

PERCEIVED RISK & INTENTION TO INVEST THROUGH ONLINE REAL ESTATE SITES

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ARTICLE INFO	ABSTRACT
Keywords: perceived risk, investing attitude, brand equity, intention to invest, online real estate sites	The research aims to identify how perceived risk tends to affect the intention to invest through online real estate sites. It also tends to identify the mediating role of investing attitude of the investors and their brand equity related to those sites. Survey approach was used to gather and compile all the data, and hypotheses were tested through the structural equation modeling technique. The outcomes revealed a negative role played by economic, functional, time and social risk on the intention of investors to invest through online real estate sites. The five different kinds of perceived risk showed a negative influence on investing attitude and brand equity except for social risk which positively influenced brand equity and investing attitude. Investing attitude and brand equity cause a positive change in investors' intentions to invest. In addition to it, investing attitude and brand equity of online real estate sites significantly mediates the linkage between all types of perceived risk and investors' investment intentions. Online real estate sites can use this model to determine how different investors perceive risk related to real estate sites and in turn work on these factors to increase their intentions for investment which ultimately is the primary basis of actual investment. There have not been many studies related to investment through online real estate sites. Especially in Pakistan, no such study that involved the investors' intentions to invest through online real estate sites had been conducted earlier. Brand Equity of online real estate sites is also a variable which has been studied for the first time in this work with intentions to invest. Thus, this study presents the first confirmation of this model within the online real estate industry.
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1. Introduction

The global economy is benefiting greatly from the rising real estate industry. According to research by Morrison and Phillips the value of commercial real estate transactions worldwide increased to \$873

billion in 2017, with 6% growth in Asia Pacific and 8% growth in European markets (Ullah & Sepasgozar, 2020). The advent of technology in different spheres of life has also influenced the real estate sector and consumers' decision process (Gao, Liu & Chu, 2022).

There are different factors which influence the consumers' investment behavior, attitude and intention towards the real estate sector (Yii, Shein, and Poh Ming, 2020).

Studies show that the demographics of an investor, such as gender, age and qualifications, are positively related to the investment decisions of an investor (Singh et al., 2020). There are a number of behavioral factors, such as herding behavior, over and under reactions, sentiments of investors etc. that have a notable influence on the investing decisions (Gupta et al., 2020). While making an investment decision, an investor comes across a number of biases which may include availability, anchoring, overconfidence and representative bias, and of which hinder investment decisions (Shah et al., 2018). Apart from these, a major element that affects the investment decisions of any investor is risk (Nguyen et al., 2019). The risk appetite of different investors varies depending on different characteristics, attitudes and behaviors, which ultimately affects the way they make investments (Lathif & Aktharsha, 2016). Studies show that women tend to take less risk than men, and also that people are less prone to risk as they get older (Singla & Hiray, 2019). Most of the literature related to investments considers the investments in financial assets. Studies related to real estate investments are much less common in this regard, so the present research paper considers aspect and targets this sector.

The real estate sector in Pakistan is a top growing sector and plays a significant role in the economy of Pakistan. The real estate sector does not rely only on the purchase and sale of lands, but also depends on other sectors, such as the banking sector (Pakistan Property Service, 2021). The sector has observed a shift along with technology when platforms like Zameen.com came into existence. Real estate investment also depends upon a number of factors such as the environment of the real estate which depicts the behavior of real estate investors (Wu & Kou, 2016). There are a number of ways in which an investor can invest in the real estate sector, including investing in real estate mutual funds, investing through real estate agents, constructing and selling homes, etc. Another option is investment through online real estate sites. This is a relatively new phenomenon, and online real estate is still an emerging field in developing countries. This research focuses on the investment intention to invest through online sites such as zameen.com, graana.com etc. Risk analysis is an important factor that tends to affect the

decision making of real estate investors (Ribeiro et al, 2017). Investing in real estate is less risky as compared to investment in financial assets because there are fewer fluctuations in the prices of real estate assets as compared to those of financial assets, such as stock prices etc. This study attempts to determine the influence of perceived risk on intention to invest in real estate through online real estate sites. Perceived risk has been studied by taking into account a number of risk factors including economical, functional, psychological, time and social risk (Lu et al., 2005; Munnukka et al., 2017). Online real estate sites, such as zameen.com, graana.com, realproperty.pk, prop.pk or aarz.pk have recently become very common in Pakistan, and studies related to these had not been carried out before, so this research paper tries to fill this gap. Nevertheless, in the past few years, the brand equity of the aforementioned sites has greatly increased, and we can see in the statistics provided on websites a clear indication that the brands have created an effective market value. For instance, zameen.com is one of the largest online properties selling portals that connects buyers and sellers operating internationally and within Pakistan. The reviews of online property selling websites are also said to be positive, which clearly shows that the brand's value is identifiable and well thought of. Furthermore, it is also considered whether or not this link between perceived risk and intention to invest is intervened by brand equity of online real estate agents and investing attitude of investors. There has been vast marketing literature regarding brand equity (Theurer et al., 2018; Brahmbhatt & Shah, 2017) but, according to our knowledge, a gap exists in the Pakistani context with respect to the brand equity of online real estate sites which needs to be filled, and doing so would make yet another contribution to the literature. The research study begins with the study of previous literature and hypothesis development. It further discusses the methodology used to study different variables and their relationships. Finally, the results are presented and interpreted with some discussions and practical implications at the end.

1.2. Literature Review and Hypotheses Development

Perceived risk is the potential for undesired or negative outcomes that could occur when the consumer makes a purchase or investment etc. (Wang et al., 2019; Lăzăroiu, et al., 2020). Such a possibility of a loss serves as a barrier to decision making in the

eyes of a consumer or investor (Chang & Tseng, 2013). When the consumers are unable to estimate the outcomes of their purchase decision, they perceive higher risk (Pavlou, 2002; Li et al., 2020). Lu et al., (2005) have taken different constituents of perceived risk such as opportunity cost, social risk, physical, time-loss, financial and information risk. Another research used different sub-types of perceived risk while determining the purchase intention of the consumers. The dimensions used included functional, physical, financial, social, time and psychological risk (Beneke et al., 2012). Likewise, this research has taken into account five different types of risk perceived by an investor that include economical risk, functional, psychological, time and social strand of risk, as used in (Munnukka et al., 2017). Economic risk is the uncertainty in the economy, macroeconomic factors or the economic policies that would affect the purchase decision or investment etc. It also involves the financial loss associated with the purchase of the product (Cunningham, 1967). Furthermore, financial risk includes the inflation rate, interest rate etc. (Sobaih & Elshaer, 2023). Functional risk is another type of risk which states that the functioning of the product (or the investment) will not coincide with the expectations (Lu et al., 2005). Psychological risk is risk that the product will be different from what is expected, and thus results in stress, frustration, tension and discomfort etc. (Derbaix, 1983). Time risk is defined as the risk that all the time consumed on buying the product or making purchase decision (or investment in case of this study) will be wasted. Social risk is the risk that the peers or the reference group will be influenced by the purchase decision (Lu et al., 2005).

