# Influence of Cognitive Ability, Money Management Skills, and Cultural Norms on the Financial Literacy of Women Working in the Cottage Industry

Aqsa Fazal, Hadi Hassan Khan\*, Bilal Sarwar, Wahab Ahmed, Noor Muhammad and S.M. Nabeel ul Haq

#### ABSTRACT

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**Research aims**: This study investigates the impact of cognitive ability, money management skills, and cultural norms on the financial literacy of women working in the cottage industry.

**Design/Methodology/Approach**: The study employs a crosssectional research design. Quantitative data were collected through questionnaires and analysed using Smart-PLS.

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<sup>\*</sup> Corresponding Author: Hadi Hassan Khan is an Assistant Professor at the Department of Management Sciences, Faculty of Management Sciences, Balochistan University of Information Technology Engineering & Management Sciences, Quetta, Balochistan, Pakistan. Email: hadihassankhan@gmail.com.

Aqsa Fazal is Master of Science Scholar at the Department of Management Sciences, Balochistan University of Information Technology Engineering & Management Sciences, Quetta, Balochistan, Pakistan. Email: aqsa.fazal95@gmail.com

Bilal Sarwar is an Assistant Professor at the Department of Management Sciences, Faculty of Management Sciences Balochistan University of Information Technology Engineering & Management Sciences, Pakistan. Email: bilal.sarwar@buitms.edu.pk

Wahab Ahmed is a Lecturer at the Department of Management Sciences, Muslimbagh Campus, Balochistan University of Information Technology Engineering & Management Sciences, Quetta, Balochistan, Pakistan. Email: wahhabahmed2017@gmail.com

Noor Muhammad is an Associate Professor at the Department of Management Sciences, Faculty of Management Sciences, Balochistan University of Information Technology Engineering & Management Sciences, Pakistan. Email: noor.muhammad@buitms.edu.pk

SM Nabeel ul Haq is an Assistant Professor at the Department of Economics, Faculty of Management Sciences Balochistan University of Information Technology Engineering & Management Sciences, Pakistan. Email: sm.nabeel@buitms.edu.pk

**Research findings**: The results revealed that cognitive ability and money management was positively related to financial literacy. There was also substantial evidence to demonstrate the negative effect of cultural norms on financial literacy.

**Theoretical contribution/Originality**: The findings provide empirical evidence on the importance of cognitive ability, money management skills, and cultural norms on financial literacy among women in the cottage industry.

**Practitioner/Policy implication**: The government should emphasises policies that not only provide education, but also training and programmes that would improve cognitive functions. Cultural norms need to be changed in such a way that females being held accountable for financial decisions from an early age. There is a need to recognise, inspire, and empower women in the field of the cottage industry.

**Research limitation/Implications**: This study uses a cross-sectional research design. Future researches can supplement the existing study by conducting studies with longitudinal research design and interviews.

**Keywords**: Cottage Industry, Cognitive Ability, Culture, Financial Literacy, Money Management Skills, Sustainability Development **JEL Classification**: C83, C88, G53

## 1. Introduction

Cottage industries are referred to as small scale enterprises that produce local hand-made products and employ a small number of skilled workers. Despite being small, cottage industries play an important role in the economic development of developing countries, as they provide employment opportunities to the local communities (Aslam, 2013). These establishments help in reducing poverty, since they offer economic prospects for the poor and middle-income groups (Soriano & Dobon, 2009). In Pakistan alone, the total number of people employed in this sector is recorded at 80 per cent of total employment opportunities to the country's population (Hasan et al., 2017). Since the cottage industry is spread across the entire country, it can serve as an agent for overcoming regional economic disparities and distributing national income in a more efficient and equitable manner.

Previous literature (Tasneem & Biswas, 2016; Yunis et al., 2019) has acknowledged the importance of the cottage industry as an instrument to improve the lives of women. Cottage industry development helps bring women out of poverty as well as improve their own wellbeing and that of their families (Raziq et al., 2010; Dar et al., 2017). In developing countries such as Pakistan, women have a significantly lower labour participation rate than men in formal employment (Chowbey, 2016). Thus, it is not surprising that they are predominantly found in the cottage industry. Despite the importance of cottage industry development in reducing the inequalities between genders and improving sustainable development, some scholars have challenged these findings. They argued that cottage industry development is not able to enhance women's wellbeing, social status, and incomes due to poor educational backgrounds with little experience as well as lack of management and financial skills (Junejo & Chand, 2008; Mustafa et al., 2016).

