

PRIMARY RESEARCH

Financial Sophistication, Emotional Quotient, and Stock Market Participation: Theory and Evidence

Muhammad Akhtar ^{1*}, Faqir Muhammad ²

¹ Assistant Professor, FAST School of Management, National University of Computer & Emerging Sciences, Islamabad, Pakistan

¹ PhD Scholar, Air University School of Management (AUSOM), Faculty of Administrative Sciences, Air University, Islamabad, Pakistan

² Professor at Air University School of Management (AUSOM), Faculty of Administrative Sciences, Air University, Islamabad, Pakistan

Keywords

Financial Sophistication
Emotional Quotient
Islamic Financial Institutions
Stock Market Participation

Received: 05 April 2017

Accepted: 22 May 2017

Abstract. Decisions in the stock markets are made by individuals and influenced by financial sophistication and emotions. Accordingly, the current study investigates the impact of financial sophistication and emotional quotient on stock market participation. Empirical results demonstrated a positive association between motivation and stock market participation and, counter to the expectation, negative association between self-awareness and stock market participation. In today's dynamic environment, cognizant application of financial knowledge ensures efficiency, modifies the basic relations, and hence moderates the relationship between self-awareness and stock market participation. According to this study as well, financial literacy does not moderate the relationship between motivation and stock market participation. Results are in line with the Western settings and can be well-generalized to the Pakistani settings, having implications at micro and macro levels for individuals, industrial managers, Shari'ah scholars, and Islamic financial institutions. Study paved path for authorities of Islamic stock markets to structure trading system supported by motivation, self-awareness and financial sophistication of investors.

KAUJIE Classification: L43

JEL Classification: G11

©2017 JIBM. All rights reserved.

*Corresponding author: Muhammad Akhtar

†Email: muhammad.akhtar@nu.edu.pk



INTRODUCTION

The origin of common stocks which represent joint ownership of business has been traced by Robertson (1933) from medieval Muslim traders. Islamically, the legitimate form of shares is the common stocks, which lead to the legitimacy of stock market participation in Islamic perspective (Naughton & Naughton, 2000). The fastest growing segment of finance in the world is Islamic finance, with a growth rate of 15 percent per annum (Karim, Lee, Karim, & Jais, 2012). The Islamic Banking Industry (IBI) in Pakistan witnessed a growth of Rs. 65 billion during October to December 2016 reaching Rs. 1853 billion as compared to Rs. 1788 billion at the end of the previous quarter (State Bank of Pakistan, 2016). In the same vein, IBI reported after tax profit of Rs. 11.8 billion for the year ending December 2016 with 0.7 percent Return on Assets (ROA) and 10.6 percent Return on Equity (ROE). Fair and legitimate profit has been encouraged by Islam through risk and profit sharing mechanism. The decisions in the stock markets are made by individuals, and hence, influence of financial sophistication and emotional quotient is unavoidable. Therefore, concerning stock market participation where risk and reward are the key elements, emotional intelligence, and financial knowledge help to manage the risks. Behavioral studies suggest a strong aversion to uncertainty and loss by investors in line with the Prospect Theory (Kahneman & Tversky, 1979) that “individuals try to avoid risk in case of gains, but accept the risk to avoid losses”. However, financial literacy and emotional quotient can help to experience certain utility by investing in certain stocks.

Economic development and prosperity of individuals, society, and nation are dependent on the stock market participation (Van Rooij, Lusardi, & Alessie, 2011). Young people want to improve their lives; grown ups want to avoid poverty traps, aged people don't want to be the victims of scams and frauds. The community wants to develop and become prosperous. Therefore, there is a need to propose new drivers for stock market participation in line with Social Learning Theory (SLT), and to identify how people think and behave in a specific situation while having financial literacy. Although earlier research in the area of behavioral finance has tested the impact of education, health, gender, age, internet, wealth, political orientation, stock market literacy and trust on stock market participation (Balloch, Nicolae, & Philip, 2015; Van Rooij et al., 2011), yet there is a need to probe further and investigate the relationship of financial sophistication, emotions, and stock market participation. Emotions may have an influence on the risk perception of individuals (Virlics, 2012). Risk and uncertainty are subjectively perceived while emotions may have a supportive role in decision-making process (Virlics, 2013).