Perceived risk can be examined through the field of online purchase decisions and the adoption of technology (Hubert et al., 2019). However, intentions to invest in some assets could be similar to the purchase intentions of a consumer. As purchase intention are defined as the intentions of the buyers or individuals to buy a certain product or service (Dodds et al., 1991), likewise intent to invest may be defined as the willingness of the investors to put money in an asset, or in the case of current study, the willingness of the investor to invest through online real estate sites (Schiffman & Kanuk, 2000). Online investments are unique and significant as they are made over the internet. The level at which investors perceive risk influences the decision-making process

regarding investments (Wasiuzzaman et al., 2022; Kabir et al., 2024)

Intention to invest is the level or extent to which an investor is inclined to invest in some asset (Trang & Tho, 2017), i.e. for this study it is a real estate asset. Attitude is a psychological propensity manifested in appraising a given object with some degree of favor or contempt (Eagly & Chaiken, 1993). Another definition says that attitude encompasses a cognitive and neurological predisposition shaped by individual experiences, influencing how one responds to various stimuli and circumstances. It serves as a mental framework that guides and directs an individual's reactions and behaviors toward the environment they encounter (Allport, 1935). Based on these definitions, it could be said that the investing attitude of an investor would be the response of an investor to invest based on certain objects, experiences or perceptions. The attitude would be positive if the investor favors the investment and negative if the investor disfavors it. As quoted by Kumar et al., (2018), the investing attitude of the investor highly depends on the risk appetite of the individuals. The higher the risk appetite, the more positive the investing attitude. Investing attitude actually determines whether investing in a certain asset is considered good, wise and advisable by the investor or not (Munnukka et al., 2017). Brand equity is actually the image of the brand in the mind of the customer based on their experiences or the information they have related to that brand. The experience of the consumers with a certain brand over time adds value to that brand, which shapes brand equity (Keller & Brexendorf, 2019). Whenever the brand equity of a product is positive, a customer is more likely to respond positively to that product and would give priority to that product over another. Brand equity of online real estate sites would be positive if the real estate investors were more willing to invest through online real estate sites than through physical real estate agents. Brand equity depends upon the brand experience of the individual (Feiz & Moradi, 2019); if the individual has a positive experience related to a brand, customer satisfaction increases and the affective commitment of the individual also increases.

1.2.1. Perceived Risk and Intention to invest

Perceived risk has been found to derive from the investment intentions of individuals. Research conducted to study the intentions of consumers to purchase premium private label brands can be quoted

here to hypothesize that risk perception is the determining factor of the intentions of consumers and investors. People often make investments in assets they believe are more profitable, even if they evaluate them to be risky (Huber & Huber, 2019). Functional risk and time risk indicated a statistically significant negative effect on the purchase intentions of the consumers, while financial/economic risk, social risk and psychological risk showed no significant influence (Beneke et al., 2012). Previous studies show that economic risk significantly influences the purchase intent (Oladeji et al., 2023). Moreover, behavioral finance literature suggests that perceived riskiness, driven by the probability of incurring a loss, is a critical factor in investment decisions. This perception can be managed to influence investment behavior (Huber et al., 2019). Another study in India showed that different dimensions of perceived risk have a significant negative influence on the intentions of consumers to purchase a product. The different dimensions studied in the research were financial, functional, physical and psychological (Bhukya, 2015). One study conducted on the multi-dimensional perceived risk model of electric vehicles states that the perceived risk related to electric vehicles is negative, but significantly affects the intentions of individuals to adopt them (Wang et al., 2018). Thus, we can say that the perceived risk would even influence the intentions of investors to invest through online real estate sites (Zhang et al., 2020). The first hypothesis is that Perceived Risk (economic, functional, psychological, time and social) is related to the intent to invest by means of online real estate sites.

H1: Investor's Perceived Risk is related to Intentions to Invest through online real estate sites.

1.2.2. Perceived Risk and Investing Attitude

The relationship of different components of perceived risk, i.e., economic risk, functional risk, psychological risk, time risk and social risk was studied with the investment attitude of the investors. The results showed a significant negative association and influence of economic risk and time risk on the investing attitude of investors (Dogra et al., 2024). Social risk and functional risk tend to depict a positive relationship with the investing attitude. Psychological risk demonstrated an insignificant influence (Munnukka et al., 2017). Perceived risk serves as an important and significant predictor of the attitudes of individuals towards a certain behavior (Wessels & Drennan, 2010). Perceived risk of electric vehicles also

tends to negatively influence the attitudes of individuals towards their intention to purchase (Wang et al., 2018). Attitudes of consumers towards online buying are also affected by the perceived risk (Suki and Suki, 2017; Kumari et al., 2023).

Research on perceived risk and investing attitude in European countries has yielded mixed results. Barasinska et. al. (2009) discovered that women are less inclined to make investments in a volatile financial product, but when they do, they distribute the same portions of their wealth to these assets as men. Lee (2019) highlighted the role of culture in moderating perceived risk and investments. This study examines the influence of risk on individual investors' trading behavior, revealing that the backgrounds of individuals have a more significant impact. Carretta et. al. (2017) emphasized the influence of financial literacy on investment decisions, with lower financial literacy leading to a more negative risk attitude. Schulmerich et. al. (2015) noted a shift in investor focus towards tail risk management and drawdown risk, particularly in the EMEA regions. These studies collectively suggest that gender, culture, financial literacy, and recent crises all play a role in shaping perceived risk and investing attitude in European countries.

Thus, it could be hypothesized that: apparent risk (economic, functional, psychological time and social) is related to the approach of the investor.

H2: Investor's Perceived Risk is related to the Investing Attitude of investors.

1.2.3. Investing Attitude and Intention to Invest through Online Real Estate Sites

Attitudes are generally considered as the predictor of behavioral intentions (Ajzen, 1991). The research shows that as the investing attitude of an investor increases, the investment intentions of the investor are also notably enhanced (Munnukka et al., 2017). Another study conducted to determine the intentions of investors to invest in the stock market found a positive influence of the investing attitude on investment intentions (Ali, 2011). The theory of planned behavior is applied to determine the intentions of investors to invest more in the future, and the results showed that the attitudes of investors significantly influence the investment intentions of the investors (Alleyne & Broome, 2011). A recent study in India proved that attitude is one of the predictors of investment intentions, concluding that it significantly influences the intentions of investors (Akhtar and Das, 2018). Results of another recent study showed that

positive attitudes of investors towards a financial investment increase intentions to invest more in real estate (Lima et al., 2020). Other studies such as (Wang et al., 2018) also show similar results. (Proudlove et al., 2020) also found that approach is the primary element in depicting the intent of individuals (Nadeem et al., 2020). It could, therefore, be expected that the relationship would work out in the real estate sector as well.

H3: Investing Attitude is related to Intention to invest through online real estate sites.

