual investors in a stock market.

Individual investors articulate their behaviour towards investment based on projected outcomes of investment, expected risks and benefits regarding their investment, and social influence. Moreover, knowledge and awareness of that investment could be the most important factor that influences the behaviour of individual investors. Investment behaviour of investors can be investigated by employing theoretical framework of theory of planned behaviour (TPB) that developed by Ajzen (1991). This theory explains that behavioural intentions affect an individual's behaviour, while behavioural intention affected by the attitude of individuals to perform an act and subjective norms. Furthermore, "perceived behaviour control" also has an effect on the behavioural intentions and individual's behaviour. The attitude to perform an act can be defined as positive and negative emotions about the consequences of that particular act. Whereas subjective norms represent social pressure induces an individual to involve in a particular behaviour and perceived behaviour control could be a barrier or facilitator to perform that behaviour (Ajzen, 1991). Religious knowledge or religiosity is an important variable that can affect investment intention and investment behaviour of individuals, therefore it is a perceived behaviour control factor (Essoo & Dibb, 2004). The TPB intends that the intention of an individual is the direct precursor for their behaviour, however, attitude, subjective norms and perceived behavioural control has an influence on an individual's intention.

Considering these, this study employed the model of TPB to investigate the investment the behaviour of individuals towards investment in stock. A lot of studies have been conducted on the investment behaviour of individual investors (Akhtar & Das, 2019; Goetzmann & Kumar, 2008; Korniotis & Kumar, 2011; Kumar & Goyal, 2016). However, very limited studies have been conducted in the Pakistani context regarding individuals' investment behaviour in stock e.g. (Bashir, Fatima, Ilyas, & Shehzad, 2014; Shahzad, Awan, & Qureshi, 2014). The contemporary study attempts to investigate the behaviour of individuals investing in Pakistan Stock exchange.

The present study contributes to the emerging literature on behavioural finance from various perspectives. Firstly, the preceding studies on individual investor's behaviour assumed homogeneity across the centuries, while in the practical, this assumption is not possible. Secondly, this study has included religiosity as perceived behavioural control in the model of TPB, where the religiosity is a most important determinant of intention and behaviour and earlier studies ignore this variable. Thirdly, previous research studies ignored financial literacy, while financial literacy improves the ability to collect and analyse the data regarding investment.

The rest of the paper is structured that second section elaborate empirical studies, section three consisting of data and methodology, while section four containing results and section five having conclusion and policy.

LITERATURE REVIEW

An investor's personal, psychological and emotional factors influence their behaviour (Pak & Mahmood, 2015; Sivaramakrishnan, Srivastava, & Rastogi, 2017; Tauni et al., 2017). The attitude of individuals toward risk, perception of social influence and faith determine the intentions of investors (Akhtar & Das, 2019; Akhtar, Thyagaraj, & Das, 2018; Bali, Demirtas, Levy, & Wolf, 2009) and intention shape the behaviour of individuals. Previous literature has revealed that risk-taking attitude, social interaction, emotions, religious faith and financial knowledge are the key determinants of investment behaviour and investment decisions (Korniotis & Kumar, 2011; Kumar & Goyal, 2016; Tahir & Brimble, 2011).

Risk-taking attitude and intention to invest in the stock

Attitude can be defined as it is a tool that elucidates whether an act is painful or enjoyable, valuable or harmful (Ajzen, 1991, 2005; Schmidt, 2010). Thus, if anybody has a positive attitude towards a specific action, there are high possibilities for the development of positive intention (Akhtar & Das, 2019) and intentions shape the behaviours. Most of the previous studies demonstrated that attitude has a significant influence on intention (Borden, Lee, Serido, & Collins, 2008; Gopi & Ramayah, 2007; Phan & Zhou, 2014; Souiden & Rani, 2015). The risk-taking attitude of individuals might play an essential role in the development of intention to invest in stocks (Renneboog & Spaenjers, 2012; Souiden & Rani, 2015).

