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Perceived Risk and Theory of Planned Behaviour

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ABSTRACTS

The purpose of this paper is to determine the investment intentions of individual investors using social psychological perspective. This research incorporates perceived risk as an additional variable (attitude) in the existing theory of planned behaviour (TPB) framework. Given the nature of this study, a quantitative approach with cross-sectional survey has been used in order to furnish some empirical evidence on investment intentions of individual investors. Where data from 548 potential investors was collected using a simple random technique and respondents were asked on their perceived risk, subjective norms and perceived behavioural control aspects with the help of well-established scales. The collected data was analysed using structural equation modelling technique with the help of SmartPLS 3.2.7. Perceived risk has a negative influence on the investment intentions of individual investors. On the other hand, subjective norm and perceived behavioural control have a positive influence on the investment intentions of individual investors. The current research is first of its kind which includes perceived risk is used as an attitudinal factor to test in the theory of planned behaviour. This study further confirmed that not only perceived risk but the subjective norm and perceived behavioural control influence the investment intentions of individual investors.

INTRODUCTION

Individuals make an investment in the stock market through various available investment instruments that include stocks, bonds, commodities, real estate and different types of derivative instruments that vary depending on their risks and their corresponding expected returns. Investors examine the risks, returns and the trade-off of any investment before investing. Wide ranges of investment avenues are available for the investors (Sachse, Jungermann & Belting 2012). Investors can choose investment opportunities from a large range of options that suit their preferences (Lim 2013). The wide range of available investment options make investment decision more complex that involves different risks, return profiles and complexity levels. In understanding the complex decision-making, the risk is a crucial and important aspect in finance and investment theory (Lim 2013). Although the association between risks and behaviour is comprehensively researched. Researchers like Lim, Soutar and Lee (2013); Lim (2013) assert that the association between risks and decision-making remains insignificant and needs further consideration. Risk perception refers to financial risks as perceived by consumers and investment decision-making is affected by the investor's behaviour and perception of the risk (Sindhu & Rajitha 2014). Likewise, Dai, Forsythe, and Kwon (2014) argue that increased risk decreases the value of purchase intention. This demonstrates a negative relationship between risk and purchase intention.

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The stock market plays a very critical role in the economic development of any country and considered as a reflection of the economy. There is ample evidence of the link between the activities of the stock exchange and that of the economy (Barro 1990; Fama 1990; Fischer & Merton 1984; Mullin & Wadhwani 1989; Schwert 1990). These evidence strengthen the role of stock market performance and the overall prosperity of the economy.

In recent years, it has been observed that individual investors' participation in the stock market has been declined. Low investment in the stock market is a great concern raised by the securities exchange commission and stockbrokers in Pakistan. The evidence of less stock market participation by individual investors has led the Securities Exchange Commission Pakistan to announce various awareness sessions for individual investors with the aim to guide these individual investors about stock investment and to increase their involvement in the stock market.

In Pakistan, equity is not considered a lucrative investment. The possible reason for low participation as described by past researchers is the perceived risk related to stock market investment. For example, in stock investment risk is perceived to be very high, thus leading to a higher probability of financial loss (Farrukh 2010). Moreover, perceived risk tends to reduce the investment intention of individual investors.

In addition to perceived risk, the social psychological factors also reported as significant determinants of investment intentions of individual factors. Numerous studies on perceived behavioural control (PBC) from different perspectives have empirically endorsed that PBC has a positive influence on intention (Lin 2010; Raut, Das & Kumar 2018; Warsame & Ireri 2016). Among others, Akhtar and Das (2018) report a significant influence of subjective norms on individuals' intention to invest. Furthermore, Sharma and Gupta (2011) also support a significant impact of subjective norms on behavioural intention to buy shares.

By keeping in mind the past literature, the applicability of the Theory of Planned Behaviour (TPB) in measuring intention has been widely supported. TPB provides strong theoretical foundations to predict behavioural intentions of individuals. As above-cited literature highlights that application of psychological in determining decision making is emerging subject and behavioural finance research paid very less attention to this perspective. In line with the literature, this research applied TPB in capital market context and adds perceived risk as an additional variable that represents the attitude and hoped to add a further explanation in investment intention of individual investors. Thus, the current research examines the influence of attitude (perceived risk), subjective norm and perceived behavioural control on investment intention of individual investors.