Since the literature depicts that perceived risk tends to be the determinant of investing attitude, while investing attitude predicts the intentions of investors to invest, it can be said that investing attitude intervenes the relationship between perceived risk (economic, functional, psychological, time and social) and intention to invest in online real estate sites.

H4: Investing attitude mediates the relationship between investor's perceived risk and the intentions to invest through online real estate sites.

1.2.4. Perceived Risk and Brand Equity of Online Real Estate Sites

Theoretically and practically speaking, if a customer perceives that the risk in a product is low then the brand equity of that product will increase. Chang and Chen in their research study showed that Green Perceived Risk (the expectation of negative environmental consequences associated with buying behavior) is significantly related to green brand equity (Chang and Chen, 2013). Kurylchuk (2019) and McGough (2021) collectively suggest that the perceived risk and brand equity of online real estate sites in European countries are shaped by a complex interplay of economic, market, and sector-specific factors. Perceived risks, including performance risk, social risk, and psychological risk, negatively impact the consumers' intention to purchase on branded websites (Boshoff et al., 2011). The researcher explored whether retail real estate investors consider e-commerce an investment risk (Kaiser & Freyboote, 2022). The study, however, ignored the different dimensions of perceived risk and only considered overall perceived risk. Although vast literature for different facets of perceived risk and their influence on brand equity is not available, the overall perceived risk is studied in literature. In a comparative study that was conducted in Turkey and Ireland, it was found that

perceived risk is significantly and negatively related to brand equity (Çal & Lambkin, 2017). Another study stated similar results, which pointed to lower levels of perceived risk resulting in higher brand equity (Kirchoff et al., 2019). Similarly, perceived risk is undesirably linked with brand equity when making investment decisions (Washington et al., 2015.) It could, therefore, be hypothesized that the different sub-types of perceived risk would also be associated with brand equity.

Perceived Risk (economic, functional, psychological time and social) is related to brand equity of online real estate sites.

H5: Investor's Perceived Risk is related to the Brand Equity of online real estate sites.

Brand Equity of Online Real Estate Sites & Intention to Invest through Online Real Estate Sites.

According to prior literature, the higher the brand equity of a product, the more inclined the consumer is to purchase that particular product (Coursaris et al., 2016). This means that increased brand equity results in favorable purchase intentions for that particular brand (Slaton et al., 2020). Thus, the same relation applies to investors in the case of their investments; in terms of stock investments, the higher the brand equity of a stock exchange, the greater the intentions of investors to invest in stocks registered in that stock exchange (Çal and Lambkin, 2017). It can therefore be inferred that the relationship exists in the real estate sector as well.

H6: Brand Equity of online real estate sites is related to Intentions to Invest through online real estate sites.

1.2.5. Brand Equity as a Mediator

Although the examination of the moderation or mediation effect is typically conducted on conceptual grounds, a solid theoretical framework should be present as well. Regrettably, this is often lacking, leaving it up to the researcher to decide whether to develop a conceptual model in addition to theoretical testing. In the present study, brand equity was examined within the current market context to understand its role as a mediator between two variables, i.e. perceived risk and intention to invest. Since the available literature, as presented in earlier sections, considers perceived risk to be a predictor of brand equity, which in turn ultimately predicts the intentions of the investors or consumers, it could be conceptualized that:

Brand Equity mediates the connection between

Perceived Risk (economic, functional, psychological, time and social) and Intention to Invest through online real estate sites.

H7: Brand Equity of online real estate sites mediates the relationship between Investor's Perceived Risk and investors' Intentions to Invest through online real estate sites.

The formulated model is shown in Figure 1.

2. Material and methods

The current study used the quantitative approach to study the relationship of risk, i.e., its different facets on brand equity, attitude and intention. The approach used was deductive. For this purpose, closed-ended questionnaires were used for data collection. The population of the study comprised real estate investors in Pakistan. A sample size of 300 was considered large enough, as present studies use the Structural Equation Modeling (SEM) technique.

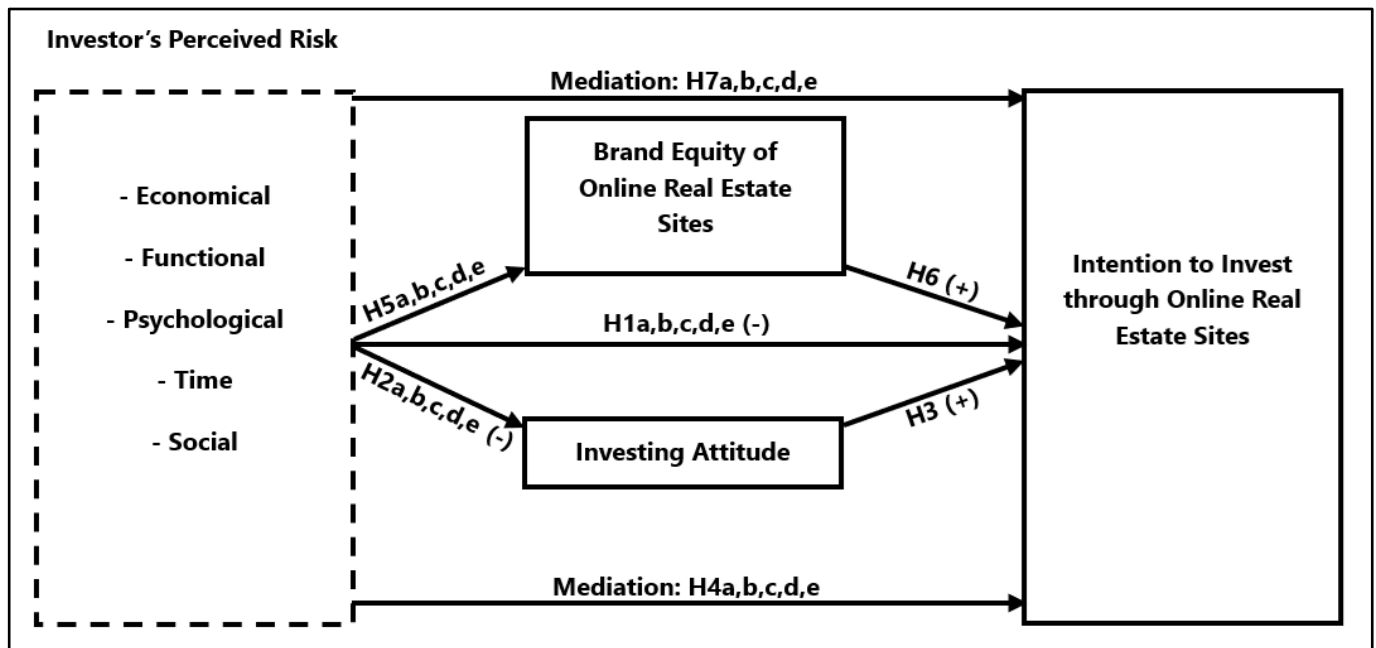


Fig. 1. Theoretical framework. Source: own study.

