



RESEARCH PAPER

The Impact of Financial Socialization, Cognitive Ability and Self-efficacy on Financial Literacy of Investors in Pakistan

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ABSTRACT

The purpose of our study is to investigate the impact of financial socialization, cognitive ability, and self-efficacy on financial literacy of investors in Pakistan. Data was collected from 429 individual investors and were analysed with structural equation modelling on SmartPLS software. This study has used convenience sampling technique for the collection of data. The participation of male investors as compare to female investors is high in Pakistan stock market. The main results of our study exhibit that self-efficacy and cognitive ability positively influences financial literacy of investors, while financial socialization has no impact on financial literacy. Policy makers can use this study to make some policies to reduce gender gap of investor in stock market of Pakistan.

Introduction

Financial literacy is becoming a central focus of many organizations like community interest groups, banks, academia, and governments (Morgan & Trinh, 2019). The knowledge of getting financial information, usage of such financial information and finally processing such information to others for their benefits is called financial literacy (Stolper & Walter, 2017; Bannier & Neubert, 2016). More specifically, individuals can use this financial information for own use and for the use of the society (Lusardi & Mitchell, 2011).

Financial literacy is the major issue of all over the world. According to the study of Klapper et al. (2013), financial crisis was occurred due to low level of

financial knowledge of consumers. In the financial crisis of 2007-2008, consumers had no idea how to use complex type of financial products that were prevailing in the financial markets. Similarly, Morgan and Trinh (2019) described that the problem of financial literacy not only exist even in developing countries but also it is a serious concern in advanced economies too. It is examined by Murendo and Mutsonziwa (2017) that financial literacy level is high in male segment of the population, while low for female population in the world. Additionally, it is suggested by the study of Bruhn et al. (2013) that the level of financial literacy in middle age younger and old ages is low, while similar remains high in middle age. Most importantly, the study of Many investors are not well informed about the basic knowledge of financial concepts. Therefore, they cannot take effective and efficient financial decisions. So, this study is conducted to check whether such circumstances also prevail for the sample of individual investors in Pakistan.

The stock market of Pakistan is highly volatile and badly affects through external shocks; but it could recover very soon after shocks. This market has attracted more investors recently (Rasheed et al., 2018). It is necessary to study the financial literacy of investors in Pakistan and other factors that affect financial literacy.

Section 2 will briefly discuss literature on financial literacy and its association with other variables. Data collection of the study and measurement of variables will be studied in section 3. Data analysis portion will contain section 4. Finally, conclusion of the study, policy implications and areas of future research will be studied in section 5.

Literature Review

The existing study is supported by theory of consumer socialization (Moschis & Churchill, 1978) and theory of planned behaviour (Ajzen, 1991). Theory of consumer socialization suggests that as consumers grow up; their attitudes, knowledge and skills develop. Here, skills, knowledge and attitude are related to financial concepts. Similarly, theory of planned behaviour examine that individuals copy the behaviour and attitudes of other individuals to perform a task or any activity.

Financial Socialization and Financial Literacy

Financial socialization is the process of realizing knowledge of financial concepts, skills and attitudes that are transmitted from peers, parents, media, schooling, and other family members to other individuals (Ward, 1974). The study of examined that financial socialization i.e peers, parents, media, and education strongly affect financial literacy and ultimately leads to financial behaviour (Sundarasan et al., 2016; Sohn et al., 2012). Similarly, Grohmann et al. (2015) carried out in mediation analysis that adults' financial literacy is positively affected by family and schooling. Moreover, the development of understanding financial

literacy level of individual is built upon the approach of financial socialization (Gudmunson & Danes, 2011).

Financial Literacy and Cognitive Ability

Cognitive ability of an individual refers to the ability of acquisition new knowledge, making reasoning based on knowledge, and solving any problem on such knowledge (Flavell, 1999). The study of Munoz-Murillo et al. (2020) investigated that cognitive ability is the key determinant of financial literacy. More specifically, cognitive ability predicts the cost and time of getting extra financial literacy (Lusardi et al., 2017). Individual spends a lot of time and money to achieve financial knowledge. Such cost can be reduced if individual has higher cognitive ability. The study of Delavande et al. (2008) found positive relationship among cognitive ability and financial literacy. Furthermore, strong positive association between financial literacy and cognitive ability was found by Lusardi et al. (2015).