THEORETICAL FRAMEWORK AND HYPOTHESES

Investment Intentions

Individuals, over a period, increase their income by investing in various financial products available in the financial market as a rational income-generating source (Blanchett & Ratner 2015). Duclos, Wan and Jiang (2012) further argue that financial decisions are very crucial decisions, considering the outcomes, either it is positive or negative, could have an imperative effect on the financial condition of the individual.

Many factors affect individual investors' decision to invest their savings, including their psychological factors (Croy, Gerrans & Speelman 2012). Moreover, the decision-making of investors depends firstly on the basic financial rules that are based on the risk-return consideration and investment strategies; secondly, the investors are rational in predicting future stock returns. The true nature of investors' decisions might not be the same rather depends on attitude and investment characteristics of individuals (Shefrin 2015).

Across the financial market, investors do not act rationally; rather, their investment decisions are under the influence of social affiliation, psychological biases and demographic factors (Hirshleifer 2015; Mouna & Jarboui 2015; Sahban 2016; Sharma & Gupta 2011). The

current research intends to investigate the investment intention of investors from social psychological perspectives. The review of relevant studies has paid limited attention to the investment intentions of individual investors from social psychological perspectives. The current research fills the identified gap by investigating the investment intention from social psychological perspectives by using subjective norms, perceived behavioural control and perceived risk as an additional variable representing the investor's attitude.

Perceived Risk and Investment Intentions

According to Dowling and Staelin (1994), perceived risk is the possibility of uncertainty or unfavourable consequences perceived by consumers while deciding to purchase products or services. Goyal (2008) mentions that perceived risks influence consumers' decisions to purchase. Furthermore, Goyal (2008) point out that consumers perceived less risk while purchasing sophisticated products that contain high value and perceived risk.

In line with above Farrukh (2010) argues that the major reason for a lower proportion of stockholding is the perception of stocks as an extremely risky investment. In such condition, individual investors demonstrate risk-averse behaviour and reduce their tendency to invest in the stock market. Ton and Dao (2014) support that perceived risk acts as an important factor that determines the investment intention of the investors. Moreover, Cuong and Jian (2014) reveal that perceived risk negatively affects individual investors' attitude, which in turn, affects their behavioural intention. It is reasonable to anticipate that the expectations of investors are less table when they perceived a high level of risk. This indicates that a high level of perceived risk may lead to unstable feelings among investors and lower their willingness to invest in the stock market.

Huy Tuu, Ottar Olsen and Thi Thuy Linh (2011) assert that attitude towards risk by an individual is very prevalent. Individuals have a high level of perceived risk that makes them conscious while investing in risky decisions. Furthermore, Mayfield, Perdue and Wooten (2008) reported that perceived risk serves as an important factor in such as stock investment. Based on the above-cited literature, it can be argued that perceived risk is significant in forming intentions of individual investors to invest in the stock market. The following hypothesis has been formulated based on literature review and discussion.

H1: Perceived risk will have a significant negative influence on investment intention of individual investors.

Subjective Norm and Investment Intentions

Subjective norm is the most influential determinant that affects an individual's intention to perform a behaviour. Individuals are affected by the subjective norms that are imposed upon them by their peers or groups in the social circle (Sahban, Kumar & Ramalu 2014). The individuals then feel the need to comply with the subjective norms that are imposed by the social group. Croy, Gerrans and Spelman (2012); Raut, Das and Kumar (2018) assert that an individual's behaviour can be significantly influenced at the initial stage, considering that individuals are still developing their attitude toward the behaviour at that early stage.

Akhtar and Das (2018) reports that many studies have applied the TPB in the context of finance and investment; however, these studies have focused mainly on people who are closely related to the behaviour of the investment itself. Akhtar and Das (2018) also mention that subjective norms influence individuals' intention to invest. Furthermore, Sharma and Gupta (2011) suggest a significant impact of subjective norms on the behavioural intention to buy shares. Thus, it can be argued that there is some perceived public pressure to invest, and subjective norms support the intention to invest in the stock market. Based on the above-cited literature and discussion it can be asserted that subjective norms significantly influence the investment intentions of individual investors. The following hypothesis has been formulated:

H2: Subjective norms will have a significant positive influence on investment intention of individual investors.