Various empirical research studies found a significant positive relationship between risk tolerance and intention towards investment. Behavioural intention is a factor that motivates individuals to involve in particular investment behaviour (Ajzen, 1991; Fishbein & Ajzen, 1977). Grable and Lytton (2003) determined that there is a positive relationship between bond holdings and risk averse attitude. Conversely, Bali et al. (2009) found that those investors, who want long term growth of their capital and larger return on capital, invest in stocks. The risk-taking attitude of individuals motivate them to invest in shares (Akhtar & Das, 2019; Clark-Murphy & Soutar, 2004).

Social influence and investment intention

Most of behavioural finance studies discuss many factors that affect decision-making process of investors, like social influence, social interactions and media. Interactions with peers, friends and family members are important methods for sharing information and ideas (Hong, Kubik, & Stein, 2004). It is documented that social interactions with relatives and friends affect investment decisions and returns (Shive, 2010). Shiller (2015) and Shiller and Pound (1989) concluded that individuals interact with each other to collect information and this information develop investment intention. Abreu and Mendes (2012) and Peress (2003), illustrated that information acquisition positively affect the trading behaviour of individuals. Moreover, Sweeney, Soutar, and Mazzarol (2008) explained that conversation is a method of collecting information and it affects the intentions to perform a particular behaviour.

Academic literature found that individuals generally collect information before selection of any investment (Loibl & Hira, 2011); though, individuals might also use their collected information to evaluate the return of their investments (Tauni, Fang, & Yousaf, 2015). We propose that social influence have an impact on investment intentions.

Islamic religiosity and investment intention

Religion is one of the most influential factors among all social factors that have emotional contact with the life of its believers and it affects intentions and behaviour of individuals (Essoo & Dibb, 2004). Religious commitments and guidelines regulate the behaviour of followers. It can help in the selection of numerous products that use in daily life such as household, business, medicinal and fashion related products (Essoo & Dibb, 2004). In all of the Muslim countries, religious obligations have a profound impact on the behaviour of the public (McCullough & Willoughby, 2009). Quranic verdicts deal with what is allowed (Halal) and what is not allowed (Haram) are the principal law and governing forces for the attitudes and behaviours of followers.

According to teaching of Islam, all forms of interest is forbidden. However, investment in shares is allowed in the relevant literature of Islam (Alamer, Salamon, Qureshi, & Rasli, 2015). (Vogel & Hayes, 1998) stated that Muslim investors have comparatively few acceptable investments contracts as compare to conventional investors. Therefore, Islamic religiosity develops the intention of Muslim investors to invest in stocks and it also affects the behaviour of Muslim investors.

Moderating Role of Financial literacy

Financial literacy can be demonstrated as skills and knowledge that are required to collect financial data and make a financial analysis of investment (Xia, Wang, & Li, 2014). The literature revealed that rational financial behaviour depends on the levels of financial literacy (Lusardi, Michaud, & Mitchell, 2017). Confidence of investors at the time of decision making and accuracy of financial decisions also depend on financial literacy (Chu, Wang, Xiao, & Zhang, 2017).

According to Klapper, Lusardi, and Van Oudheusden (2015), financial knowledge is vital in the modern era when there are varieties of complex financial products in financial markets. Literature observed that financially illiterate investors faced terrible results like ending up with higher debts on the high rate of (Klapper et al., 2015; Sivaramakrishnan et al., 2017), very less saving while more borrowing (Jappelli & Padula, 2013). In contrast, financially educated people have better financial management skills (Lusardi & Mitchell, 2014) . These individuals diversify risk through distribution their investment in different financial assets (Al-Tamimi & Kalli, 2009).

Financial literacy might also positively affect the financial attitude of individuals (Mouna & Anis, 2015). However, there are a few studies illuminating the association between financial literacy and investment decision making (Chu et al., 2017).

Therefore, this study incorporated financial literacy in research framework along with the basic element of TPB to study the investment behaviour of individual investors. Thus, financial literacy moderates the relationship between investment intention and trading behaviour.

Research Model

The research model for this study is presented in Figure 1. This model is based on the theory of planned behaviour (TPB). This theory explains how different factors affect the intention and behaviour of human.