Within the literature, financial literacy has become a significant concern of academic research, community groups, individuals, and governments worldwide (Morgan & Trinh, 2019). Adoption of national strategies that aim to reduce gender inequalities should focus on financial literacy, as these knowledge and skills are critical to an individual when making decisions, especially in day-to-day activities such as making a savings decision or investing to achieve a predetermined objective (Faulkner, 2017). Murendo and Mutsonziwa (2017) evaluated the level of financial literacy between genders and found that such knowledge and skills are higher amongst males compared to females. Similar results were also recorded in Brazil (Potrich et al., 2015), Hong Kong (Yu et al., 2015), and India (Rai et al., 2019). Low financial literacy among women may hinder them from making responsible financial decisions, leaving the cottage industry at a potential disadvantage (Lusardi et al., 2014; Tasneem & Biswas, 2016). While many studies have empirically shown the link between financial literacy and genders, relatively few have examined the factors that affect financial literacy. Using the augmented stochastic life cycle model, Lusardi and Mitchell (2017) found that financial literacy among U.S. individuals can be attributed to financial knowledge. In another study, Haliassos et al. (2020) argued that financial knowledge built through social interactions act as a mediating effect on financial literacy. Several studies (Kadoya & Khan, 2020; Gill & Prowse, 2016) have investigated the role of psychology in determining financial literacy, and found that confidence, trust and anxiety about life in the future are some of the factors affecting it.

This study expands on the previous empirical works by investigating the determinants of financial literacy among women involved in the cottage industry. To the best of our knowledge, no study has thus far comprehensively examined the factors affecting financial literacy in Pakistan's cottage industry. As there is a high participation of women in the cottage industry, it is important to identify how their financial literacy could be developed. The extent of their financial literacy could somehow affect the development of the cottage industry in future. Given their exposure to a multitude of uninsured risks and uncertainties, they are more prone to the adverse affects of poor financial planning. This study extends the existing literature (Alkan et al., 2020; Sharif et al., 2020) by incorporating additional factors, namely, cognitive ability, money management skills and cultural norms.

The organisation of this paper is as follows. Section 2 discusses the theoretical dimensions and prior research works which were conducted in the area. Section 3 explains the methodology while Section 4 reports the analysis. Section 5 discusses the findings and Section 6 concludes the paper.

#### 2. Literature Review and Hypotheses Development

#### 2.1 Financial Literacy

Empirical literature shows that there is no specific definition of financial literacy, with certain studies including information on financial literacy and others affirming that individuals must have the option to settle on sound financial decisions to be financially literate (Hung et al., 2009; Huston, 2010). Financial literacy can be described as having two dimensions: the knowledge of financial concepts and the skills to use that knowledge in making sound financial decisions. Financial literacy is more than just the convenience of knowing financial terms; it is an essential tool that individuals need to survive in today's modern society (Jacob et al., 2000). Individuals who are more financially literate tend to make fewer mistakes in financial decisions and can achieve better financial conditions (Meier & Sprenger, 2013). Within the context of small scale businesses, financial literacy is argued to be important, since it enriches the owners' decision-making resources. Financially literate owners are more capable in financial planning, ensuring proper sourcing and chanelling of funds (García-Pérez-de-Lema et al., 2021; Adam et al., 2017), allowing them to alleviate financial constraints. For this reason, it is important to investigate the mechanisms that have to be promoted to enhance the financial literacy of the cottage industry's owners.

Within the existing literature, several studies have attempted to investigate the determinants of financial literacy. The majority of them

focused on socioeconomic and demographic factors such as gender, age, income, education and occupation (Hastings et al., 2013; Lusardi et al., 2010; Van Rooji et al., 2011). With the exception of Kadoya and Khan (2020) as well as Sharif et al. (2020), very few studies have attempted to explain financial literacy from the perspectives of psychology and behaviour. Thus, while financial literacy is an important topic, many countries have difficulties in dealing with this issue due to failure in addressing the salient factors.