Table 1

Demographic profile of respondents		
Factors	Aspects	Demographic
Gender	Male	566
	Female	291
Age	30 years & under	158
	31-35 years	215
	36-40 years	209
	41 years & above	275
Qualification	Less than intermediate	115
	Intermediate	215
	Bachelor's	244
	Master's or above	286
Employment Status	Unemployed	33
	Part-time employment	234
	Full-time employment	355
	Self-employment	155
	Retired	80
Real estate investment knowledge	None	16
	Good	265
	Limited	355
	Extensive	221

Last investment worth	< PKR 10 Lacs (\$4500)	196
	PKR 10-15 Lacs ((\$4500-\$6800)	266
	>PKR 15 Lacs (\$6800)	395
Risk Appetite	Risk taker	106
	Risk Neutral	331
	Risk Averse	420

Source: own study.

More than 1000 participants were approached through online questionnaires and physical meetings (manual), with the voluntary responses of 857 collected. Most of the responses were collected through an online questionnaire, though some were distributed and collected by hand. After the collection, the responses were coded, and analysis was conducted through the structural equation modeling technique using Smart PLS 3. The bootstrapping technique with 1000 subsamples is used to measure the hypothesized relationship. The majority of the respondents were male; the demographics of the sample are displayed in Table 1. The table shows the ratio of female respondents to be very low as compared to their male counterparts, because there are significantly fewer female investors in real estate sector in Pakistan. Moreover, investment decisions are mainly done by male members of household. Therefore, female respondents are relatively scarce. The time frame of the research was cross-sectional, and the research was conducted based on that time frame. A pre-developed scale was used for testing all constructs. The instrument for all the five dimensions of perceived risk is taken from the study of Munnukka et al., 2017. The overall brand equity scale was originally taken from (Yoo & Donthu, 2001) and adjusted to cover the overall brand equity of real estate sites, and comprised 4 items. The questionnaire was measured using a five-point Likert scale with 1 depicting "strongly disagree" and 5 depicting "strongly agree". Moreover, demographic variables were used as control variables in the present study.

Age and gender are found to have an impact on investing intention, and therefore both were considered a control variable.

2.1. Measurement Model Assessment

To assure that the used instruments were reliable as well as valid, measurement model analysis was carried out. Table 2 below contains Cronbach alpha, Composite reliability (CR), and Average variance extracted (AVE) values. The Cronbach alpha and CR are measures of reliability. The Cronbach alpha and CR values for all the four instruments are greater than 0.7 as stated in Table 2. A Cronbach alpha value greater than 0.6 is also considered acceptable in exploratory research (Nunnally & Bernstein, 1994). Thus, all the instruments used for the research are considered reliable and internally consistent. Convergent validity measures the degree to which the items or indicators of the constructs used estimate the variable we are attempting to measure; AVE (average variance extracted) is used for this purpose, the threshold value of which must be greater than 0.5 for the instrument to be valid. The AVE value for all the instruments is greater than the minimum threshold (Ave>0.50), so we can say that convergent validity was established.

For discriminant validity, the Heterotrait-Monotrait (HTMT) ratio of correlation was used. Discriminant validity is the extent to which the instruments of different variables are unique and unrelated. Table 3 below contains the results for the HTMT ratio. The acceptance criteria for this test are that the ratio must be less than 0.9 (Henseler, Ringle, & Sarstedt, 2015).

Table 2

Cronbach's alpha, Composite reliability, and Average variance extracted			
Construct	Cronbach α	Composite Reliability	AVE
Economic Risk (ER)	0.672	0.708	0.695
Functional Risk (FR)	0.695	0.862	0.758
Psychological Risk (PR)	0.855	0.908	0.767
Time Risk (TR)	0.892	0.926	0.807
Social Risk (SR)	0.782	0.871	0.695
Investing Attitude (ATT)	0.810	0.887	0.724
Brand equity of online real estate sites (BE)	0.867	0.909	0.716
Intention to invest through online real estate site (INT)	0.825	0.895	0.74

Source: own study.

Table 3

Discriminant Validity (HTMT Ratios)									
	FR	ER	PR	TR	SR	ATT	BE	INT	VIF
FR	1								1.208
ER	0.113	1							1.204
PR	0.207	0.253	1						1.243
TR	0.310	0.179	0.149	1					3.254
SR	0.382	0.204	0.181	0.149	1				2.858
ATT	0.366	0.253	0.163	0.373	0.272	1			1.126
BE	0.369	0.225	0.203	0.323	0.25	0.13	1		1.195
INT	0.563	0.266	0.159	0.454	0.417	0.897	0.818	1	1.126

Abbreviations: ER, Economic Risk; FR, Functional Risk; PR, Psychological Risk; TR, Time Risk; SR, Social Risk, ATT, Investing Attitude, BE, Brand equity, INT, Intention to Invest.

Source: own study.

To measure the collinearity statistics, the Variance Inflation Factor was used. The VIF values for all the constructs are given in Table 3. The values for all the variables are less than the threshold value ($VIF < 5$) indicating that the items are different from one another, and no issue of multi-collinearity exists.

3. Results

The analysis was carried out by running the 1000 bootstrap sub-sample. The direct effect of all the sub-types of perceived risk was seen on the dependent variable. Economic risk, functional risk and social risk indicated a significant impact on the intention of investors to invest through the online real estate sites, at a significance level of 1% ($p < 0.01$) while time risk depicted a significant influence at a 5% level of significance ($p < 0.05$), thus supporting the H1a, b, d, e of the research study. All four types of risk, i.e., Economic risk ($\beta = -0.096$ at $p < 0.01$), Functional risk ($\beta = -0.259$ at $p < 0.01$), Time risk ($\beta = -0.073$ at $p < 0.05$) and social risk ($\beta = -0.141$ at $p < 0.01$) exhibited a negative impact on the dependent variable. This indicates that as the investors perceive an increase in the economic, functional, time or social risk in real estate investments through online real estate sites, they are less likely to be inclined to invest using such sites. Psychological risk, however, depicted an insignificant impact ($\beta = -0.031$ at $p > 0.05$), so H1c was not accepted. Considering the impact of the five types of perceived risk on the investing attitude of the investors, it was found that all five of the dimensions, i.e., Economic risk ($\beta = -0.104$ at $p < 0.01$), Functional risk ($\beta = -0.224$ at $p < 0.01$), Psychological risk ($\beta = -0.076$ at $p < 0.01$) and Time risk ($\beta = -0.357$ at $p < 0.01$) and Social risk ($\beta = 0.196$ at $p < 0.01$) were significantly related to the investing attitude of the

investors, thus supporting H2 of the study. The impact was found be negative for economic, functional, psychological and time risk, which means that, if the investors perceive that there is more economical, functional, psychological and time risk involved when investing through online real estate sites, their intentions to invest via such sites will be negatively affected. The study supports H3 since the results have shown that the investing attitude is significantly related to the intentions of investors to invest through online real estate sites ($\beta = 0.252$ at $p < 0.01$). While studying the impact of the five types of perceived risk on the brand equity of online real estate sites, it was found that all five types tend to be significantly related to brand equity, i.e., Economic risk ($\beta = -0.08$ at $p < 0.01$), Functional risk ($\beta = -0.246$ at $p < 0.01$), Psychological risk ($\beta = -0.183$ at $p < 0.01$) and Time risk ($\beta = -0.453$ at $p < 0.01$) and Social risk ($\beta = 0.233$ at $p < 0.01$), which supports H5. The impact of all of the types except social risk on brand equity of online real estate sites was found to be negative, indicating that an increase in a different type of perceived risk, i.e., economic, functional, psychological and time risk decreases the brand equity of online real estate sites of investors, while brand equity increases along with an increase in social risk. Brand equity of online real estate sites reveals a significant influence on the intentions of investors to invest through such sites ($\beta = 0.426$ at $p < 0.01$). This means that the H6 of the research study is supported. If the brand equity of investors related to online real estate sites increases, they are more likely to invest through those sites, thus depicting a positive influence, as in Table 4 below.