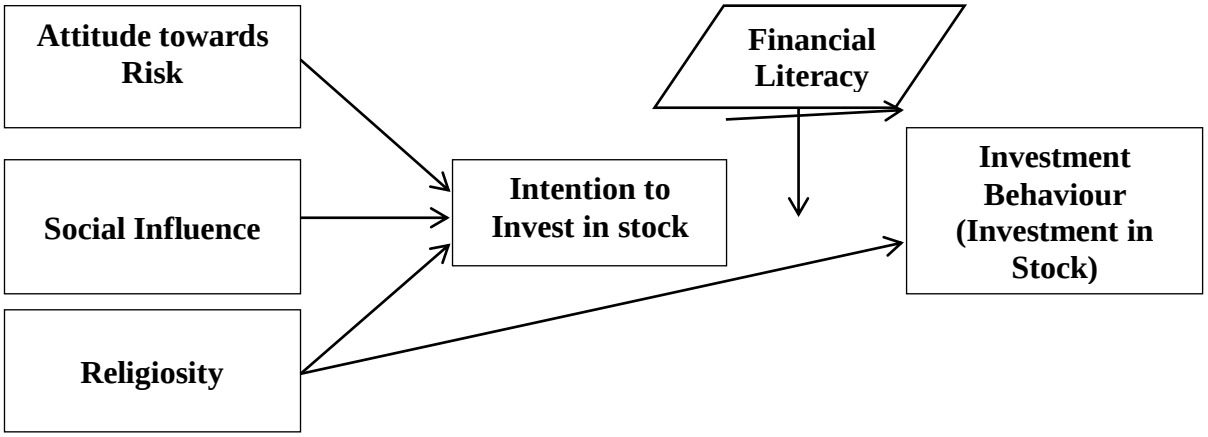

Fig.1:Theoretical Framework

Methodology

The primary objective of this research is to examine that how attitude toward risk, social influence and religiosity affect investment behaviour in stock exchange market. Moreover, study aims to examine the mediating and moderating role of intension to investment and financial literacy in investment behaviour. Therefore, this study utilized quantitative approach to realize the objective of this study. The data has been collected through questionnaire by employing self-administrative survey approach from a selected sample of investors in Lahore stock exchange market.

Description of Sample

Sampling is a strategy in research that helps to choose the sample from the population for investigation. Generally, probability and non-probability sampling techniques are used to draw a sample from population; if population is known then probability sampling is appropriate while non-probability sampling is appropriate when the population is unknown. This study utilized convenience sampling to select the sample from the unknown population. The study has collected the data from stock market investors who have at least 1-year experience of investment in stock market because one year's minimum experience ensures that respondent has a clear understanding of factors that affect investment behaviour of individual investors in Stock market. Data was collected from investors at different times of the day, over the period of three weeks to avoid sampling biasness. In order to get appropriate information; the objective of the study has been explained to investors whom we approached. A total of 250 respondents were approached to get information. Sample size of this study has been selected on the bases of criteria highlighted by Peng and Lai (2012) for SEM models; which indicates that appropriate sample is 10 time greater than number the number of indicators.

Instrument

This study utilized five multidimensional constructs like attitude toward risk, social influence, and religiosity, intensions to invest in stock and investment behaviour in stock exchange market. Attitude toward risk was measured with the help of five indicators that were adapted from Zhou, Su, and Bao (2002) and Chen (2007). Social influence has four factors adapted by (Shanmugham & Ramya, 2012), (Abreu & Mendes, 2012) and five indicators of religiosity were adapted by Shukor and Jamal (2013). Similarly, five indicators of intensions to invest in stocks has been adapted from (Chen, 2007) and financial literacy has been measured by ten indicators that were adapted from Rooij, Lusardi, and Alessie (2011). A five-point Likert scale (5 = strongly agree, 1 = strongly disagree) was used to measure the employed items of five multidimensional constructs like attitude toward risk, social influence, religiosity, intensions to invest in stock and investment behaviour in stock. Financial literacy has been measured on Yes or No response rate and at the end the score of ten indicators has been added to get score of financial literacy and treated this variable as scale (numerical) variable.

