

# Brand equity of stock exchange as a mediator in financial decisions

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**Abstract** The aim of this study is to investigate investors' brand equity perception for a stock exchange as a mediator in financial investment decisions. An online survey is conducted in two samples in the developed market context of Ireland and developing one of Turkey. Results indicate that although investors' risk perception has a negative impact on investment decisions, this impact is partially mediated by brand equity of stock exchanges in question. This mediating effect further differs by the market context, with a larger effect size in the developing Turkish market. It can be concluded that although developing markets face higher volatility in macroeconomic conditions, it could be possible to spread the risk resulting from this volatility with an effective brand equity management, which is found to be especially important in developing markets. The study offers some practical implications to policy makers and managerial sides regarding the need for a careful perception management aimed at individual investors.

**Keywords** Brand equity · Stock exchange · Investment intention · Perceived risk

## Introduction

Investment decisions differ from other decision types by the level of risk associated (Dorn and Huberman 2010). They usually involve higher levels of risk than other kinds of purchase decisions (Noussair et al. 2014). This risk factor in financial decisions makes return and loss an issue for investors more than for other consumer types.

The factors which have important implications on financial decisions at a microlevel include heuristics, which are the cognitional or emotion-based biases or simplifying decision rules for investment decisions (Hauser 2014; Mousavi and Gigerenzer 2014). Empirical studies indicate that about 50% of people intuitively rely on heuristics (Huberman and Wei 2006). Examples of these heuristics include availability bias, overconfidence, endowment bias, cognitive dissonance and framing bias (Pompian 2006).

At a macrolevel, on the other hand, corporate brands and such brand-related variables as brand equity, reputation, performance and trust govern financial decisions as brands gain increasingly more importance not only for customers but also for stakeholders including investors (Aspara 2013; Fischer and Himme 2016). Besides these corporate brands, stock markets, or stock exchanges as a manifestation of the financial market, are considered to have significant impacts on investor decisions by means of the overall brand equity that they resonate for their actual and potential investors. Thus, it is suggested that brand equity of a stock exchange might add to or detract from investors' risk perception on the way to influence their investment intention.

To the best of our knowledge, there has been little research on this perspective, i.e., the brand equity of stock exchange for individual investors as an important

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influencer in the relationship between risk and investment intention, and thus is worth investigating.

The first section opens with the theoretical background. It later develops into the method used in the study. The last section includes the discussion of the results obtained, conclusion and practical implications and ends with the limitations and further research.

## Theoretical background and hypotheses development

### Intention to invest

Referring to any desire or plan to conduct a certain purchasing behavior, intention to purchase plays a major role in the relationship between attitude and behavior and is often treated as a proxy for the actual behavior (Cobb-Walgreen et al. 1995; Morwitz et al. 2007). This causal relationship is found to be stronger when respondents are asked to provide intentions to buy specific brands or models, rather than at the product category level.

A number of studies have shown that the relationship between the intention to purchase and actual purchase behavior is valid in many financial product and service domains, although it can be mitigated by various conditions, such as product involvement and product knowledge (Lim et al. 2013) or switching cost types (Blut et al. 2015).

### Perceived risk

Investors and managers evaluate potential investments in terms of risk and return (Rego et al. 2009). The general risk definitions tend to include two elements, uncertainty and consequences (Schiffman et al. 2011). While uncertainty differs from risk in that it is unlikely to be measured, consequences generally carry negative connotations which have important impacts on financial decisions. Investment issues are among those highly affected by the risk dynamics due to the high risk involving nature of financial decisions (Chen and He 2003). Investors' risk perception arising from the issues related to stocks, financial market and/or financial crisis events is known to have disparate effects on their asset allocations (Lua et al. 2016). Although higher risk is associated with higher return especially for the professional investors with the lowest risk aversion (Yitzhaki and Lambert 2014), it usually has a negative impact on the investment decisions of less professional, individual investors with limited resources (Barisinska et al. 2012; Bateman et al. 2011; Yitzhaki 1987). As a result, it is suggested that when individual investors perceive high risk associated with a stock

exchange, their intention to invest degrades. This leads to the first hypothesis:

**H<sub>1</sub>** Perceived risk for a stock exchange has a negative effect on individual investors' intention to invest.