This research incorporates two mediators in the conceptual framework. Table 5 given below contains the results for mediation, i.e., the specific indirect

effect along with the t-statistic and p value. The results of the analysis show that investing attitude significantly mediates the relationship between all types of perceived risk i.e., economic risk, functional risk, psychological risk, time risk and social risk (i.e., $p < 0.05$), thus supporting H4. The negative sign with the indirect effect for economic risk, functional risk, psychological risk, and time risk means that, as the

perceived economic, functional, psychological and time risk increase, the investing attitude of investors to invest through online real estate sites decreases, which ultimately leads to a decline in the intentions of investors to invest through those sites. For social risk, however, the mediation reports a positive sign. Figure 2 below explains the results of significance between the variables of the study (path analysis).

Table 4

Hypotheses testing (Direct effects)								
	Direct effects	β	t-stat	p value	F ²	5% C.I.	95% C.I.	Hypothesis status
H _{1a}	ER affects INT	-0.096	4.3	0.000	-0.096	-0.131	-0.065	Supported
H _{1b}	FR affects INT	-0.177	7.846	0.000	-0.177	-0.212	-0.136	Supported
H _{1c}	PR affects INT	0.015	0.666	0.253	0.015	-0.022	0.05	Not Supported
H _{1d}	TR affects INT	-0.073	1.740	0.041	-0.073	-0.138	-0.001	Supported
H _{1e}	SR affects INT	-0.141	3.350	0.000	-0.141	-0.212	-0.076	Supported
H _{2a}	ER affects ATT	-0.104	3.312	0.000	-0.104	-0.157	-0.058	Supported
H _{2b}	FR affects ATT	-0.259	8.889	0.000	-0.259	-0.306	-0.211	Supported
H _{2c}	PR affects ATT	-0.076	2.703	0.003	-0.076	-0.12	-0.027	Supported
H _{2d}	TR affects ATT	-0.357	5.863	0.000	-0.357	-0.46	-0.262	Supported
H _{2e}	SR affects ATT	0.196	3.034	0.001	0.196	0.097	0.307	Supported
H ₃	ATT affects INT	0.252	3.233	0.001	0.252	0.117	0.378	Supported
H _{5a}	ER affects BE	-0.08	2.726	0.003	-0.08	-0.128	-0.036	Supported
H _{5b}	FR affects BE	-0.246	8.886	0.000	-0.246	-0.289	-0.198	Supported
H _{5c}	PR affects BE	-0.183	7.001	0.000	-0.183	-0.224	-0.138	Supported
H _{5d}	TR affects BE	-0.453	7.308	0.000	-0.453	-0.562	-0.359	Supported
H _{5e}	SR affects BE	0.233	3.636	0.000	0.233	0.134	0.344	Supported
H ₆	BE affects INT	0.426	5.301	0.000	0.426	0.296	0.563	Supported

Abbreviations: ER, Economic Risk; FR, Functional Risk; PR, Psychological Risk; TR, Time Risk; SR, Social Risk, ATT, Investing Attitude, BE, Brand equity, INT, Intention to Invest.

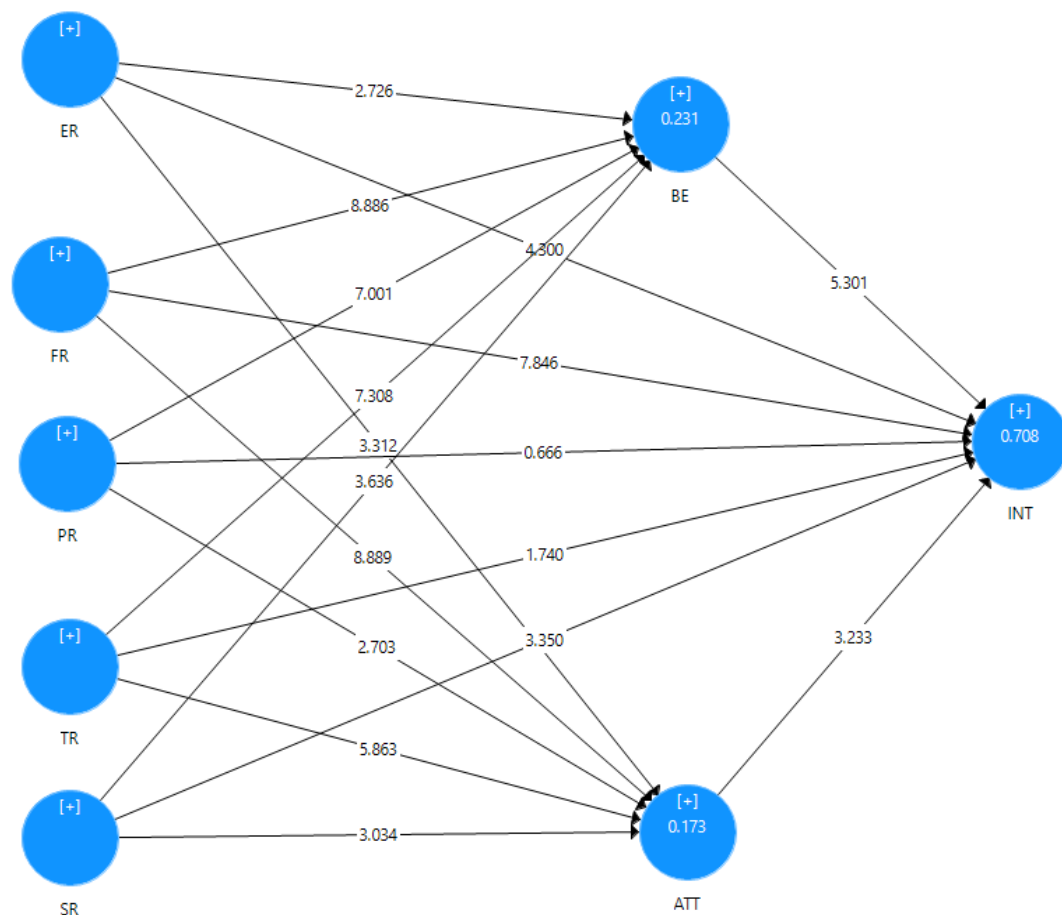
Source: own study.