Analytical Methods

This study utilized Partial Least Squares structural equation modelling method (PLS-SEM) to test modelled hypothesis (Wong, 2013). PLS-SEM has the ability to model latent constructs and produce best unbiased path coefficient even under the conditions of non-normality and small to medium sample sizes. Moreover, smart PLS is more popular for marketing research but its importance is established in finance research particularly within the last decade (Ali & Omar, 2014; Sarstedt, Ringle, Smith, Reams, & Hair Jr, 2014). In addition, the PLS analysis consist on two steps; first PLS algorithm and second is bootstrap (F. Hair Jr, Sarstedt, Hopkins, & G. Kuppelwieser, 2014). The PLS algorithm procedure is efficient in producing, factor loadings, weights, and path

coefficients while bootstrapping technique (5000 resample) produced p value and T value to take decision about acceptance or rejection of proposed hypothesis. PLS algorithm is famous to establish validity and reliability of the constructs while bootstrap well known for hypothesis testing (Anderson & Gerbing, 1988).

RESULTS AND INTERPRETATIONS

Table 1 depicts the demographic profile of the respondents.

Gender: 68% of the respondents are male while 32% are female.

Age: 16% of respondents have age up to 30 years and 38% belong to 31-45 years' category while 46% are above 45 years.

Education: Majority of the respondents were having bachelor degree with a percentage of 62% while 21% possess master degree and 16% are M.Phil.

Income: 8% of respondents have Rs 30000-40000 while 50% have Rs 41000-50000 and 25.6% belongs to Rs 51000-60000Rs category. However, only 16% have above Rs 60000 plus income level.

Location: 70.4% of respondents belong to Lahore while 29.6% belong to other cities of Punjab.

Table 1. Demographic Profile

Variables	Categories	Frequency	%
Gender	Male Female	170 80	68% 32%
Age	Up to 30 31-45 Above 45	40 95 115	16% 38% 46%
Education	Graduation Master M. Phil	157 53 40	62% 21% 16%
Income	30000-40000 41000-50000 51000-60000 Above 60000	20 126 64 40	8% 50.4% 25.6% 16%
Location	Lahore others	176 74	70.4% 29.6%

Path Model

In Path diagram; measurement model indicates relationship among construct and indicator while SEM reflects relationship among constructs. Constructs are in oval while indicators are in square.

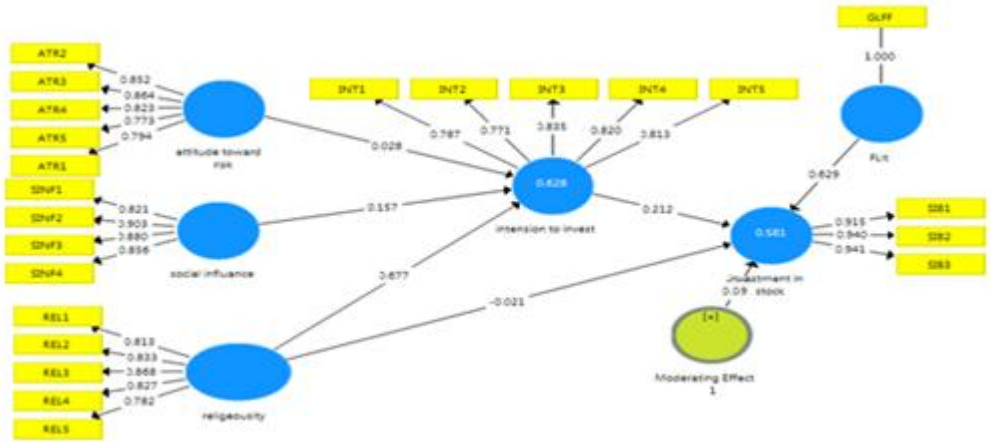

Fig.1:Measurement Model

Factor Loadings

Indicators	ATRR	INTT	RELL	SIBB	SINFF
ATR1	0.796				
ATR2	0.849				
ATR3	0.866				
ATR4	0.824				
ATR5	0.771				
INT1		0.787			
INT2		0.771			
INT3		0.835			
INT4		0.82			
INT5		0.813			
REL1			0.813		
REL2			0.833		
REL3			0.868		
REL4			0.827		
REL5			0.782		
SIB1				0.915	
SIB2				0.939	
SIB3				0.941	
SINF1					0.814
SINF2					0.903
SINF3					0.882
SINF4					0.86