### Brand equity

The interaction between brands and consumers has been a subject for many disciplines as the implications of this relationship transcends the traditionally ascribed role of marketing on the issue. It has gained special importance for the finance discipline, for instance, as there has been a common understanding that brands' relational as well as numerical success with their customers reflect onto their financial performance (Aspara 2013; Frieder and Subrahmanyam 2005; Seddon 2015). Beyond the firm level, even the countries with highest brand index ratings attract higher share of investments, tourists, and students according to the reports by Anholt-GfK (2012) and FutureBrand Country Brand Index (2012) (Bose et al. 2016).

As the set of assets and liabilities that can be attached to a brand that adds to or subtracts value (Aaker 1991), brand equity is one of the most frequently investigated brand variables (Tavassoli et al. 2014). Initially coined as customer-based brand equity (Aaker 1991; Keller 1993), the concept develops in time into such different forms as financial-based brand equity (Mahajan et al. 1994), employee-based brand equity (King and Grace 2005) and investor-based brand equity (Çal and Lambkin 2016; Jacobsen 2009, 2012). The common ground in these approaches is that positive brand equity perception for a certain brand increases the purchase intention toward it, while at the same time having a negative effect on the likelihood of searching for rival products or brands (Cobb-Walgreen et al. 1995; Netemeyer et al. 2004). In a similar way, well-established brand equity of a stock exchange confers investment brands with a higher chance of being chosen among many others.

Brand equity also functions as a risk eliminator for a certain product of a firm or the firm itself emphasizing perceived utility over the risk factors (Bailey and Ball 2006). Customers are imperfectly informed and thus uncertain about product attribute levels even after experience with the product (Erdem et al. 2004), which may escalate their risk perception for a future purchase. In such a case, many firms, especially financial ones, resort to varying marketing techniques in order to assure customer trust (Cabanillas et al. 2013). In a service context, for instance, studies show that brands with a strong image pay off better in reducing customers' risk perception and enhancing their purchase intention due to its credibility



even following a failure incident (Casidy and Wymer 2016).

Similar to firms' attempts to lessen the information asymmetry between their customers and their offerings, it is suggested that investors faced with high levels of risk associated with their investment decisions tend to use different information sources to come to a decision on whether to invest or not. As one of these sources, brand equity ascribed to a stock exchange acts as a mediator conveying the impact of perceived risk onto investment intention. This leads to the second hypothesis:

**H<sub>2</sub>** Brand equity of a stock exchange partially or fully mediates the relationship between perceived risk and intention to invest.

### Developing versus developed markets in investment behavior

There exist important structural differences between developed markets and developing ones (Munemo 2016; Zou and Li 2016) as a reflection of the difference in country economies and cultures. Some of these differences at the product market level include weaker brand consciousness (Sheth 2011), looser connection between brand liking and responsiveness to advertising, sticking and sales conversion (Pauwels et al. 2013), and weaker belief in the price–quality relationship as a result of less credible price information (Zhou et al. 2002) for the developing markets.

Individual investors comprise a remarkable portion of the trading activity (Çal and Lambkin 2016; Zou and Li 2016) in developing markets, while the overall volume in developed markets is more dependent on institutional investors. At the capital market level, the main distinction lies in the regulatory systems and investor perception. While developed financial markets operate under a firmer mechanism which prioritizes investor protection, developing markets are characterized with less effective regulatory systems (Kim and Schellhase 2015). The lack of quality reassurance for the developing market investors increases their risk perceptions; thus, brand's credibility is especially effective when consumers are faced with risky choices (Erdem et al. 2006). As a signal of brand credibility, brand equity is considered to have a higher smoothing impact for the developing market investors than developed market investors.

**H<sub>3</sub>** Mediating effect of brand equity between perceived risk for a stock exchange and intention to invest in there differs according to the development of the financial market, with a more risk-reducing impact on the developing Turkish market.

## Methodology

### Research design and sample selection

The sample of this study comprises full-time and part-time faculty members employed at the state and private universities across Turkey and Ireland. The choice of this advantageous group by education level in both countries is mainly due to the positive effect of financial literacy in investment decisions (Jappelli and Padula 2013). It is more likely that higher socioeconomic groups with higher education levels will be more financially literate (Campbell 2006; Klapper et al. 2013).

The study carries a comparative character in that the suggested relationships are tested in the developing market context of Turkey and the developed market of Ireland, and the results are compared and contrasted in line with the underlying theory.

Due to the large number of universities in Turkey, which is 193, a stratified sampling method is used by randomly including one university from each city. By comparison, since the number of institutions in Ireland amounts to 32 only, all of them are included in the sampling process.

Also, it is worth noting that non-investors (potential investors, past investors) as well as real (current) investors are included in the sampling process since the main emphasis of the study is on individual perceptions toward the investment behavior in particular stock exchanges, rather than the ultimate investment behavior.