Financial literacy is one of the important factors which explain behavioral changes. A strong correlation exists between financial literacy and behavior of individuals (Cole, Sampson, & Zia, 2011). Literature supports the notion that financial competence significantly impacts the performance of stock market participants (Bateman et al., 2012). In the same vein, Wang (2009) called for future researchers to examine the impact of knowledge on risk-taking behavior. Cole et al. (2011) also suggested investigating the impact of financial literacy on the behavior.

How financial competence significantly impacts the performance of market participants

is in line with Bateman et al. (2012). Although few studies attempted to explore the impact of gender, social interaction, trust, awareness, IQ and overconfidence on stock market participation but, there remains lack of understanding of the impact of financial sophistication and emotional quotient on stock market participation. In addition to this, most of the studies in this domain have been conducted in developed countries. According to Abbas, Raja, Darr, and Bouckenooghe (2014), Asia has a significant role in the global economy because multinationals are moving towards Asian regions and Pakistan is becoming the major hub for investments. Therefore, there is a need to test the theories developed in the Western setting, to check their generalisability in Asian regions (Tsui, Nifadkar, & Ou, 2007). The rest of the study comprises literature review on financial sophistication, emotional quotient, and stock market participation. The methodology section includes population, sample selection, data collection and measures for financial sophistication, motivation, self-awareness and stock market participation. Finally, the last section presents findings, conclusion, and implications.

THEORY AND HYPOTHESES

Emotional Quotient

Emotional quotient has evolved from ‘mindfulness’ that is linked with Buddhist and Eastern spiritual systems and focuses on imagination and conscientiousness (Bishop et al., 2004). Emotions are getting attention in recent literature because high performers are differentiated by emotional intelligence at the workplace (McClelland, 1998). Emotion is a distinguishing feature among successful leaders (Boyatzis, Goleman, & Rhee, 1999; Higgs & Aitkin, 2003). The high quality of life is linked to emotional quotient (Morgan, 2003). Emotional quotient is different from intelligence quotient. Intelligence quotient measures general intelligence while emotional quotient measures emotional state of mind. Emotional quotient is the “ability to sense, understand and effectively apply the power of emotions to facilitate a high level of productivity”. Assessing emotional intelligence is an easy way to evaluate human talent (Boyatzis et al., 1999). Goleman (1998) links emotional intelligence with the workplace success which becomes more important when the workplace under consideration is the stock exchange. Goleman (1998) proposed five dimensions of emotional intelligence: self-awareness, self-regulation, motivation, empathy and social skills. However, he divides the emotional quotient into two streams; one is self-management skills (self-awareness, self-regulation, motivation) and the other, relationship management skills (empathy and social skills). This study will consider only two of them, i.e., motivation and self-awareness. These dimensions are very close to the phenomena of stock market participation.

Motivation and Stock Market Participation

Motivation has been defined as the reason for acting or behaving in a particular way or a reason for doing something. It is the passion which makes individuals work beyond any status or monetary gains. Emotional quotient might be considered individuals’ competencies, which they use essentially for organizational preference (Chiva, Alegre, & Lapedra, 2007). The relationship between emotions and stock market participation is strong. Emo-

tional intelligence implies as to how people behave and function in academic and workplace settings (Brackett, Rivers, Shiffman, Lerner, & Salovey, 2006). The fact that motivation plays a significant role in stock market participation has implications for policy makers and financial advisors. Motivation mediates the relationship between personality and job performance (Barrick, Stewart, & Piotrowski, 2002). Explaining the investment phenomenon, factors which are barriers to investment and stock market participation are driven by optimism (Puri & Robinson, 2007), intelligence level (Grinblatt, Keloharju, & Linnainmaa, 2011) ability to understand investment (Christelis, Jappelli, & Padula, 2010; Graham, Harvey, & Huang, 2009), cognitive ability (Benjamin, Brown, & Shapiro, 2013), and financial literacy (Cardak & Wilkins, 2009; Van Rooij et al., 2011). Stock market participation is immensely and heavily influenced by emotions because one has to expedite decision making to exploit gain opportunities. An individual stock market participant surely needs emotional intelligence. It highlights the need for investigating the impact of emotional competencies at the workplace (Dulewicz & Higgs, 2000). Similarly, emotional intelligence is a distinguishing attribute among high-level performers (Higgs & Aitkin, 2003). Therefore, we can formulate the following hypothesis:

H1: Motivation has a positive impact on stock market participation and drives individuals towards stock market participation.