In psychological literature, several behavioural theories have suggested the importance of skills in understanding certain concepts and applying them in daily life. The theory of planned behaviour introduced by Ajzen (2002) for instance, contends that an individual is able to perform certain tasks when he/she possesses skills and knowledge as these would help in building up confidence. In financial management behaviour, the acquisition of financial knowledge is considered as a human capital investment, whereby individuals devote time and resources to learning in order to increase their stock of human capital; to gain financial knowledge, one has to process complex information (Muñoz-Murillo et al., 2020). Thus, people with higher levels of cognitive ability skills and money management skills may learn more easily as well as face fewer hurdles and costs in the production of knowledge. Their differences may affect the amount of information they can process, the intensity of that information and the self-confidence on the decisions that they reached (Szumowska & Kossowska, 2017). Besides knowledge and skills, the impact of culture on economic outcomes has also received considerable attention in the literature. Culture is not only argued to be impacting the effectiveness of institutions (Licht et al., 2007; Tabellini, 2008). Yet, it has also been documented as an antecedent towards economic development (Davis & Abdurazokzoda 2016; Gorodnichenko & Roland, 2017) and financial behaviour (Haliassos et al., 2020). Few studies have attempted to investigate the impact of culture on financial literacy. For instance, in Ghana, Agyei (2018) reported culture to have a negative relationship with financial literacy. The study found that more religious SME owners were less financially literate. Brown et al. (2018) conducted a comparative study between secondary students of German and French. Their study concluded that German-speaking students were more financially literate as compared to French-speaking students. This was because German-speaking students were more likely to receive pocket money at an early stage, and had independent access to banking services. The impact of culture on financial literacy has also

been observed using Hofstede's (2001) cultural dimension. De Beckker et al. (2020) found that individuals in countries with more uncertaintyavoiding cultures were more financially literate. They preferred to take fewer risks, and thus were more willing to invest in financial education. They considered financial literacy as insurance against unexpected events. These studies showed that some determinants of financial literacy are deeply rooted in a country's culture.

Based on the existing literature, this study built a framework suggesting that the financial literacy of women involved in Pakistan's cottage industry is affected by their cognitive abilities, money management skills and cultural norms. It expands on previous works by testing the variables in the context of Pakistan. As a low-income country, the financial outreach in Pakistan is very limited, whereby more sophisticated products are typically accessible only to a small percentage of the population. In this regard, financial literacy plays a role in the ability to increasingly access and take-up financial services. Furthermore, as a huge percentage of the population is reliant to a much greater extent on cottage industries for their livelihood, acquiring financial literacy is badly needed, compared to the typical wage-earning workers in developed countries. This issue is becoming significant in Pakistan as the majority of people involved in the cottage industry are women, who are known to have low financial literacy as compared to men (Potrich et al., 2015). Majority of the existing studies have explored financial responsibilities of women based on data from developed countries such as Europe or the U.S. where women are already more empowered than in developing countries. Yet, the effects of culture on financial literacy might be even stronger in emerging economies such as Pakistan where social norms and intra-household roles are relatively strict. Hence, we do not only provide new evidence in the context of a developing country, but also complement studies arguing that institutions, social ties and norms are relevant for individuals' behaviours and in the acquisition of financial knowledge. The theoretical framework and hypotheses development are discussed in the following subsections.

#### 2.2 Cognitive Ability and Financial Literacy

Piaget (1936) stated that the term cognitive is derived from the word cognition which means understanding. Cognition is described as gaining, managing and applying information (Wadsworth, 1996). As one of the areas of human psychology, cognitive terms generally encompass all

forms of knowledge, including all mental behaviours that are related to understanding, caring, giving, speculating, and contemplating managing information, problem-solving, imagining, predicting, thinking and believing.

Within the behavioural finance literature, cognitive ability is argued to be a critical element for individuals to make wise financial decisions (Agarwal & Mazumder, 2013; Christelis et al., 2010). Individuals with cognitive abilities are less likely to make financial mistakes (Gerardi et al., 2010). New information gained by an individual tends to have little effect, and would only be effective when the behaviour is under cognitive control. People with higher cognitive abilities are not only likely to seek more financial information, but are able to apply information as compared to those with lower levels of cognition (Kahneman & Tversky, 2013). Lusardi and Mitchell (2007) stated that the ability to determine and avoid logical mistakes in decision making, the ability to make intellectual computations involving cognitive evaluation, and the ability to understand and use numbers are essential skills to become financially literate. Based on these arguments, this study postulates the following hypothesis.

H<sub>1</sub>: Cognitive ability has a positive impact on financial literacy.