Perceived Behavioural Control and Investment Intentions

Perceived behavioural control (PBC) in this study refers to the ability of individual investors to have control over investing in the stock market. Armitage and Conner (2001) described that in many studies, PBC has improved the forecasting of behavioural intentions of individuals. PBC refers to the level of perception of an individual towards the ability to perform a behaviour (Fishbein & Ajzen 2011). TPB argues that an individual's positive attitude towards an intention does not necessarily ensure that the behaviour will be performed, especially when the ability to perform the behaviour is non-existent. PBC is a basic element of the TPB in explaining behaviour which has been claimed in multiple studies (Mahastanti & Hariady 2014).

Hamid (2014) explains that judgment of individual is reflected by the element of PBC which is their ability to perform a certain behaviour. When a person considers his ability to perform a behaviour, PBC is the main key answer to that person. PBC is the desired motivation that determines the performance of particular behaviour. It is believed that a person with strong PBC will perform that required behaviour.

Cuong and Jian (2014) find a significant positive relationship between PBC and behavioural intentions. Similarly, regarding the investment in the stock market, PBC should also be positively related to willingness and intention to invest in the stock market. In light of the above, it can be asserted that PBC is the ability of individuals to have control over performing a particular task, which is investment intention of investors to invest in the stock market in the current research. Based on the above literature and discussion following hypothesis has been formulated.

H3: Perceived Behavioural control will have a significant positive influence on investment intention of individual investors.

On the basis of above-cited literature, following research framework is proposed to assess hypothesised relationships. In Figure 2, perceived risk is proposed to have a negative relationship with investment intentions, while subjective norm and perceived behavioural control is proposed to have a positive relationship with investment intentions.

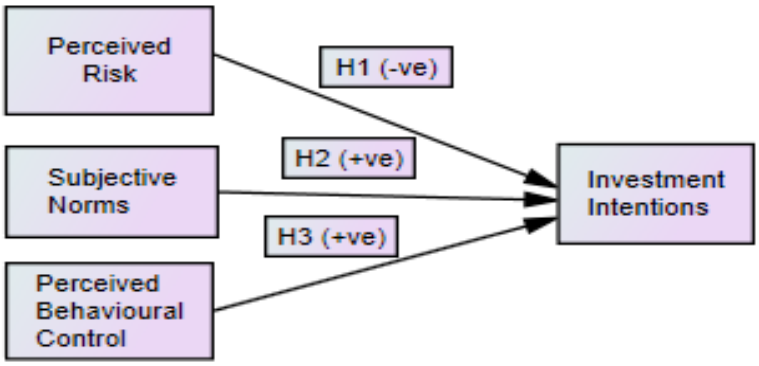

Figure 1- Proposed Research Framework

RESEARCH METHOD

As the study aims to assess the significant determinant of investment intentions of individual investors from a social-psychological perspective, a quantitative research methodology is employed by collecting data from 548 individual investors with a simple random sampling procedure.

The measurement scales were chosen carefully from the related literature. The intention scale consists of 7 items adapted from Lim (2013); Allen, Gupta and Monnier (2008), subjective norm measurement with 5 items was adapted from Schmidt (2011); Tai and Ku

(2013), while perceived behavioural control scale with 6 items was adapted from Mahastanti and Hariady (2014); Pascual-Ezama et al. (2014); Schmidt (2011). Moreover, the measurement of perceived risk with 8 items was adapted from Lim (2013); Ali and Tariq (2013) as shown in Table 1.

Table 1. Measurement Scales

Instruments	Items	Source
Perceived Risk	08	Lim et al. (2013); Ali and Tariq (2013)
Subjective Norms	05	Schmidt (2011); Tai and Ku (2013)
Perceived Behavioural Control	08	Mahastanti and Hariady (2014); Pascual-Ezama et al. (2014); Schmidt (2011).
Investment Intentions	07	Lim (2013); Allen, Gupta and Monnier (2008)

DATA ANALYSIS AND DISCUSSION

The descriptive analysis of respondents' demographics showed that there were 65% male and 33% female respondents. Most of the respondents belong to age group 25-35 years and have an average income Rs.25000- Rs.50,000 as given in Table 2.