Self-efficacy and Financial Literacy

The ability of individual in achieving certain task or reaching a specified objective in present or future situation is called self-efficacy (Parker et al., 2012). Here, the task is any financial task, or the objective indicates any financial objective in present or future. Lusardi et al. (2015) found in their study that older individuals of the society always achieve better position in financial literacy due higher level of self-efficacy. Similarly, Farrell et al. (2016) investigated in their study that mostly Australian women performed well in making financial decisions because of self-confidence (self-efficacy). So, positive association prevails between financial literacy and self-efficacy of individuals.

Conceptual Framework

The existing literature on financial literacy has well observed that financial socialization (Ameliawati & Setiyani, 2018), self-efficacy (Lusardi & Tufano, 2009), and cognitive ability (Skagerlund et al., 2018) have effect on financial literacy of individuals. The theory of planned behaviour and consumer socialization theory also support such relationship somehow so, conceptual framework of our study is given as:

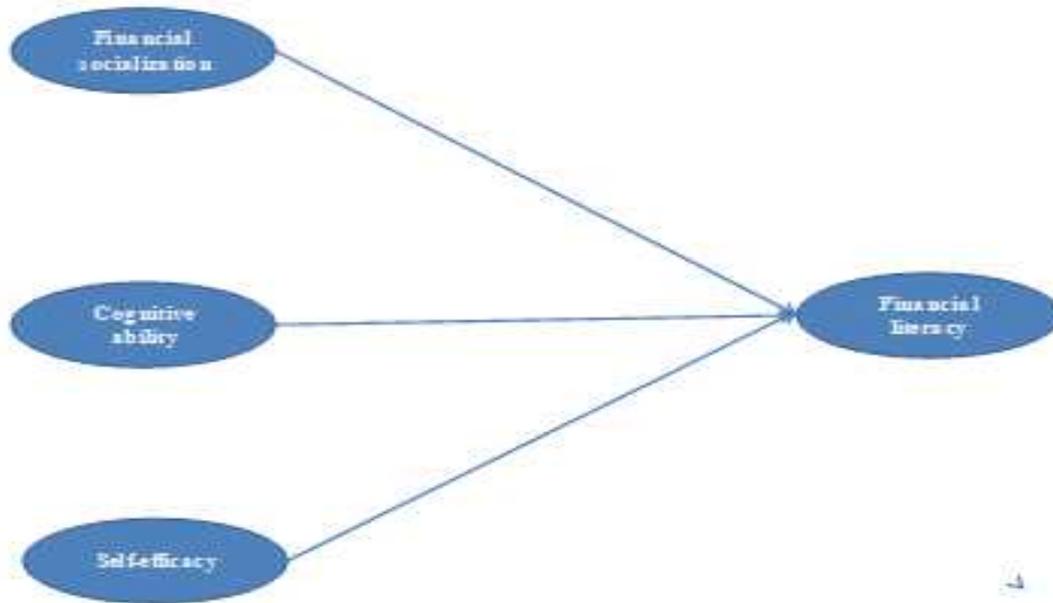


Figure 1 Conceptual Framework

Material and Methods

In this study data is collected from individual investors of different cities of Pakistan (Peshawar, Islamabad, Lahore, and Karachi). Online questionnaire was distributed to 550 individual investors through their e-mails in which 429 investors returned complete responses of the questions. Response rate of completely returned questionnaire was 78% of our study. Non-probability convenience-based sampling technique was used for data collection. Furthermore, this study has used quantitative approach and employed structural equation modelling (SEM) for data analysis on SmartPLS 3.

Measurement of Variables

In our study financial literacy is dependent variable, while self-efficacy, cognitive ability and financial socialization are independent variables. The items and their measurements are given next.

Financial Literacy (FL): FL is dependent variable in our study and measured on 5-likert scale as from “strongly agree (5)” to “strongly disagree (1)”. Six items were selected from Grohmann (2018) and Xia et al. (2014). Such items were then modified accordingly for easy understanding of respondents.

Self-Efficacy (SE): Five items were selected from Skagerlund et al., (2018); Danes and Haberman (2007), and Forbes and Kara (2010). These items were

measured with five (5) Likert scale from “strongly agree (5)” to “strongly disagree (1)”.

Cognitive Ability (CA): for the measurement of we have selected four indicators from Fagerlin et al., (2007). These indicators were analysed from “poor (1)” to “Excellent (5)” with 5-Likert scale.

Financial Socialization (FS): Four items are taken from Shim et al., (2010) and were modified accordingly for FS. These items were then analysed with 5-likert scale from “strongly disagree (1)” to “strongly agree (5)” with 5-likert scale.

Data Analysis

For data analysis we have performed structural equation modelling in SmartPLS software (version 3.2.4) (Ringle et al., 2020). General overview of the respondents’ profile is given first then the results of structural equation modelling are given in detail.