Self-awareness and Stock Market Participation

Awareness means the state or condition of having consciousness and knowledge and “awareness of someone’s own personality, including one’s traits, feelings, and behaviors”. This dimension of emotional quotient took a long time to evolve. Gardner (1993) talks about multiple types of intelligence and intrapersonal intelligence while Goleman (1995) added social and communication skills. The literature on emotional quotient and stock market participation is vast and growing exponentially (Grinblatt et al., 2011). Complex financial markets require individuals with more intelligence and self-awareness for financial decisions.

Emotional quotient seized a new life in the aftermath of research works and bestselling book “Emotional Intelligence” by Goleman (1995). The conscious application of emotions ensures productivity (Danciu, 2010). Therefore, self-awareness can influence individuals to participate in the stock market. The above arguments provide ample support to draw the conclusion that there exists a relationship between self-awareness and stock market participation. However, an empirical inquiry must be undertaken to substantiate the association between self-awareness and stock market participation. Therefore, we formulate the hypothesis:

H2: Self-awareness has a positive impact on stock market participation and drives individuals towards stock market participation.

Financial Literacy and Stock Market Participation

Financial literacy is “the ability to make informed judgments and take effective decisions regarding the use and management of money” (Schagen & Lines, 1996, p. 2). It changes

the financial behavior of investors (Sayinzoga, Bulte, & Lensink, 2015). Financial literacy cannot merely be viewed as the ability to read and write in the language of finance and accounting. Rather, financial literacy is a concept that needs to be situated and studied in practice because the characteristics that constitute financial literacy vary with time and place (Bay, Catusus, & Johed, 2014). Investment is related to financial behavior, and financial behavior is, in turn, associated with financial literacy. People with no financial literacy face more investment problems in comparison to the people having financial literacy (Lusardi, Mitchell, & Curto, 2010). To understand the barriers to financial choice, defining and measuring impacts of financial literacy are vital (Huston, 2010). There exists a strong correlation between behavior and financial literacy (Cole et al., 2011). Therefore, there is an association between financial knowledge, wealth, and financial decisions (Jappelli & Padula, 2013). People equipped with financial information are efficient and show riskier behavior than the masses (Borden, Lee, Serido, & Collins, 2008). In the absence of financial knowledge, investors are vulnerable (Muller & Weber, 2010). Further, financial literacy positively correlates with investment diversification (Abreu & Mendes, 2010). Therefore, this study hypothesizes that:

H3: Financial literacy moderates the relationship between motivation, self-awareness, and stock market participation.

METHODOLOGY

Sample and Data Collection

The current study was a field study and data were collected through questionnaire and Google Forms. The population of the study was individual investors of Pakistan Stock Exchange (PSE). The unit of analysis was the individual investors. To capture the representative sample, non-probability convenience sampling technique was used. The data were cross-sectional while hypothetical deductive method was used. Of 600 distributed questionnaires, we received 451 completed questionnaires. Therefore, our final response rate for the 451 usable responses was 75 percent. As individuals were not sometimes able to give appropriate time during trading hours for data collection, so online questionnaire was created using Google Forms. The link to the form was mailed to those individual investors who provided their emails during our visit to Pakistan Stock Exchange. The online data collection is advantageous because under this method, individuals were free to respond to the questions in their spare time. The online data collection presents several advantages and suffers less from reporting biases (Chang & Krosnick, 2009). These features enable researchers to know what respondents want to say exactly.