Table 5

Hypotheses Testing (Indirect effects)							
	Indirect effects	Specific indirect effect	t-stat	p value	5% C.I.	95% C.I.	Hypothesis status
Mediator=ATT							
H ₄	ER affects ATT affects INT	-0.026	2.204	0.014	-0.052	-0.012	Supported

	FR affects ATT affects INT	-0.065	2.970	0.002	-0.105	-0.032	Supported
	PR affects ATT affects INT	-0.019	2.016	0.022	-0.039	-0.007	Supported
	TR affects ATT affects INT	-0.09	2.755	0.003	-0.152	-0.041	Supported
	SR affects ATT affects INT	0.049	2.155	0.016	0.019	0.095	Supported
Mediator=BE							
H ₇	ER affects BE affects INT	-0.034	2.358	0.009	-0.061	-0.015	Supported
	FR affects BE affects INT	-0.105	4.579	0.000	-0.144	-0.07	Supported
	PR affects BE affects INT	-0.078	4.024	0.000	-0.11	-0.048	Supported
	TR affects BE affects INT	-0.193	4.319	0.000	-0.279	-0.13	Supported
	SR affects BE affects INT	0.099	2.995	0.001	0.057	0.167	Supported

Abbreviations: ER, Economic Risk; FR, Functional Risk; PR, Psychological Risk; TR, Time Risk; SR, Social Risk, ATT, Investing Attitude, BE, Brand equity, INT, Intention to Invest.



Abbreviations: ER, Economic Risk; FR, Functional Risk; PR, Psychological Risk; TR, Time Risk; SR, Social Risk, ATT, Investing Attitude, BE, Brand equity, INT, Intention to Invest.

Fig. 2. Path analysis. *Source:* own study.

In the case of brand equity of online real estate sites as a mediator, the mediation between all the types of Perceived Risk, i.e., economic risk, functional risk, psychological risk, time risk and social risk (i.e., $p < 0.01$) and the Investors' Intention to Invest through online real estate sites was once again proven to be significant, and H5 was supported. The mediation proved to be negative for economic, functional, psychological and time risk, whereas brand equity increases along with an increase in social risk. Brand equity of online real estate sites mediates the linkage between the five types of perceived risk and the intention of investors to invest through online real estate sites, thus supporting the hypothesis.

4. Discussion

In this study, we conceptualized a model using multiple types of perceived risks in investment through online real estate sites, including economic risk, functional risk, psychological risk, time risk and social risk, and individually tested the impact of these dimensions on the intentions of investors to invest through such sites. The mediation of investing attitude and brand equity of online real estate sites was also tested. The analysis was run using SPSS and Smart PLS 3, with results showing that economic risk, functional risk, time risk and social risk have a negative influence on the intentions of investors to invest through online real estate sites. The negative influence is in compliance with the results of (Wang et al., 2018; Bhukya, 2015). The impact was also found to be statistically significant, which is in contrast to the study by Beneke et al. (2012), which found the influence of psychological risk to be insignificant. All the analyzed types of risk tend to significantly influence the investing attitude, as found in (Munnukka et al., 2017). Economic risk, functional risk, psychological risk and time risk showed a negative influence, similarly to overall perceived risk, which was in accordance with (Wessels & Drennan, 2010; Wang et al., 2018; Suki & Suki, 2017); social risk, however, depicted a positive influence, as also indicated by (Munnukka et al., 2017). In alignment with previous studies such as (Lima et al., 2020; Wang et al., 2018; Munnukka et al., 2017; Akhtar & Das, 2018; Alleyne & Broome, 2011; Ali, 2011), investing attitude showed a positive influence on intention to invest through online real estate sites. All of the types of perceived risk indicated a negative influence on brand equity, as was also the case in the studies of (Kirchoff et al., 2019; Çal & Lambkin, 2017; Chang & Chen, 2013), with the exception of social risk,

which was observed to have a positive influence. Brand equity of online real estate sites tends to shape the intentions of real estate investors positively, which is aligned with the results of (Slaton et al., 2020, Çal & Lambkin, 2017, Coursaris et al., 2016). It can be deduced from the results that social risk can help increase brand equity, as it relies upon the intentions of real estate builders to understand and take care of social responsibility. We can observe that brand equity is directly affected by social issues, hence sellers are required to take responsibility for societal benefit in order to create value. It can be noted that functional risk shows the highest coefficient value with intention to invest. This means that while making an online real estate investment decision, functional risk is given more importance by Pakistani investors. The reason for giving more importance to functional risk by investors in Pakistan is that the online real estate investment sector is not very developed. Most people are unaware of it, so their biggest fear is that the online real estate sites will not function properly, hence heightening the significance of this risk. The research gives insight into how the intentions of investors can be enhanced to promote real estate investment via online real estate sites. This could be helpful for property agents and the real estate market in Pakistan as a whole. The agents or other concerned parties need to reduce the perceived economic, functional, time and social risk related to the real estate sites in order to increase the agents' intentions to invest through them. In addition to this, the investing attitude of the investors could even be positively shaped to enhance their intentions to invest. Moreover, the brand equity of online real estate sites needs to be improved in order to motivate investors to invest through those sites. When the investors are offered higher brand equity, they will feel that they can invest in real estate through online sites, rather than physically meeting with real estate agents.

5. Conclusions

The most important contribution of the study is that it incorporated the brand equity of online real estate sites in the model, which is a variable that had not previously been studied. The majority of the previous studies incorporate financial investments, with studies related to real estate investments being limited, especially in Pakistan. Furthermore, online real estate investment is something that has not been highlighted in the literature earlier, thus the present study can be seen as empirically important in this

respect. The research contributes to the literature on real estate investments, especially that focusing on online investments in the real estate market.

5.1. Practical Implications

The implication of the study is twofold. Firstly, it adds value to literature and secondly, it is important in the context of real estate investments. Investments through online real estate sites are very infrequent in Pakistan despite the existence of a number of such sites, including zameen.com, realproperty.pk, prop.pk, aarz.pk, and this research can provide a clue as to how the intentions of investors to invest through them are shaped. The research presents how the investor's perceived risk impacts their intention to invest through online real estate sites, both directly and indirectly, through the brand equity of online real estate sites and the investment attitude of the investors. The study is of importance especially to online real estate sites, but also real estate agents in general, since it will allow them to determine how different investors perceive risk related to real estate and how it impacts their intention to invest.

5.2. Limitations and Future Directions

The study has some limitations when it comes to the sample size, which was a bit small. The time frame was cross-sectional, which could also affect the generalizability of the research model. Future researchers could conduct similar research with a larger sample size and longitudinal time frame. Such studies could even be conducted with two samples, where one set of data could be taken from layman investors having very limited knowledge regarding real estate investments, and the other sample would comprise proper investors that have very good knowledge of investments in the real estate market, such as property agents or people running real estate agencies. Having done so, a comparison could be made between the choices of the two classes of investors and how the perception of their risk varies with the increase in knowledge. Due to time and financial limitations, we studied brand equity as the only mediator, but suggest future researchers expand on the current research by adding the effect of other potential mediators, such as brand image, brand trust, brand loyalty, and brand reputation, on intention to purchase.