Respondents’ Profile

The profile of respondents is provided in Table 1. It has briefly discussed the gender, monthly income, marital status, employment status, educational status, age and living arrangements according to their frequencies and percentages.

Table 1
Respondents’ Profile (No. of observations=429)

		Frequency	Percent
Gender	Female	64	14.9%
	Male	365	85.1%
Age	16 to 25years	72	16.8%
	26 to 35years	174	40.6%
	36 to 45years	101	23.5%
	46 to 55years	57	13.3%
	56 to 65years	22	5.1%
	66+ years	3	0.7%
Employment Status	Government employee	102	23.8%
	Self-employed	104	24.2%
	Full-time worker	185	43.1%
	Part time worker	26	6.1%
	Retired	12	2.8%
Educational Status	Intermediate	35	8.2%
	Undergraduate	182	42.4%
	Graduate/Post-Graduate	212	49.4%
Marital Status	Single	147	34.3%
	Married	270	62.9%
	Divorced	6	1.4%

	Widow/Widower	6	1.4%
Monthly Income	15,000-30,000	82	19.1%
	31,000-45,000	96	22.4%
	46000-60000	70	16.3%
	61000-75000	64	14.9%
	76000-90000	53	12.4%
	91,000-120,000	40	9.3%
	120,000-150,000	24	5.6%
Living Arrangements	Live Alone	36	8.4%
	Living with spouse/partner	135	31.5%
	Live parents (live in my parents' home)	72	16.7%
	Live other (live with other family, friends, or roommates)	186	43.4%

Structural Equation Modelling (SEM)

SEM is the most powerful tool that investigates the relationship among constructs and their items with each other (Kline, 2015). SEM consists of measurement model and structural model as discussed next.

Evaluation of Measurement Models

In the measurement model we will check the discriminant validity, internal consistency reliability and convergent validity of the constructs and items.

Individual Indicator Reliability

Each indicator relationship with relevant construct is called individual indicator reliability (Hair et al., 2014). Outer loadings values are used for individual indicator reliability and should be equal to or higher than 0.708 (Fornell & Larcker, 1981). In Table 2 all values of items are greater than 0.708 that indicates individual indicator reliability.

Table 2
Individual Indicators Reliability

	CA	FL	FS	SE
C1	0.768			
C2	0.835			
C3	0.858			
C4	0.853			
FL1		0.729		
FL2		0.801		
FL3		0.748		
FL4		0.807		

FL5	0.801	
FL6	0.769	
PE1		0.839
PE2		0.823
PE3		0.732
PE4		0.712
SE1		0.708
SE2		0.759
SE3		0.900
SE4		0.879
SE5		0.860

Internal Consistency Reliability

The measurement of a construct by its assigned indicators is called internal consistency reliability. For internal consistency reliability two different measures are used i.e. Cronbach's alpha and composite reliability (CR). According to Hair et al. (2014) the values of CR and Cronbach's alpha more than 0.7 are required for internal consistency reliability. In Table 3 all values are more than the value of 0.7.

Table 3
Internal Consistency Reliability

Construct	Cronbach's Alpha	Composite Reliability (CR)
CA	0.848	0.898
FL	0.869	0.901
FS	0.786	0.859
SE	0.881	0.913

Convergent Validity

Convergent validity of each construct in model is determined by average variance extracted (AVE) value. According to Henseler et al. (2016) the value of AVE>0.5 is considered acceptable for convergent validity. Here, all values are greater than 0.5, which shows convergent validity of each construct (see Table 4).

Table 4
Convergent Validity

Constructs	Average Variance Extracted (AVE)
CA	0.688
FL	0.603
FS	0.606
SE	0.680

Discriminant Validity

Discriminant validity is basically the degree of difference of one construct from another construct in the model (Hair et al., 2017). We have considered Heterotrait-Monotrait ratio (HTMT) for discriminant validity of constructs, because of giving more accurate results than other method (Henseler et al., 2016). All the values are very low than 0.9, that shows constructs' discriminant validity (see Table 5).

Table 5: Heterotrait-Monotrait Ration (HTMT)

Construct	CA	FL	FS	SE
CA				
FL	0.509			
FS	0.594	0.354		
SE	0.584	0.685	0.433	

Evaluation of Structural Model

The association between different constructs of the study is investigated in structural model (Hair et al., 2014). Model fit, predictive relevance of the model, effect size and path coefficients are tested in structural model evaluation.