Measure for Motivation

“Motivation has been defined as the reason for acting or behaving in a particular way.” This study used Goleman’s (1998) measure of emotional intelligence to measure core dimension of emotional intelligence. Motivation was measured using a five-point Likert-type scale with anchors 1 = not at all describes me, 2 = describes me a little, 3 = describes me moderately well, 4 = describes me well, 5 = describes me very well. For creating an overall

measure of motivation, the study averaged scores on all the 12 items relating to motivation. For motivation, high levels of construct communicate the high levels of scores and low levels of constructs communicate the low levels of scores.

Measure for Self-awareness

Awareness means the state or condition of having conscientiousness and knowledge. This study used Goleman's (1998) measure of emotional intelligence to measure core dimension of emotional intelligence that is self-awareness. Self-awareness was measured using a five-point Likert-type scale with anchors 1 = not at all describes me, 2 = describes me a little, 3 = describes me moderately well, 4 = describes me well, 5 = describes me very well. The study averaged scores on all 12 items relating to self-awareness, such that the high score reflected a high level of self-awareness and the low score reflected a low level of self-awareness.

Scale and Measures for Financial Literacy

The queries about financial literacy comprise three questions known as "The Big Three". The first question tests the knowledge about the interest rate, second tests the understanding of inflation and the third is a combined test of stock and stock mutual funds as well as risk diversification. One sample item is "Suppose you had Rs. 100 in a savings account and the interest rate was 2% per year. After five years, how much do you think you would have in the account if you left the money to grow?" 1 = More than Rs. 102; 2 = Exactly Rs. 102; 3 = Less than Rs. 102; 4 = Do not know; 5 = Refuse to answer. The Big Three scale was developed by (Lusardi et al., 2010).

One-Way ANOVA

The study used gender, age and trading experience as control variables because of their possible effects on stock market participation. One-way ANOVA comparing age and stock market participation revealed that there were significant differences in gender and stock market participation ($F = 13.471, p < 0.000$), age and stock market participation ($F = 2.554, p < 0.038$) and trading experience and stock market participation ($F = 17.158, p < 0.000$).

Model Summary

The following model was formulated to test the association between motivation and stock market participation:

$$SMP = \beta_0 + \beta_1(M) + \varepsilon SMP(Model1)$$

Where:

SMP = Stock market participation

M = Motivation

Statistical model to check the impact of motivation on stock market participation with moderating effects of financial literacy:

$$SMP = \beta_0 + \beta_1(M) + \beta_2(FL) + \beta_3(M)(FL) + \varepsilon SMP(Model1.1)$$

Where:

SMP = Stock market participation

M = Motivation

FL = Financial Literacy

It is evident from the above that the effect of motivation on stock market participation is not a single number. β_1 estimates the effect of motivation on stock market participation when *FL* = 0 and β_3 estimates percentage change of the effect of motivation on stock market participation as *FL* changes by one unit.

The following model is formulated to test the association between self-awareness and stock market participation:

$$SMP = \beta_0 + \beta_1(\text{Self-awareness}) + \varepsilon \text{SMP (Model 1. 2)}$$

Statistical model to check the impact of self-awareness on stock market participation with moderating effect of financial literacy:

$$SMP = \beta_0 + \beta_1(\text{Self-awareness}) + \beta_2(\text{FL}) + \beta_3(\text{Self-awareness})(\text{FL}) + \varepsilon \text{SMP (Model 1.3)}$$

Where:

SMP = Stock market participation

FL = Financial Literacy

It is evident from the equation above that the effect of self-awareness on stock market participation is not a single number. β_1 estimates the effect of self-awareness on stock market participation whereas *FL* = 0 and β_3 estimates percentage of the effect of self-awareness on stock market participation as *FL* changes by one unit.