The analysis was performed by using the partial least square method with the help of SmartPLS 3.2.7. The two-step approached given by Henseler, Ringle and Sinkovics (2009) has been adopted to ensure that analysis performed provide reliable and valid results. The first step ensures model reliability and validity and the second step used a structural model to test the proposed hypotheses.

It is important to assess the individual item reliability, along with internal consistency, content validity, convergent and discriminant validity during measurement model assessment (Henseler, Ringle & Sinkovics 2009; Hair et al. 2010; Hair et al. 2014). The current research followed the suggested procedure to assess the measurement model. Next section provides detailed measurement model assessment and interpretation.

Table2. Demographic Information

Demographic Factors	Components	Frequency	Percentage
Gender	Male	357	65.1
	Female	181	33.0
	Missing	10	1.8
	Total	548	100
Age	Less than 25 years	155	28.3
	25-35 years	284	51.8
	36-45 years	55	10.0
	46-55 years	29	5.3
	56 years or above	13	2.4
	Missing	12	2.2
	Total	548	100
Income	Below Rs. 25,000	117	21.4
	Rs. 25000- Rs. 50,000	174	31.5
	Rs. 51000- Rs.	117	21.4

	75,000		
	Rs. 76,000- Rs. 100,000	82	15.0
	Rs. 101,000 and Above	40	7.3
		18	3.3
	Missing	548	100
	Total		

Measurement Model

Individual items reliability can be assessed through the outer loadings of each measurement items of each construct (Duarte & Raposo 2010; Hulland 1999; Hair et al. 2014; Hair et al. 2012). Hair et al. (2014) provide a rule of thumb to retain the items of constructs if the outer loading ranges between 0.40-0.70. The current research retained items based on the above threshold to maintain an acceptable level of reliability of the items. In the measurement model assessment, out of 26 items 6 were deleted (PR3, PR6, PR8, II1, II6, II7) based on lower factor loadings. In this study, 20 items were retained with acceptable factor loadings ranges from 0.643 to 0.924. The measurement model results (factor loadings, AVE, and CR) given in Table 3 and shown in Figure 2.

Internal Consistency Reliability

The internal consistency of items is the ability to measure the same concept it is supposed to measure (Bijttebier, Delva & Vanoost 2000; Sun et al. 2007). The most widely used estimators of internal consistency of a scale are Cronbach's Alpha and composite reliability coefficient (e.g., Bacon, Sauer & Young 1995; McCrae et al. 2011; Peterson & Kim 2013). Bagozzi and Yi (1988); Hair et al. (2011) furnish the rule of thumb for an acceptable range of composite reliability coefficient and interpretation as per calculated values. The baseline provided is the value of focal constructs should be 0.70 or above to ensure reliability and internal consistency. The composite reliability for investment intentions (0.925), perceived behavioural control (0.888), subjective norm (0.868) and perceived risk (0.851). The results reflect acceptable internal consistency and reliability of measures.