Path Coefficients

Path coefficients exhibit the strength of the relationship between two variables (Wixom & Watson, 2001).

**Table 6
Path Coefficients**

Constructs	Original Sample	Sample Mean	Standard Deviation	T-value	P-Value
CA -> FL	0.191	0.190	0.051	3.736	0.000
FS -> FL	0.038	0.041	0.052	0.729	0.467
SE -> FL	0.510	0.511	0.048	10.709	0.000

In Table 6 it is observed that FL is strongly influenced by SE (0.51, $p < 0.001$) and CA (0.190, $p < 0.001$), while the role of FS (0.038, $p > 0.10$) is insignificant for FL. More specifically, it can be concluded that one percent change in CA may get 19.1% change in FL and similar for others.

The result of control variables showed that income and gender have positive significant on financial literacy, while the effect on financial literacy by education was found negative for investors in Pakistan. The influence of age, employment status, living arrangements and marital status is insignificant.

Coefficient of Determination (R2 value)

R-square value suggests that 44.4% of change is occurred in FL due to CA, FS and SE, while 55.6% is occurred in FL due to some other variables which are not included in our study. Similarly, 44% of variation in financial literacy occurs due to FS, CA, and SE. According to Chin (1998) our model is moderate because calculated R-square value > 0.33 value. Moreover, the value of adjusted R-square (0.431) is also low as compare to R-square (0.444) (see Table 7).

**Table 7
Coefficient of Determination**

Constructs	R-Square	R-Square Adjusted
FL	0.444	0.431

Effect Size (f2)

The effect size (f2) proposes the effect of each exogenous construct on endogenous construct (Hair et al., 2014). The effect size of CA (0.042) and FS (0.002) on FL is also smaller, while medium effect size of SE (0.328) on FL is found (Cohen, 1988) (see Table 8).

Table 8: Effect Size (f2)

Construct	FL
CA	0.042
FL	
FS	0.002
SE	0.335

Model Fit

Model fit is achieved from standardized difference of observed correlation and predicted correlation. In this study the value of Standardized Root Mean Square Residual (SRMR, 0.064) is less than 0.08 value, which clearly point out the fit of good model (Henseler et al., 2016).

Assessing Q2 Values

The Stone-Geisser Q2 value is employed as for the relevance of predicting endogenous variable (Stone, 1974; Geisser, 1974). In this study the Q2 values of FL is 0.236, which is above zero (0) for FL that shows the model has predictive relevance for endogenous variable (see Table 9).

**Table 9
Cross-validated redundancy (Q2)**

Constructs	Q ²
FL	0.235

Conclusion

Financial literacy is becoming a central focus of many organizations like community interest groups, banks, academia, and governments (Morgan & Trinh, 2019). This study has used quantitative approach and exploratory in nature. Data is taken from 429 individual investors through online survey with convenience base sampling technique. Structural equation modeling was used for data analysis with Smart PLS.

Our results described that the participation of female investors is very low in stock market of Pakistan, while high for male segment of the country. Similarly, the married individuals are more active in participating in stock market as compare to single and divorced individuals. Furthermore, the education level of investors is graduation mostly, while investors having intermediate level education are low.

This study found significant positive impact of gender of respondents and income on financial literacy. Same results were also produced by Murendo and Mutsonziwa (2017), and Dewanty and Isbanah (2018) for gender and income relationship with financial literacy, while the effect on financial literacy by education was found negative for investors in Pakistan. The influence of age, employment status, living arrangements and marital status is insignificant here (Morgan & Trinh, 2019; Pires and Quelhas, 2015).

The impact of our main variables i.e cognitive ability, financial socialization and self-efficacy on financial literacy was also observed. Our outcomes illustrated that financial literacy is insignificantly influenced by financial socialization. Similar results were produced by Jorgensen and Savla (2010). Additionally, financial literacy is positively influenced by cognitive ability and self-efficacy. Also, these results are hold by Hastings et al. (2013) and Skagerlund et al., (2018).

Policy Implications

This study provides some insights for policy makers and researchers that must be further investigated. Based on this study policy makers may make policies to enhance the level of financial literacy among investors and as well other segments of the society. Similarly, gender differences also prevail in the stock market of Pakistan. Policy maker should make some policies to minimize these gender differences among investors.

Researchers can further investigate the financial literacy and financial behaviour through their one by one item relationship. Also, they can scrutinize the effect of other variables on financial literacy and financial behaviour which are not taken in our research study. Future research studies can be carried out for other segments of the society like managers, bankers, brokers, Govt employees, school, and college teachers and finally the students.

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