TABLE 1
Descriptive statistics

	N	Range	Min	Max	<i>M</i>	<i>S.D</i>
SMP	451	4.00	1.00	5.00	3.5211	1.52064
Int.C	451	1.00	.00	1.00	.7871	.40978
Inflat.	451	1.00	.00	1.00	.7871	.40978
Risk.	451	1.00	.00	1.00	.7849	.41133
Self-awareness	451	4.00	1.00	5.00	3.9501	.52134
Motivation	451	4.00	1.00	5.00	3.9898	.59662
Age	451	4.00	1.00	5.00	1.9313	.84442
G	451	1.00	.00	1.00	.8337	.37276
TE	451	5.00	.00	5.00	3.1463	1.48200

TABLE 2
Mean, standard deviations, correlations, and reliabilities

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1 Age	35	.84							
2. G	.96	.17	.122**						
3. TE	3.67	1.51	.360**	.181**					
4. FL	.57	.33	.009	.028	.134**				
5. Motivation	3.98	.59	-.007	-.003	-.080	.067	(0.85)		
6. Self-awareness	3.95	.52	.066	.024	-.095*	.151**	.569**	(0.80)	
7. SMP	3.51	1.51	.134**	.171**	.360**	.250**	.095*	-.025	1

N = 451; alpha reliabilities are presented in the parentheses. G = Gender, TE = Trading

Experience, FL = Financial Literacy, SMP = Stock Market Participation, *M* = Mean,

SD = Standard Deviation. Gender type: 0 = female, 1 = male

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

TABLE 3
Results for main effect of regression analysis

		Stock Market Participation	
		β	ΔR^2
Step1	(Constant)	1.344	
	Age	-.004	
	G	.955	
	TE	.342***	0.141***
Step 2	Age	.015	
	G	.570	
	TE	.358***	
	Motivation	.450***	
	Self-awareness	-.484***	
Step 3	FL	1.17 ***	0.332***
	FL x Motivation	-.157	
	FL x Self-awareness	.784***	.231**

Note. $N = 451$: G = Gender, TE = Trading Experience, FL = Financial Literacy, SMP = Stock Market Participation, M = Mean, SD = Standard Deviation. Gender type: 0 = female, 1 = male

RESULTS

The correlation between motivation and stock market participation is positive and significant ($r = 0.095, p < 0.05$). The regression Table 3 shows the direct regression between motivation and stock market participation. R^2 is (0.450) and probability value is ($p < 0.05$). The sign of the coefficient of motivation is positive and the value is (0.450), t value is (6.136) and p value is ($p < 0.05$) which means that motivation has positive and significant relationship at 5% level of significance with stock market participation. Statistically, it can be interpreted that one unit increase in motivation will increase (0.450) units in stock market participation other things remaining the constant. The interaction term of motivation and financial literacy (FL x Motivation) is insignificant and negative for stock market participation ($\beta = -0.157, p > .05$). Financial literacy does not moderate the relationship between motivation and stock market participation. The correlation between self-awareness and stock market participation is negative and insignificant as “ r ” value was ($r = -.025, p > .05$). The regression Table 3 shows the direct regression between self-awareness and stock market participation. R^2 is (0.298) and probability value ($p < 0.05$). The sign of the coefficient of self-awareness is negative and the value is (-0.484), t value is (-3.857) and p value is ($p < 0.05$) which means that self-awareness has negative and significant relationship at 5% level of significance with stock market participation. Statistically, it can be interpreted that one unit increase in self-awareness will cause decrease (0.484) units in stock market participation while other things remain constant. The interaction term of self-awareness and financial literacy (FL x Self-awareness) is significant for stock market participation ($\beta = 0.784, p < 0.05$), which means financial literacy moderates the relationship between self-awareness and stock market participation.

DISCUSSION

The empirical result of the study supports the hypothesis that there is a positive association between motivation and stock market participation that is per social learning theory. As emotional intelligence describes how people behave and function at a workplace and in academic settings (Brackett et al., 2006); therefore, learning through observation and practice induces the individuals to participate in the stock market. The literature on self-awareness shows a positive association between self-awareness and stock market participation. However, the empirical results of this study are counter to expectation and show a negative relationship with stock market participation. As far as the moderating impact of financial literacy is concerned, it does not moderate the relationship between motivation and stock market participation. Of course, it moderates the relationship between self-awareness and stock market participation. These results are in line with the theory that individual risk-taking ability depends upon one's knowledge regarding rules of investment, wealth level and gender (Dulebohn, 2002). Similarly, financial competence significantly affects the performance of market participants (Bateman et al., 2012). The investor's financial literacy is positively correlated with investment diversification (Abreu & Mendes, 2010). Individuals with poor financial literacy are more prone to lack confidence when interpreting credit terms and exhibiting confusion over financial concepts. They are also less likely to engage in behavior which may help them to improve their awareness of the credit markets (Disney & Gathergood, 2013).