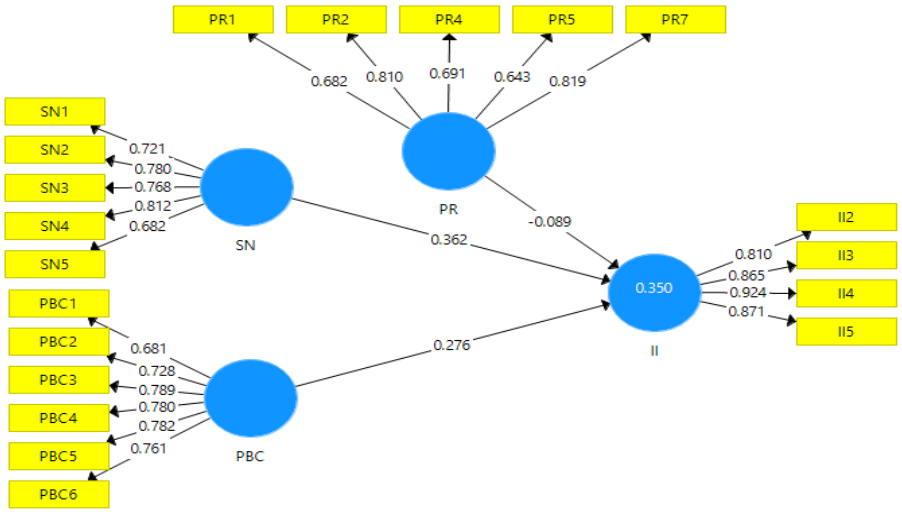

Figure 2- Measurement Model

Table 3- Measurement Model

Construct	Factor loadings	AVE	CR

Investment Intentions			
II2	0.810	0.754	0.925
II3	0.865		
II4	0.924		
II5	0.871		
Perceived Behavioural Control			
PBC3	0.789	0.569	0.888
PBC5	0.782		
PBC4	0.780		
PBC6	0.761		
PBC2	0.728		
PBC1	0.681		
Perceived Risk			
PR1	0.682		
PR2	0.810	0.536	0.851
PR4	0.691		
PR5	0.643		
PR7	0.819		
Subjective Norm			
SN1	0.721	0.569	0.868
SN2	0.780		
SN3	0.768		
SN4	0.812		
SN5	0.682		

Discriminant Validity

Discriminant validity is the extent to which a specific latent construct is different from other latent constructs (Duarte & Raposo 2010). In this regards, Fornell and Larcker (1981) gives a criterion for measuring validity where AVE with 0.5 or higher value indicated an acceptable level of validity. To measure discriminant validity, the value of the square root of AVE should be greater than the correlation among latent variables. This study also follows Fornell and Larcker (1981) criteria and results in Table 4 indicates an adequate level of discriminant validity.

Table 4- Discriminant Validit

	II	**PBC**	**PR**	**SN**
II	**0.869**			
PBC	0.520	**0.754**		
PR	-0.096	-0.040	**0.732**	
SN	0.544	0.664	0.013	**0.754**

Results And Discussion

This section discusses the results of the current research and discussion based on past literature. After satisfactory results of the measurement model, hypotheses testing was conducted using a structural model with bootstrapping of 1400. The analysis as in Figure 3 indicates that focal constructs used were able to explain 34.6% of the changes in investment intentions of individual investors.

Hair, Ringle and Sarstedt (2013) recommend that the value of Q2 should be used to assess the predictive relevance, as Q2 is the effective criteria to assess the predictive relevance

as evident from past literature, for instance, Stone (1974); Geisser (1975); Fornell and Cha (1994); Chin 2010. In the blindfolding procedure, Q2 is reliable in evaluating predictive relevance of a complex model. Blindfolding procedure omits data for a given block of indicators and predicts the omitted part based on the calculated parameters (Hair, Ringle & Sarstedt 2013). This procedure ensures the predictive relevance of the estimated model. As the Q2 value of 0.246 for investment intention is larger than 0 as per the criterion of Fornell and Larcker (1981), the model can be considered to have sufficient predictive power.

The result shows that perceived risk has a significant negative impact on investment intentions of individual investors (H1; β=-0.096, p<0.05) and supports hypothesis H1. Previous literature also supports the result of current research, for example, Ton and Dao (2014); Cuong and Jian (2014) found that perceived risk negatively affected individual investors' behavioural intention.