### Construct development

Brand equity tends to be measured in two different approaches in the marketing literature. The first approach relies on a multi-dimensional scale including such dimensions of brand equity as brand association, awareness, loyalty, trust and performance (Berry 2000; Netemeyer et al. 2004). In the second approach, a unidimensional scale is used in assessing the overall brand equity (Hsu and Lawrence 2016; Qui and Leszczyc 2016). This study resorts to the second approach and measures brand equity using a 4-item unidimensional scale obtained from Yoo and Donthu (2001), Loureiro (2013), Low and Lamb (2000) and Rundle-Thiel and Mackay (2001).

Perceived risk is measured using a 4-item scale adopted from Stone and Grønhaug (1993), Erdem and Swait (2004). The scale used for the dependent variable of investment intention is based on the studies by Ha and Janda (2012), Cronin et al. (2000), Netemeyer et al. (2004). All items are rated using five-point Likert type scales, ranging from 1 = strongly disagree to 5 = strongly agree.



An online survey method is used for gathering the data. The questions in the survey are prepared in English and Turkish. Translation-back translation method is used to provide the coherence between the two languages (Malhotra and Birks 2008).

### Data collection and analysis

The survey link was sent to 23,115 academic staff in Turkey and 12,377 in Ireland, whose email addresses were obtained from the university websites. While the Turkey application yielded a total of 1578 usable questionnaires, the number achieved in the Ireland application was 396. Although the response rates do not seem to be high, responses on both sides are considered to be large enough and equally well dispersed in every city/county, thus representing the research population successfully.

Structural equation modeling has been used in testing the relationships since it is suggested in many studies as one of the most successful statistical methods testing all the relationships in one model and including the error coefficients in doing that (Kline 2011). A two-step approach was followed in this analysis as suggested by Anderson and Gerbing (1988). First, a confirmatory factor analysis was run and the variables were checked in terms of validity and reliability issues, thus confirming the underlying constructs. Following the confirmation of the research model, a structural analysis was conducted to test the suggested hypotheses. The mediating effects were tested using the bootstrapping method, and results were subsequently double-checked using the Sobel test.

## Results

### Samples' demographics

The samples' demographics are shown in Table 1.

Due to the relatively homogenous characteristic of the research sample—university faculty—both samples show a high education level having graduate degree at least, as intended in the first place.

In both samples, males outnumber females, consistent with previous findings that men trade more excessively and confidently than women (Barber and Odean 2001; Beckmann and Menkhoff 2008).

Finance literature suggests different findings on the impact of age on investment behavior (Choi et al. 2016; Hallahan et al. 2004; Jagannathan and Kocherlakota 1996). One stream of these studies asserts that investment motivation increases with age due to the less constrained budget planning in time, while the other suggests that younger populations turn to investment more as they need more funding to build their lives. In our study, age is found to vary in both samples. While the participation rate decreases with age in the Irish sample, it increases with age in the Turkish sample.

Other demographics found to have different characteristics in both samples include monthly income (Fisher et al. 2015), with a higher-income level for the Irish sample. The samples, on the other hand, are similar in that the married participants outnumber the unmarried participants in both samples. Consistent with the rise in age, the need for financial resources is considered to rise with marriage and family development.

**Table 1** Comparative Sample Demographics

		Turkey*Frequency	Turkey %	Ireland*Frequency	Ireland %
Gender	Male	1093	69,3	211	54,4
	Female	485	30,7	163	42,0
Age Category	21–30	544	34,5	24	6,1
	31–40	531	33,7	96	24,3
	41–50	295	18,7	128	32,4
	51 and above	208	13,2	147	37,2
Education level	Undergraduate	72	4,6	27	6,9
	Post-graduate	1506	95,4	367	93,2
MaritalStatus	Married	983	62,3	260	66,8
	Single	595	37,7	92	23,7
MonthlyIncome	375€ -below***	2	0,1	(1000–2500€) 59	15,0
	376€–750€****	16	1,0	(2501–4000€) 127	32,3
	751€–1124€	68	4,3	(4001–5500€) 47	12,0
	1125€–1498€	665	42,1	(5501–7000€) 46	11,7
	1499€–1873€	321	20,3	(7001–8500€) 47	12,0
	1874€ -above	506	32,1	(prefer not say) 67	17,0

\*Turkey sample size = 1578; \*\*Ireland sample size = 396



Overall, the results for the samples' demographics indicate that both samples adequately account for the variation in the population, except for the education factor which is taken for granted at the first place.