Reliability, Convergent and Discriminant Validity

This study has utilized five latent variables named as a like attitude toward risk, social influence, religiosity, intentions to invest in stock and investment behaviour in stock. Result in table 2 indicates that all indicators have high loading towards their respective latent variables because all of these items possess higher factor loading than 0.70 which is recommended threshold value for acceptable factor loadings (Hair, Black, Babin, Anderson, & Tatham, 2010). Moreover, the study needs to address the problems of reliability and validity of the construct. Reliability of the construct ensures that construct will produce consistent results when it will be used in a different context. Similarly, validity ensures that construct is measuring for what it has been devised to measure. Therefore, Cronbach alpha, rho_A, composite reliability (CR), average variance explained (AVE), and correlations have been employed to ensure reliability, convergent and discriminant validity. The value of Cronbach's Alpha for all five constructs is above .7 which ensures that constructs are highly reliable. Similarly, all values of AVE are greater than .50 which ensures that constructs possess the convergent validity (Henseler et al., 2014). Similarly, high correlation values at diagonals also reflect that constructs own the discriminant validity.

Table 3. Reliability, Convergent and Discriminant Validity

	Cronbach's Alpha	rho_A	CR	AVE	ATRR	INTT	RELL	SIBB	SINFF
ATRR	0.88	0.882	0.912	0.676	0.822				
INTT	0.865	0.866	0.902	0.649	0.554	0.806			
RELL	0.883	0.885	0.914	0.681	0.622	0.779	0.825		
SIBB	0.924	0.924	0.952	0.868	0.459	0.569	0.486	0.932	

SINFF	0.888	0.894	0.923	0.749	0.663	0.541	0.54	0.435	0.865

SEM model has been estimated with the help partial least square method and results are reported in table 4 and 5.

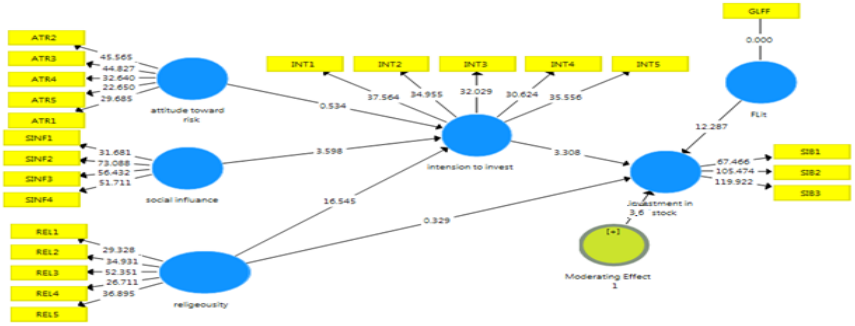

Fig.2: Structure Equation Model

Table 4. Structural Equation Model 1 (Direct Hypothesis)

Hypothesis	β	S.D	T Value	P Values
Financial Literacy -> investment in stock	0.629	0.051	12.287	0
Financial literacy * intension to invest-> investment in stock	0.090	0.025	3.6	0.001
Attitude toward risk -> intension to invest	0.028	0.053	0.534	0.594
Intension to invest -> investment in stock	0.212	0.064	3.308	0.001
Religiosity -> intension to invest	0.677	0.041	16.545	0
Religiosity -> investment in stock	-0.021	0.064	0.329	0.742
Social influence -> intension to invest	0.157	0.044	3.598	0
R. Square	0.581			
Adjusted R. Square	0.575			

Results indicates that intension of investment significantly and positively affect investment in stock market (β=.212 ρ = .001) and religiosity and social influence significantly and positively affect intensions to invest (β=.677 ρ = .000, β=.157 ρ = .000); while attitude toward risk has insignificant effect on intensions to invest. Moreover, financial literacy has positive and significant association with investment in stock and also paly significant moderating role between intension to investment and investment in stock (β=.629 ρ = .000, β=.090 ρ = .001).