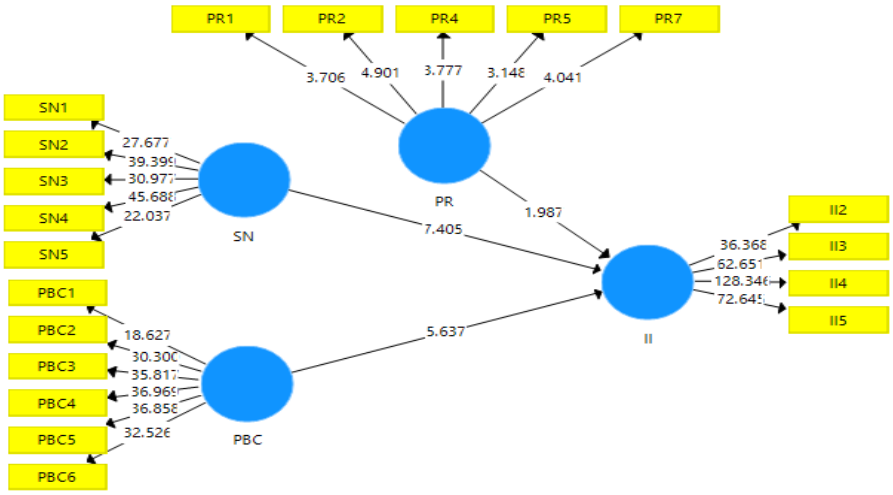

Figure 3- Measurement Structural Model

While subjective norms (H2; β=0.361, p<0.00) and perceived behavioural control (H3; β=0.278, p<0.00) have a significant positive influence on investment intentions of individual investors and provide support for hypothesis H2 and H3 as shown in Table 5.

The results are in line with the previous research where the subjective norm has been reported as a significant factor to determine intention by Sharma and Gupta (2011). In the review of literature, perceived behavioural control significantly positively influences the intention of individuals. For instance, Hamid (2014); Cuong and Jian (2014) also reported perceived behavioural control as a significant factor that influences the intentions of individual investors.

Table 5- Hypothesis Testing

Hypothesis	Relationship	Beta	S.E	T	P	Decision
H1	PR → *II*	-0.096	0.045	1.987	0.047	Supported
H2	SN → *II*	0.361	0.049	7.405	0.000	Supported
H3	*PBC* →*II*	0.278	0.049	5.637	0.000	Supported

The findings suggest that perceived risk, subjective norms and perceived behavioural control are significant factors that impact on investment intention. It is recommended that the

brokerage firms and stock exchange commission may provide some risk-adjusted investment options to individual investors and provide them with awareness to increase their perceived behavioural control over investment in the stock market. In addition, friends, family and important people around can be used as a source to promote stock investment and to increase the level of investment intentions.

CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

Based on the findings of the current research it can be concluded that subjective norms and perceived behavioural control serves as significant factors and in addition perceived risk also appears as significant attitudinal factor that determine the intentions of individual investors to invest in the stock market. This study succesfuly extened theory of planned behaviour by adding attitudinal factor which is perceived risk. Based on the collected, perceived risk appears to be signifiant attitudanl factor in theory of planned behaviour. Futhermore, it is suggested that in order to assess the intention of individual investors, along with subjective norms and perceived behavioural control, perceived risk should be also considered as important factor.

Apart from the contribution made by current research in the related field, this research also has a few limitations that can be overcome by future researchers. The data for current research was collected from the individual investors from Pakistan the results may be generalised to countries with similar cultural settings. The findings can be expanded by collecting data across countries and countries with similar cultural settings. The current research only examines three factors such as perceived risk, subjective norm and perceived behavioural control, further research can be conducted using other related variables that can add value to the TPB framework and/or by introducing mediating and moderating variable.

The current research used individual investors as respondents and only assess their investment intentions. Further research can collect data from institutional investors or both to extend and compare their intentions. The investment term used in the current research only focused on stock market investment. Further research can be conducted using other investment types such as the capital market for instance investment in bonds, government bill or other related investment options.

Despite the mentioned limitations, the current research offers some important implication for stockbrokers, academicians and researcher in the context of emerging markets, to be more specific Pakistan. It has been found that as investors are irrational from point of view of behavioural finance, they are influenced by the opinion of important people around, their own control over investment and perceived risk. The stock brokerage can develop programs that can reduce the perceived risk of individual investors and create awareness on stock investments. From a promotional point of view, friends and family can be used as a tool to promote the stock investment as the opinion of friends and family important in collective societies like Pakistan. Thus, current research results can be used as a guide to increase investment intentions among individual investors. It is hoped that researchers will extend the current research by including more aspects that will enrich the study of behavioural finance.

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