**Confirmatory factor analysis—reliability and validity checks**

Prior to the structural model formation and hypothesis testing, confirmatory factor analysis (CFA) is conducted in order to check the suitability of the underlying constructs for both samples. To achieve this goal, composite reliability (CR), convergent validity and discriminant validity controls are made (Kline 2011). The validity and reliability results are shown in Table 2 for the Turkish sample and in Table 3 for the Irish sample.

Composite reliability results indicate that both samples have values above 0.70 level (Nunnally and Bernstein 1994), thus confirming the reliability condition for the scales used.

As an indicator of convergent validity, average variance extracted (AVE) for both samples is found above 0.50 (Bagozzi and Yi 1988), indicating the sufficient factor

loadings for the items in each scale. Discriminant validity is checked based on three conditions: maximum shared variance (MSV) must be lower than AVE; average shared variance (ASV) must be lower than AVE; and square root of AVE must be higher than the inter-factorial correlations (Hair et al. 2009). CFA results show that all three conditions are met for both samples. Thus, no reliability or validity issues are detected for either sample.

**Structural analysis—causal relationships and mediating effect**

Following the control of scale items in terms of reliability and validity, the structural model is formed to test the suggested hypotheses. The bootstrapping method is used in testing the mediation. Results are further checked using Sobel test.

Results showing the mediating effect of brand equity in the relationship between perceived risk and intention to invest are presented in Table 4.

Results show that perceived risk negatively and significantly affects intention to invest in both samples ( $p < 0.01$ ). The effect is stronger for the Irish sample

**Table 2** Reliability and validity results for Turkey sample

	CR	AVE	MSV	ASV	Risk	Brand equity	Intention to invest
Risk	0.744	0.596	0.159	0.113	0.772		
Brand equity	0.822	0.606	0.269	0.168	-0.258	0.778	
Intention to invest	0.840	0.726	0.269	0.214	-0.399	0.519	0.852

**Table 3** Reliability and validity results for Ireland sample

	CR	AVE	MSV	ASV	Risk	Brand equity	Intention to invest
Risk	0.749	0.600	0.582	0.305	0.775		
Brand equity	0.751	0.505	0.106	0.066	-0.164	0.710	
Intention to invest	0.800	0.667	0.582	0.344	-0.763	0.325	0.817

**Table 4** Mediating effect of brand equity for samples

	Independent variable	Dependent variable	Standardized regression	Significance
Without perceived risk				
Turkey	Perceived risk	Intention to invest	-0.410	***
Ireland	Perceived risk	Intention to invest	-0.772	***
With perceived risk				
Turkey	Perceived risk	Brand equity	-0.258	***
	Brand equity	Intention to invest	0.446	***
Ireland	Perceived risk	Intention to invest	-0.285	***
	Perceived risk	Brand equity	-0.163	0.014
	Brand equity	Intention to invest	0.190	***
	Perceived risk	Intention to invest	-0.739	***

\*\*\* Significant at the 0.001 level





( $-0.77$ ) while being moderate for the Turkish one ( $-0.41$ ). Thus,  $H_1$  is supported for both samples.

In testing the mediating effect, Baron and Kenny's (1986) approach is followed as being highly referred to in mapping statistics for mediation. This approach has three basic conditions. First, the independent variable must affect the mediator in the first equation; second, the independent variable must be shown to affect the dependent variable in the second equation; and third, the mediator must affect the dependent variable in the third equation. In the case of any mediation, the effect of the independent variable on the dependent variable must be less in the third equation than in the second.

Accordingly, in the Turkish sample, when brand equity is introduced to the relationship between perceived risk and intention to invest, the relationship decreases from  $-0.41$  to  $-0.28$  and remains significant ( $p < 0.01$ ). The other two relationships between the perceived risk and brand equity ( $-0.25$ ), and between brand equity and intention to invest ( $0.44$ ) are also significant, thus meeting all three conditions in Baron and Kenny's approach. The indirect relationship detected between perceived risk and intention to invest is further checked using the Sobel test and found to be statistically significant at the level of  $0.00$  ( $-6.029$ ).

In the Irish sample, when perceived risk is introduced to the model, the relationship between perceived risk and intention to invest decreases from  $-0.77$  to  $-0.73$  and remains significant. Also, the relationships between perceived risk and brand equity ( $-0.16$ ), and between brand equity and intention to invest ( $0.19$ ) are still statistically significant. The bootstrapping results show that the indirect relationship is significant at the  $0.027$  level. The results are also found to be significant at the  $0.026$  level by the Sobel test ( $-1.942$ ).