References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179–211.
- Akhtar, F., & Das, N. (2018). Predictors of investment intention in Indian stock markets: Extending the theory of planned behaviour. *International Journal of Bank Marketing*, 37(1), 97–119.
- Ali, A. (2011). Predicting Individual Investors' Intention to Invest: An Experimental Analysis of Attitude as a Mediator. *World Academy of Science, Engineering and Technology*, 50, 876–883.
- Alleyne, P., & Broome, T. (2011). Using the theory of planned behaviour and risk propensity to measure investment intentions among future investors. *Journal of Eastern Caribbean Studies*, 36, 1–20.
- Allport, G. W. (1935). *Attitudes. Handbook of social psychology*. Clark University Press.
- Barasinska, N., Badunenko, O., & Schaefer, D. 2009. Risk Attitudes and investment decisions across European countries-are women more conservative investors than men? *DIW Berlin Discussion Paper No. 928*.
- Beneke, J., Greene, A., Lok, I., & Mallett, K. (2012). The influence of perceived risk on purchase intent – the case of premium grocery private label brands in South Africa. *Journal of Product and Brand Management*, 21, 4–14.
- Bhukya, R. (2015). The effect of perceived risk dimensions on purchase intention: An empirical evidence from Indian private labels market. *American Journal of Business*, 30, 218–230.
- Boshoff, C., Schlechter, C., & Ward, S. J. (2011). Consumers' perceived risks associated with purchasing on a branded web site: The mediating effect of brand knowledge. *South African Journal of Business Management*, 42(1), 45–54.
- Brahmbhatt, D., & Shah, J. (2017). Determinants of brand equity from the consumer's perspective: A literature review. *IUP Journal of Brand Management*, 14(4), 33–47.
- Cal, B., & Lambkin, M. (2017). Brand equity of stock exchange as a mediator in financial decisions. *Journal of Financial Services Marketing*, 22, 14–23.
- Carretta, A., Fiordelisi, F., Schwizer, P., Nicolini, G., Gärling, T., Carlander, A., & Hauff, J. C. 2017. *Attitude toward risk and financial literacy in investment planning. Risk culture in banking*, pp. 307–320.
- Chang, C.-H., & Chen, Y.-S. (2013). Managing green brand equity: The perspective of perceived risk theory. *Quality & Quantity*, 48, 1753–1768.
- Chang, E. C., & Tseng, Y. F. (2013). Research note: E-store image, perceived value and perceived risk. *Journal of Business Research*, 66, 864–870.
- Coursaris, C. K., Osch, W. V., & Balogh, B. A. 2016. Do facebook likes lead to shares or sales? Exploring the empirical links between social media content, brand equity, purchase intention, and engagement. *49th Hawaii International Conference on System Sciences (HICSS)*, pp. 3546–3555.
- Cunningham, S. M. (1967). The major dimensions of perceived risk. In D. F. Cox (Ed.), *Risk taking and information handling in consumer behavior*. Harvard University Press.
- Derbaix, C. (1983). Perceived risk and risk relievers: An empirical investigation. *Journal of Economic Psychology*, 3, 19–38.
- Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of price, brand, and store information on buyers' product evaluations. *JMR, Journal of Marketing Research*, 28, 307–319.
- Dogra, P., Kaushal, A., & Kalia, P. (2024). What drives the investment intentions of emerging economy millennials? Examining the effect of financial advertisement with the PLS-SEM. *Journal of Financial Services Marketing*, 29(2), 276–291.
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes Orlando*. Harcourt Brace Jovanovich College Publishers.