## 2.3 Money Management Skills and Financial Literacy

Money management is referred to the process of budgeting, saving, investing, spending, or managing the cash usage of an individual (Bamforth et al., 2018). It encompasses a wide range of skills. These skills include an understanding of computation and record-keeping as well as budgeting, including how much money one can spend, how to make price comparisons, awareness of purchasing patterns, and how to use money to create savings and investments (Browder & Grasso, 1999). Effective money management behaviours allow individuals to handle and control their finances. As financial literacy relates to a person's competency for managing money, effective money management skills promote healthier financial conduct. People with better money management skills have been found to make more rational and informed financial decision making (Taylor & Wagland, 2011; Xiao, 2008). They have a higher ability to use knowledge and skills for personal finance management.

Prior studies have demonstrated the positive association between money management skills and financial literacy (French & McKillop, 2016; Kotze & Smit, 2008). Beal and Delpachitra (2003) argued that people who are equipped with money management skills are able to better handle their financial resources. They are more likely to think about savings and retirement planning at the start of a new job, than at a later stage. They are also able to comprehend how financial institutions work, learn to handle their financial affairs, and are more financially accountable. Based on these arguments, this study postulates that:

H<sub>2</sub>: Money management skills have a positive impact on financial literacy.

#### 2.4 Cultural Norms

Cultural norms could be referred to as the shared expectations, beliefs, and values that guide a specific ethnic, religious, or social group (Guiso et al., 2006). Several studies have discussed the impact of culture on financial literacy (Vitt, 2009; Gudmunson & Danes, 2011; Falk et al., 2018). They argued that cultural factors influence the mind-set of a population, which may ultimately affect the financial strategies adopted. For example, in some cultures, people tend to avoid taking loans to purchase homes or cars, as they view carrying debt as a negative financial practice (Klapper & Lusardi, 2020). In another study, Brown et al. (2018) reported that students in the German-speaking region were more likely to access financial services as they tend to receive pocket money at an early age, as compared to those in the French-speaking area. The findings show that people's beliefs and habits about money are embedded in their family socialisation and form their attitudes and behaviours, which are also related to cultural beliefs.

From studies on the gender gap, it was found that culture influences financial literature through several ways (Rink et al., 2021). First, given that education plays a role in financial literacy, a society that promotes male education relative to female education tends to produce more financially literate men than women. Men could be more financially savvy than women in a culture that allows men to have freedom to access mass media, as well as engage in public and informal discussion on different financial services. Second, the impact of culture on financial literacy is also demonstrated through its effect on household financial responsibilities. In a culture where women have a lower degree of financial responsibility, they tend to possess lower levels of financial knowledge in comparison to men. Based on these arguments, this study posits that:

H<sub>3</sub>: Cultural norms have a significant impact on financial literacy.

Based on the previous literature and developed hypotheses, the following framework was developed.



Figure 1: Research Framework

# 3. Methodology

The research framework developed was tested using a quantitative survey. The instruments used were adapted from previous studies. In line with Atkinson and Messy (2012), Lusardi (2003), Lusardi and Mitchell (2017), this study used two dimensions, namely, financial knowledge and financial skills to measure the financial literacy construct. These items measure the extent of individuals' ability to understand both basic and advanced financial concepts as well as their ability to apply financial knowledge to manage financial situations. In this study, the cognitive ability construct was assessed using 13 items as adapted from Okello et al. (2016) and Scott (2013). These items were categorised into two different constructs, namely, declarative cognition and procedural cognition. To measure money management skills, this study adopted nine items from Garðarsdóttir and Dittmar (2012). Cultural norms were measured using eight indicators adapted from Danes et al. (2016). The seven-point Likert scale, ranging from 1 = strongly disagree to 7 =strongly agree, were utilised to measure the constructs used in this study.

The sampling frame for this study comprised of women working in the cottage industry of Balochistan, Pakistan. Balochistan makes up 44 per cent of the total land area of Pakistan. Yet, this province has been declared to have the highest poverty rate (Iqbal & Nawaz, 2017). Women in Balochistan are involved in various home-based income generation activities, with the majority of them having skills in embroidery. They tend to be marginalised by their culturally rigid society, where women in this area face severe gender inequality and social-cultural restriction.

The samples included both young adults and middle-aged women, and were drawn using purposive sampling. They were involved in various cottage industries such as embroidery, knitting and other handicrafts. Illiterate subjects were excluded during the selection process. A brief introduction related to the main purpose of this survey and its information utilisation was provided to the potential respondents. They were assured that the collected information would only be utilised for academic purposes. Primary data were collected from the respondents by employing a self-administered questionnaire. The sample size for the study was 299, which is more than the minimum sample size of 160 respondents calculated from G-power, a power analysis program used in social and behavioural research for statistical tests (Erdfelder et al., 1996). The minimal sample size for this investigation was derived by using the effect size ( $f^2$ ) by 0.1, the chance of type-I ( $\alpha$ ) error by 0.05, and the power by 0.99, yielding a sample size of 160 for the three predictors employed in the model.