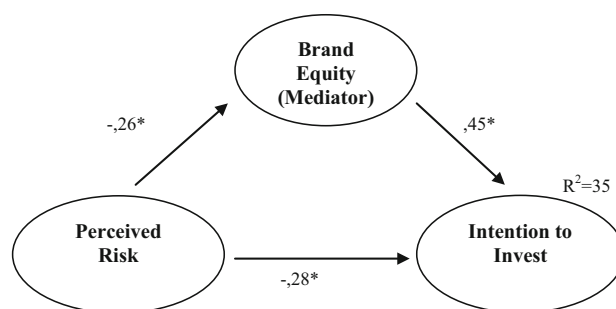
According to the Baron and Kenny approach, results for both cases indicate a partial mediation by brand equity between perceived risk and intention to invest. Thus,  $H_2$  is supported (Figs. 1, 2).

The partial mediation by the brand equity of the stock exchanges is checked in terms of its effect size in the different market contexts under investigation. Results are shown in Table 5.

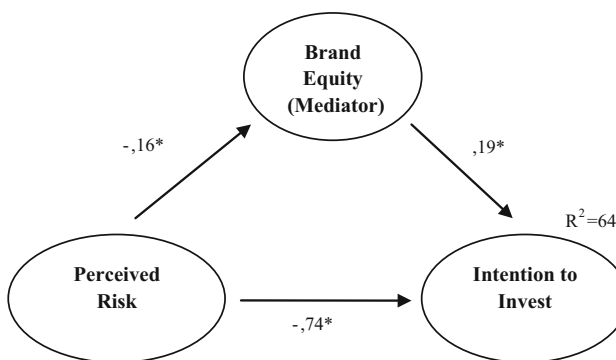
The effect size of brand equity as a partial mediator is found to be larger for the Turkish sample than the Irish sample. In other words, although partially mediating the relationship between perceived risk and intention to invest for both samples, brand equity has a more influential effect on the developing Turkish market than the developed market of Ireland.

## Discussion and conclusion

Financial decisions differ from other decision types in terms of risk that they involve (Noussair et al. 2014). Having to make their investment decisions under high



**Fig. 1** Research model for Turkey. Model fit:  $\chi^2/df = 2.37$ ; GFI = 0.991; AGFI = 0.982; NFI = 0.984; RFI = 0.97; IFI = 0.991; TLI = 0.985; CFI = 0.991; RMSEA = 0.030. \* $p$  is significant using a type I error rate of 0.01



**Fig. 2** Research model for Ireland. Model fit:  $\chi^2/df = 1.85$ ; GFI = 0.969; AGFI = 0.946; NFI = 0.933; RFI = 0.903; IFI = 0.968; TLI = 0.953; CFI = 0.968; RMSEA = 0.047. \* $p$  is significant using a type I error rate of 0.01

**Table 5** Effect sizes for Turkey and Ireland applications

	Included	Excluded	$f$ squared	Effect size
R-squared for Turkey	0.35	0.17	0.2769	Medium
R-squared for Ireland	0.64	0.61	0.0833	Small

levels of risk, individuals are usually in search of other supporting information which would simplify their decision process and validate their ultimate decision. Heuristics as shortcuts or biases are mostly referred to in such cases (Mousavi and Gigerenzer 2014). As opposed to the rather rational and stable nature of many financial factors having an influence in investment decisions, heuristics are based on cognition or emotion, thus differing in perceptual level for each person. While a vast majority of studies mainly emphasize the financially driven factors in investment decisions, the impact of marketing variables seems to be ignored in this quest.

This study adopts a consumer/investor behavior perspective in explaining the investment behavior and suggests



that investors' brand equity perception for a stock exchange has a significant effect on their investment intention, which is a priori to the actual behavior (Morwitz et al. 2007). More specifically, it hypothesizes that although investment decisions are highly dependent on investors' overall risk perception for making this investment, this relationship between perceived risk and intention to invest in a particular stock exchange is mediated by brand equity. Thus, investor-based brand equity approach to the understanding of investor behavior (Çal and Lambkin 2016; Jacobsen 2009, 2012) stands out as the underlying argument of this study.

The suggested mediating effect of brand equity is tested in the developing market context of Turkey and the developed market of Ireland based on the arguments of the structural differences between emerging markets and developed markets (Munemo 2016; Zou and Li 2016). Samples include the faculty employed in the universities across Turkey and Ireland with an anticipation that high socioeconomic and education levels are positively correlated to financial literacy (Campbell 2006; Klapper et al. 2013), thus complying with the research aims.