- Feiz, D., & Moradi, H. (2019). Creating consumer-based brand equity for customers by brand experience: Evidence from Iran banking industry. *Journal of Islamic Marketing*, 11(6), 1443–1464.
- Gao, B. M., Liu, M. T., & Chu, R. (2022). Information disclosing willingness in mobile internet contexts. *Asia Pacific Journal of Marketing and Logistics*, 35(1), 108–129.
- Gupta, A., Newell, G., Bajaj, D., & Mandal, S. (2020). Determinants of foreign and domestic non-listed real estate fund flows in India. *Journal of Property Investment & Finance*, 38(6), 503–524.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135.
- Huber, C., & Huber, J. (2019). Scale matters: Risk perception, return expectations, and investment propensity under different scalings. *Experimental Economics*, 22, 76–100. PMID:30828259
- Huber, J., Palan, S., & Zeisberger, S. (2019). Does investor risk perception drive asset prices in markets? Experimental evidence. *Journal of Banking & Finance*, 108, 105635.
- Hubert, M., Blut, M., Brock, C., Zhang, R. W., Koch, V., & Riedl, R. (2019). The influence of acceptance and adoption drivers on smart home usage. *European Journal of Marketing*, 53(6), 1073–1098.
- Kabir, S., Jamal, Z. B., & Kairy, B. P. (2024). How much to invest for house purchase? The consumer purchase intention perspective of real estate investment decision. *International Journal of Housing Markets and Analysis*, 17(4), 881–903.
- Kaiser, C., & Freybote, J. (2022). Is e-commerce an investment risk priced by retail real estate investors? An investigation. *Journal of Property Research*, 39(3), 197–214.
- Keller, K. L., & Brexendorf, T. O. (2019). Measuring Brand Equity. In F. Esch (Ed.), *Handbuch Markenführung*. Springer Gabler.
- Kirchoff, J. F., Nichols, B. S., & Rowe, W. J. (2019). The impact of functional integration on perceived risk and consumer-based brand equity. *Journal of Strategic Marketing*, 27, 136–150.
- Kumar, S., Goyal, N., & Basu, R. (2018). Profiling emerging market investors: A segmentation approach. *International Journal of Bank Marketing*, 36, 441–455.
- Kumari, J. S., Senani, K. G. P., & Ajward, R. (2023). Predicting investors' intention to invest in the stock market during COVID-19: Can we use an extended theory of planned behavior? *Journal of Asia Business Studies*, 17(4), 681–700.
- Kurylchuk, K. 2019. *Risks in international real estate investment: The case of Central and Eastern Europe*. 26th Annual European Real Estate Society Conference.
- Lathif, A., & Aktharsha, S. (2016). Determinants of investment decision-making: Behavioral perspective. *SCMS Journal of Indian Management*, 13, 122–128.
- Lăzăroiu, G., Neguriță, O., Grecu, I., Grecu, G., & Mitran, P. C. (2020). Consumers' decision-making process on social commerce platforms: Online trust, perceived risk, and purchase intentions. *Frontiers in Psychology*, 11, 890. PMID:32499740
- Lee, S., Switzer, L. N., & Wang, J. (2019). Risk, culture and investor behavior in small (but notorious) Eurozone countries. *Journal of International Financial Markets, Institutions and Money*, 60, 89–110.
- Li, Z., Sha, Y., Song, X., Yang, K., ZHao, K., Jiang, Z. and Zhang, Q. (2020). Impact of risk perception on customer purchase behavior: A meta-analysis. *Journal of Business and Industrial Marketing*, 35(1), 76–96.
- Lima, T. S., Mail, R., Karim, M. R. A., Ulum, Z. K. B., Mifli, M., & Jaidi, J. (2020). An investigation of financial investment intention using covariance-based structural equation modelling. *Global Business and Finance Review*, 25, 37–50.
- Lu, H., Hsu, C., & Hsu, H. (2005). An empirical study of the effect of perceived risk upon intention to use online applications. *Information Management & Computer Security*, 13, 106–120.
- McGough, T., & Berry, J. 2021. Real estate risk, yield modelling and market sentiment: the impact on pricing in European office markets. *Journal of European Real Estate Research*.
- Munnukka, J., Uusitalo, O., & Koivisto, V.-J. (2017). The consequences of perceived risk and objective knowledge for consumers' investment behavior. *Journal of Financial Services Marketing*, 22, 150–160.
- Nadeem, M. A., Qamar, M. A. J., Nazir, M. S., Ahmad, I., Timoshin, A., & Shehzad, K. (2020). How investors attitudes shape stock market participation in the presence of financial self-efficacy. *Frontiers in Psychology*, 11, 553351. PMID:33192804
- Neumann, L. J., & Morgenstern, O. (1947). *Theory of games and economic behavior*. Princeton university press.
- Nguyen, L., Gallery, G., & Newton, C. (2019). The joint influence of financial risk perception and risk tolerance on individual investment decision-making. *Accounting and Finance*, 59, 747–771.
- Oladeji, J. D., Zulch, B., & Yacim, J. A. (2023). Implications of macroeconomic risks on NHFC's incremental housing finance in South Africa. *International Journal of Housing Markets and Analysis*, 16(7), 80–102.
- Pavlou, P. (2002). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce*, 7, 101–134.
- Proudlove, R., Finch, S., & Thomas, S. (2020). Factors influencing intention to invest in a community owned renewable energy initiative in Queensland, Australia. *Energy Policy*, 140, 111441.
- Ribeiro, M. I., Ferreira, F. A., Jalali, M. S., & Meidutė-Kavaliauskienė, I. (2017). A fuzzy knowledge-based framework for risk assessment of residential real estate investments. *Technological and Economic Development of Economy*, 23, 140–156.
- Schiffman, L. G., & Kanuk, L. L. (2000). *Consumer Behavior*. New Jersey, Prentice Hall.
- Schulmerich, M., Leporcher, Y. M., Eu, C. H., Schulmerich, M., Leporcher, Y. M., & Eu, C. H. (2015). *Investor risk perceptions and investments: Recent developments. Applied asset and risk management: A guide to modern portfolio management and behavior-driven markets*, pp. 415–462.
- Shah, S. Z. A., Ahmad, M., & Mahmood, F. (2018). Heuristic biases in investment decision-making and perceived market efficiency. *Qualitative Research in Financial Markets*, 10(1), 85–110.
- Singh, R. R., Sarva, M. and Sharma, M. 2020. Investment behaviour and risktaking ability among retail investor: Role of demographic factors. *PalArch's Journal of Archaeology of Egypt/Egyptology*, 17, 5902–5926.
- Singla, H., & Hiray, A. (2019). Evaluating the impact of hedonism on investment choices in India. *Managerial Finance*.
- Singla, H.K. & Hiray, A. (2019). Evaluating the impact of hedonism on investment choices in India. *Managerial Finance*, 45(12), 1526–1541. <https://doi.org/10.1108/MF-07-2019-0324>
- Slaton, K., Testa, D., Bakhshian, S., & Fiore, A. M. (2020). The small, inventory free retail format: The impact on consumer-based brand equity and purchase behavior. *Journal of Retailing and Consumer Services*, 57, 102–246.
- Sobaih, A. E. E., & Elshaer, I. A. (2023). Risk-taking, financial knowledge, and risky investment intention: Expanding theory of planned behavior using a moderating-mediating model. *Mathematics*, 11(2), 453.
- Suki, N. M., & Suki, N. M. (2017). Modeling the determinants of consumers' attitudes toward online group buying: Do risks and

- trusts matters? *Journal of Retailing and Consumer Services*, 36, 180–188.
- Theurer, C. P., Tumasjan, A., Welp, I. M., & Lievens, F. (2018). Employer branding: A brand equity-based literature review and research agenda. *International Journal of Management Reviews*, 20, 155–179.
- Trang, P. T. M., & Tho, N. H. (2017). Perceived risk, investment performance and intentions in emerging stock markets. *International Journal of Economics and Financial Issues*, 7(1), 269–278.
- Ullah, F., & Sepasgozar, S. M. (2020). Key factors influencing purchase or rent decisions in smart real estate investments: A system dynamics approach using online forum thread data. *Sustainability*, 12(11), 4382.
- Wang, S., Wang, J., Li, J., Wang, J., & Liang, L. (2018). Policy implications for promoting the adoption of electric vehicles: Do consumer's knowledge, perceived risk and financial incentive policy matter? *Transportation Research Part A, Policy and Practice*, 117, 58–69.
- Wang, Y., Gu, J., Wang, S., & Wang, J. (2019). Understanding consumers' willingness to use ride-sharing services: The roles of perceived value and perceived risk. *Transportation Research Part C, Emerging Technologies*, 105, 504–519.
- Washington, M., Shirley, E., Lisset, G., & Regina, R. (2015). Students' perceived risk and investment intention: The effect of brand equity. *Management & Marketing*, 10(3), 208–225.
- Wasiuzzaman, S., Chong, L. L., & Ong, H. B. (2022). Influence of perceived risks on the decision to invest in equity crowdfunding: A study of Malaysian investors. *Journal of Entrepreneurship in Emerging Economies*, 14(2), 208–230.
- Wessels, L., & Drennan, J. (2010). An investigation of consumer acceptance of M-banking. *International Journal of Bank Marketing*, 28, 547–568.
- Wu, W., & Kou, G. (2016). A group consensus model for evaluating real estate investment alternatives. *Financial Innovation*, 2(8), 1–10.
- Yii, J., Shein, H., & Ming, W. P. (2020). Green products purchase intention: A study of Sibu Sarawak. *Journal of Social Sciences and Humanities*, 17(1), 62–79.
- Yoo, B., & Donthu, N. (2001). Developing and validating a multidimensional consumer-based brand. *Journal of Business Research*, 52, 1–14.
- Zhang, Y., Wang, C., Tian, W., & Zhang, G. (2020). Determinants of purchase intention for real estate developed on industrial brownfields: Evidence from China. *Journal of Housing and the Built Environment*, 35, 1261–1282.