CONCLUSION

Our findings thus provide sufficient empirical evidence that stock market participation is positively influenced by motivation while negatively affected by self-awareness. No doubt, conscious application of emotions ensures productivity (Danciu, 2010). Emotional intelligence is gaining immense importance due to its critical association with today's dynamic environment (Conte, 2005). Financial literacy is a likely path between motivation, self-awareness and stock market participation. Individuals apply acquired competences during social interactions between individuals and groups (Sharma, 2012).

Islamic capital markets as an alternative to conventional markets are free from interest (*ribā*), gambling (*maysir*), and absolute uncertainty (*gharrar*) (Azmat, Skully, & Brown, 2014). Therefore, investor's financial literacy is positively correlated with participation in conventional as well as Islamic capital markets. Results of the study are in line with the Western settings and can be well-generalized to the Pakistani settings. This study has implications at the micro and macro level for individuals, industrial managers, Sharī'ah scholars, Islamic financial institutions, and government. Currently, stock market participation is complemented with a sizable financially literate Muslim population with the ambition of 'One Belt, One Road'. Therefore, the future of stock market participants will shine brighter than ever. However, there is a need to structure a trading system which may reduce the impact of emotions on stock market participation. Family background, resources, and parent's financial literacy were beyond the scope of the current study. Future research may investigate the impact of Family Resource Management Theory (FRMT).

REFERENCES

- Abbas, M., Raja, U., Darr, W., & Bouckenooghe, D. (2014). Combined effects of perceived politics and psychological capital on job satisfaction, turnover intentions, and performance. *Journal of Management*, *40*(7), 1813-1830. doi: <https://doi.org/10.1177/0149206312455243>
- Abreu, M., & Mendes, V. (2010). Financial literacy and portfolio diversification. *Quantitative Finance*, *10*(5), 515-528. doi: <https://doi.org/10.1080/14697680902878105>
- Azmat, S., Skully, M., & Brown, K. (2014). The Shariah compliance challenge in Islamic bond markets. *Pacific-Basin Finance Journal*, *28*, 47-57. doi: <https://doi.org/10.1016/j.pacfin.2013.11.003>
- Balloch, A., Nicolae, A., & Philip, D. (2015). Stock market literacy, trust, and participation. *Review of Finance*, *19*(5), 1925-1963. doi: <https://doi.org/10.1093/rof/rfu040>
- Barrick, M. R., Stewart, G. L., & Piotrowski, M. (2002). Personality and job performance: Test of the mediating effects of motivation among sales representatives. *Journal of Applied Psychology*, *87*(1), 43-51. doi: <https://doi.org/10.1037/0021-9010.87.1.43>
- Bateman, H., Eckert, C., Geweke, J., Louviere, J., Thorp, S., & Satchell, S. (2012). Financial competence and expectations formation: Evidence from Australia. *Economic Record*, *88*(280), 39-63. doi: <https://doi.org/10.1111/j.1475-4932.2011.00766.x>
- Bay, C., Catusus, B., & Johed, G. (2014). Situating financial literacy. *Critical Perspectives on Accounting*, *25*(1), 36-45. doi: <https://doi.org/10.1016/j.cpa.2012.11.011>
- Benjamin, D. J., Brown, S. A., & Shapiro, J. M. (2013). Who is 'behavioral'? Cognitive ability and anomalous preferences. *Journal of the European Economic Association*, *11*(6), 1231-1255. doi: <https://doi.org/10.1111/jeea.12055>
- Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., ... & Devins, G. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice*, *11*(3), 230-241. doi: <https://doi.org/10.1093/clipsy.bph077>
- Borden, L. M., Lee, S. A., Serido, J., & Collins, D. (2008). Changing college students' financial knowledge, attitudes, and behavior through seminar participation. *Journal of Family and Economic Issues*, *29*(1), 23-40. doi: <https://doi.org/10.1007/s10834-007-9087-2>
- Boyatzis, R. E., Goleman, D., & Rhee, K. (1999). Clustering competence in emotional intelligence: Insights from the Emotional Competence Inventory (ECI). In R. Bar-On & J. Parker (Eds.), *Handbook of emotional intelligence*. San Francisco, CA: Jossey-Bass.
- Brackett, M. A., Rivers, S. E., Shiffman, S., Lerner, N., & Salovey, P. (2006). Relating emotional abilities to social functioning: A comparison of self-report and performance measures of emotional intelligence. *Journal of Personality and Social Psychology*, *91*(4), 780-795. doi: <https://doi.org/10.1037/0022-3514.91.4.780>
- Cardak, B. A., & Wilkins, R. (2009). The determinants of household risky asset holdings: Australian evidence on background risk and other factors. *Journal of Banking & Finance*, *33*(5), 850-860. doi: <https://doi.org/10.1016/j.jbankfin.2008.09.021>