Results show that perceived risk has an important and negative impact on the intention to invest in both countries' stock exchanges, as expected. Brand equity perceived by the samples for the stock exchange, however, partially mediates the relationship between these two variables. In other words, when the participants perceive positive brand equity for the stock exchange of their residing country, their reservation in investing, resulting from high risk perception, decreases substantially. Thus, brand equity for the stock exchange operates as a risk reductive factor in both the developed and developing financial market contexts under investigation.

The impact of brand equity as a mediator differs by the country context, with a larger effect size for the developing financial market of Turkey. Brand equity is, on the other hand, found to be less effective in weakening the negative effect of risk for the developed Irish market, whose high risk perception keeps on having a negative impact on investment intention even when the sample possesses positive brand equity perception for the stock exchange. In other words, brand equity perception for a stock exchange contributes to risk reduction, thus to positive investment intention, more for a developing financial market context than for a developed one.

The reasons may vary for these findings. Relative to their counterparts in developed markets, investors in developing markets face higher macroeconomic volatility (Kaminsky and Reinhardt 1999; Tybout 2000). This volatility entails a direct welfare cost for risk-averse individuals, as well as an indirect one through its adverse effect on income growth and development (Loayza et al. 2007).

Having to make their investment choices under such rigid conditions, investors in developing markets are expected to search for other factors which will clear the way for their decision, or even legitimate it. Brand equity for the country stock exchange comes out as one of these factors, which investors may hold on to consciously or not.

Also, developing stock markets involve higher risks but yield higher returns at the same time. It becomes more likely for the investors of developing markets to perceive the stock market as a lucrative vehicle for building wealth, and thus to have higher expectations of their future investment. In such a case, these investors will more actively pursue risk reduction strategies, while these efforts will be curtailed for those investors of developed markets due to the less risk and lower return involving nature of these markets, and resulting lower expectation from a stock exchange as a place to accumulate wealth (Dobni and Racine 2016). Thus, brand equity, as a risk reductive factor, arises less of an issue for investors of developed markets than those of developing markets.

### Managerial implications

Results are believed to have some important implications. Firstly, as indicated by both marketing and finance disciplines, perceived risk has a significant impact on the financial behavior of individual investors, regardless of the development level of the stock market where they invest. Due to the perceptual characteristic of risk involved in financial decisions, it is believed that perceived risk is controllable by the managerial sides, which can be the stock exchange managements, stock market regulators or even stock brokers. An efficient information and guidance, which would reveal all the related pros and cons of a future financial decision, would, for instance, decrease the investors' prejudices for financial investments, investments in a certain stock market or in a brand. Therefore, a closer interaction between investors and investment platforms might yield better results regarding evaluating the risk factors and having optimal decisions for both sides.

Results further show that even when the risks involved make any future investment a hard decision for the investor, positive brand equity for the stock exchange acts as like a simplifying heuristic and weakens the negative impact of risk factors. It is therefore recommended that a strong emphasis be put on the value propositions that a stock exchange creates in the minds of its investors. This is especially important for those investors in higher-risk environments such as developing markets. Since they face more rigid macroeconomic conditions in their investment decisions, thus being in a more disadvantageous position than their counterparts in developed markets, strong brand equity for the stock exchange would ease their decision-



making process turning their dormant inclination into an active intention to invest even in a risky environment.

### Limitations and suggestions for further research

The foremost limitation of the study is the use of cross-sectional data, which obstructs the generalization of the results. This limitation becomes even more important in such a dynamic context of financial decisions which are subject to fast-changing micro- and macroeconomic conditions. Therefore, a longitudinal approach to investigating investors' behavior in different time frames would yield more applicable results.

This study investigates the behavioral tendencies of individual investors excluding institutional ones. While individual investors constitute an important part of trading activity in developing markets, this is hard to say in developed markets which are mostly dominated by more professional investors and investment institutions. A future study which includes an institutional investors' perspective is highly recommended.

Also, the financial investment type investigated in this study is stock investment. The research design could be repeated for other investment types at the capital market level such as bonds, government bills or hedge funds, and the results could be compared between different investment platforms.

It is further believed that the coverage therefore the validity of this study could be strengthened by including more sample groups from the developed and developing countries. The verification of results is recommended especially for the BRICS countries which are major fast-developing countries, thus shaping the world economic outlook.

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