Table 5. Structural Equation Model 2 (Indirect Hypothesis)

Hypothesis	B	S.D	T Value	P Values
attitude toward risk -> intension to invest -> investment in stock	0.006	0.012	0.481	0.631
religiosity -> intension to invest -> investment in stock	0.144	0.045	3.188	0.002
social influence -> intension to invest -> investment in stock	0.033	0.012	2.777	0.006

Results of indirect hypothesis indicates that intensions to investment significantly mediates between religiosity and investment in stock (β=.144 ρ = .002). Similarly intensions to investment significantly mediates between social influence and investment in stock (β=.033 ρ = .006). However, intensions to investment doesn't significantly mediates between attitude toward investment and investment in stock (β=0.006 ρ = .631).

Table 6. Model fit Indices

Fit indices with threshold criteria	Saturated Model	Estimated Model
SRMR<.08	0.067	0.07

Chi-Square >.05	1,201.16	1,180.50
NFI > .90	0.898	0.901

The results of model fit indices reflects that all desired fit indices meet the threshold criteria

DISCUSSION

The study aimed to ascertain the elements that contribute to the investment behaviour of individual stock market investors by using the theory of planned behaviour. The results of this study revealed that attitude has an insignificant relationship with investment intention, which shows that individual investors are not affected by their attitudes at the time of making investment decisions (Gopi & Ramayah, 2007). These results are in line with the studies of (Akhtar & Das, 2019; Vlaev, Chater, & Stewart, 2007). This study also has been examined that social influence significantly affects investment intentions. These findings are consistent with the previous studies of Hong et al. (2004) and Shanmugham and Ramya (2012), who has revealed that social pressure is among from those factors that influence the investment behaviour of individual investors. The findings of this study also have shown that religiosity clearly influence investment intention and investment behaviour of individual investors, because religion is among those powerful factors that develop human behaviour (Essoo & Dibb, 2004; Sham & Yusof, 2015). These findings are inconsistency with Tahir and Brimble (2011). Moreover, it was found that the relationship between social influence and investment behaviour was mediated by investment intention. Furthermore, the relationship between religiosity and investment behaviour was mediated by investment intention. Besides, this study also tested the moderating role of financial literacy in the relationship between investment intentions and investment behaviour to invest in a stock. The findings clearly demonstrate that the influence of investment intention on investment behaviour can be better explained if we use financial literacy as a moderating variable. This result enhances the previous study of Wang (2009), who had illustrated the role of financial knowledge in investment decisions. These results are in line with the studies who demonstrated that financial knowledge plays a major role in shaping the financial behaviour of an individual (Akhtar & Das, 2019; Al-Tamimi & Kalli, 2009; Sabir et al., 2019).

CONCLUSION

This study has contributed to a better understanding of what factors contribute to shaping the investment behaviour of individual investors. This study has indicated that social influence and religiosity influence on investment intention and investment behaviour to invest in a stock. This study also indicates that financial literacy moderates the relationship of investment intention and investment behaviour of individual investors of the stock market. This study fills the gap that was present in previous studies regarding the role of religiosity in investment behaviour and the moderating role of financial literacy. This study clearly indicates the role of financial knowledge in the development of investment behaviour to invest in stocks. Although this study extends the existing literature, specifically in a Pakistan context, but it still has a few limitations. First, this paper has only examined the behaviour of an individual to invest in stocks, while previous studies have shown that investors behave differently at the time of buying different financial products like stocks, bonds, derivatives, etc., which may limit the generalisation of the results of this study. Second, this research used cross-sectional data, future studies may use a panel structure data set for more useful in shedding light on the process of shaping the investment behaviour of investors. Third, this study assumes in testing the model that the latent variables have linear relationships. Lastly, the study has been conducted only on one country's individual investors, Pakistan. Generalising of results on other regions may limit. Future research should be used different populations, like institutional investors, and may use psychological factors, like overconfidence, self-attribution and illusion of control.

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