- Chang, L., & Krosnick, J. A. (2009). National surveys via RDD telephone interviewing versus the internet comparing sample representativeness and response quality. *Public Opinion Quarterly*, 73(4), 641-678. doi: <https://doi.org/10.1093/poq/nfp075>
- Chiva, R., Alegre, J., & Lapiedra, R. (2007). Measuring organisational learning capability among the work-force. *International Journal of Manpower*, 28(3/4), 224-242. doi: <https://doi.org/10.1108/01437720710755227>
- Christelis, D., Jappelli, T., & Padula, M. (2010). Cognitive abilities and portfolio choice. *European Economic Review*, 54(1), 18-38. doi: <https://doi.org/10.1016/j.euroecorev.2009.04.001>
- Cole, S., Sampson, T., & Zia, B. (2011). Prices or knowledge? What drives demand for financial services in emerging markets? *The Journal of Finance*, 66(6), 1933-1967. doi: <https://doi.org/10.1111/j.1540-6261.2011.01696.x>
- Conte, J. M. (2005). A review and critique of emotional intelligence measures. *Journal of Organizational Behavior*, 26(4), 433-440. doi: <https://doi.org/10.1002/job.319>
- Danciu, E. L. (2010). Methods of developing children's emotional intelligence. *Procedia-Social and Behavioral Sciences*, 5, 2227-2233. doi: <https://doi.org/10.1016/j.sbspro.2010.07.440>
- Disney, R., & Gathergood, J. (2013). Financial literacy and consumer credit portfolios. *Journal of Banking & Finance*, 37(7), 2246-2254. doi: <https://doi.org/10.1016/j.jbankfin.2013.01.013>
- Dulebohn, J. H. (2002). An investigation of the determinants of investment risk behavior in employer-sponsored retirement plans. *Journal of Management*, 28(1), 3-26. doi: <https://doi.org/10.1177/014920630202800102>
- Dulewicz, V., & Higgs, M. (2000). Emotional intelligence: A review and evaluation study. *Journal of Managerial Psychology*, 15(4), 341-372. doi: <https://doi.org/10.1108/02683940010330993>
- Gardner, H. (1993). *Frames of mind: The theory of multiple intelligences*. New York, NY: Basic Books.
- Goleman, D. (1995). *Emotional intelligence*. New York, NY: Bantam Books.
- Goleman, D. (1998). *Working with emotional intelligence*. New York, NY: Bantam Books.
- Graham, J. R., Harvey, C. R., & Huang, H. (2009). Investor competence, trading frequency, and home bias. *Management Science*, 55(7), 1094-1106. doi: <https://doi.org/10.1287/mnsc.1090.1009>
- Grinblatt, M., Keloharju, M., & Linnainmaa, J. (2011). IQ and stock market participation. *The Journal of Finance*, 66(6), 2121-2164. doi: <https://doi.org/10.1111/j.1540-6261.2011.01701.x>
- Higgs, M., & Aitken, P. (2003). An exploration of the relationship between emotional intelligence and leadership potential. *Journal of Managerial Psychology*, 18(8), 814-823. doi: <https://doi.org/10.1108/02683940310511890>
- Huston, S. J. (2010). Measuring financial literacy. *Journal of Consumer Affairs*, 44(2), 296-316. doi: <https://doi.org/10.1111/j.1745-6606.2010.01170.x>

- Jappelli, T., & Padula, M. (2013). Investment in financial literacy and saving decisions. *Journal of Banking & Finance*, 37(8), 2779-2792.
doi: <https://doi.org/10.1016/j.jbankfin.2013.03.019>
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263-291. doi: <https://doi.org/10.2307/1914185>
- Karim, B. A., Lee, W. S., Karim, Z. A., & Jais, M. (2012). The impact of subprime mortgage crisis on Islamic banking and Islamic stock market. *Procedia-Social and Behavioral Sciences*, 65, 668-673.
doi: <https://doi.org/10.1016/j.sbspro.2012.11.182>
- Lusardi, A., Mitchell, O. S., & Curto, V. (2010). Financial literacy among the young. *Journal of Consumer Affairs*, 44(2), 358-380.
doi: <https://doi.org/10.1111/j.1745-6606.2010.01173.x>
- McClelland, D. C. (1998). *Assessing competencies: Use of behavioral interviews to assess competencies associated with executive success*. Boston, MA: McBer & Company.
- Morgan, P. (2003). Emotional intelligence and performance. *The Coach*, 1, 27-30.
- Muller, S., & Weber, M. (2010). Financial literacy and mutual fund investments: Who buys actively managed funds? *Schmalenbach Business Review*, 62, 126-153.
- Naughton, S., & Naughton, T. (2000). Religion, ethics and stock trading: The case of an Islamic equities market. *Journal of Business Ethics*, 23(2), 145-159.
doi: <https://doi.org/10.1023/A:1006161616855>
- Puri, M., & Robinson, D. T. (2007). Optimism and economic choice. *Journal of Financial Economics*, 86(1), 71-99. doi: <https://doi.org/10.1016/j.jfineco.2006.09.003>
- Robertson, H. M. (1933). *Aspects of the rise of economic individualism*. New York, NY: Cambridge University Press.
- Sayinzoga, A., Bulte, E. H., & Lensink, R. (2015). Financial literacy and financial behaviour: Experimental evidence from rural Rwanda. *The Economic Journal*, 126(594), 1571-1599. doi: <https://doi.org/10.1111/ecoj.12217>
- Schagen, S., & Lines, A. (1996). *Financial literacy in adult life: A report to the Natwest group charitable trust*. Upton Park, UK: National Foundation of Educational Research.
- Sharma, R. (2012). Measuring social and emotional intelligence competencies in the Indian context. *Cross Cultural Management: An International Journal*, 19(1), 30-47.
doi: <https://doi.org/10.1108/13527601211195619>
- State Bank of Pakistan. (2016). *Islamic Banking Bulletin*. State Bank of Pakistan, Karachi, Pakistan.
- Tsui, A. S., Nifadkar, S. S., & Ou, A. Y. (2007). Cross-national, cross-cultural organizational behavior research: Advances, gaps, and recommendations. *Journal of Management*, 33(3), 426-478. doi: <https://doi.org/10.1177/0149206307300818>
- Van Rooij, M., Lusardi, A., & Alessie, R. (2011). Financial literacy and stock market participation. *Journal of Financial Economics*, 101(2), 449-472.
doi: <https://doi.org/10.1016/j.jfineco.2011.03.006>
- Virlics, A. (2012). Risk perception in investment decision making. Paper presented at *the International Conference in Economics and Administration*, June 8-9, University of Bucharest, Bucharest, Romania.

- Virlics, A. (2013). Investment decision making and risk. *Procedia Economics and Finance*, 6, 169-177. doi: [https://doi.org/10.1016/S2212-5671\(13\)00129-9](https://doi.org/10.1016/S2212-5671(13)00129-9)
- Wang, A. (2009). Interplay of investors' financial knowledge and risk taking. *The Journal of Behavioral Finance*, 10(4), 204-213.
doi: <https://doi.org/10.1080/15427560903369292>