Data collected were analysed using partial least square structural equation modeling (PLS-SEM), which has been widely used in management studies and other disciplines (Ringle et al., 2020). Furthermore, PLS is predictive oriented while other methods are parameter oriented (Sarstedt et al., 2017), and the present study aims to demonstrate an interactive model of factors influencing financial literacy. Applying SEM to test the relationships between factors enables all hypothesised relationships to be thoroughly investigated simultaneously (Byrne, 2013).

## 4. Results

## 4.1 Descriptive

Table 1 depicts the respondents' profiles. As indicated by the table, majority of the respondents were between 18 to 35 years old (82.3%). Most of them had completed their primary school education (60.2%). This is not surprising considering that many of the local communities, particularly women are illiterate (Jabeen et al., 2020). About half of

Demographic Variables	Categories	Frequencies	Percentage
Age	18 to 35	246	82.3
	36 to 54	53	17.7
Education	Primary	180	60.2
	Middle	45	15.1
	Secondary	05	16.7
	Others	24	8.0
Marital Status	Single	241	80.6
	Married	58	19.4
Income	Less than 10000	28	9.4
	10000 – 20000	83	27.8
	21000 – 30000	147	49.2
	31000 or above	41	13.7

Table 1: Respondents' Profiles

them earned between Rs21000 to Rs30000. More than 80 per cent of the respondents were single. This shows that the cottage industry serves as a useful source of income generation for single women.

## 4.2 Structural Equation Modelling

Structural equation modelling was employed using Smart PLS, with a two-step approach (Anderson & Gerbing, 1988). This technique was utilised to decrease the interactional impact of the measurement and structural model. A measurement model analysis was first performed to examine the convergent and discriminant validity of the observed items and their respective constructs. Following this, a composite structural model was built. The structural model was used to examine the relationship between exogenous variables and endogenous variables.

## 4.2.1 Measurement Model

Since assessing financial literacy and cognitive ability consists of reflective measurements, this study first evaluated declarative cognition, procedural cognition, financial knowledge and financial skills as first order constructs before assessing them as second order constructs (Hair et al., 2013). As indicated in Table 2, all items loaded significantly in

Latent Constructs	Factor Loadings	Composite Reliability	AVE	
Declarative Cognition		0.887	0.530	
CAD1	0.660			
CAD2	0.786			
CAD3	0.780			
CAD4	0.697			
CAD5	0.766			
CAD6	0.649			
CAD7	0.743			
Procedural Cognition		0.941	0.726	
CAP1	0.876			
CAP2	0.858			
CAP3	0.849			
CAP4	0.878			
CAP5	0.834			
CAP6	0.816			
Financial Knowledge		0.950	0.612	
FLK1	0.803			
FLK2	0.761			
FLK3	0.801			
FLK4	0.810			
FLK5	0.744			
FLK6	0.789			
FLK7	0.752			
FLK8	0.759			
FLK9	0.737			
FLK10	0.795			
FLK11	0.812			
FLK12	0.820			
Financial Skills		0.953	0.669	
FS1	0.774			
FS2	0.732			
FS3	0.878			
FS4	0.907			
FS5	0.892			
FS6	0.859			
FS7	0.841			
FS9	0.872			
FS10	0.705			
FS11	0.683			

Table 2: Reliability and Validity (First Order)

*Note*: Financial literacy and cognitive ability were measured as 2nd order constructs.

Latent Constructs	Factor Loadings	Composite Reliability	AVE
Cognitive Ability		0.932	0.873
CAD	0.911		
CAP	0.957		
Cultural Norms		0.912	0.635
CN1	0.781		
CN3	0.741		
CN4	0.834		
CN5	0.851		
CN7	0.714		
CN8	0.850		
Financial Literacy		0.791	0.654
Financial Knowledge	0.793		
Financial Skills	0.825		
Money Management		0.912	0.599
MM1	0.822		
MM2	0.709		
MM3	0.780		
MM4	0.804		
MM7	0.717		
MM8	0.782		
MM9	0.797		

Table 3: Reliability and Validity (Second Order)

the range of 0.649 to 0.907. The results also showed that the composite reliability and average variance extracted (AVE) were above the threshold values of 0.5 (Hair et al., 2014). The findings confirmed that all constructs were valid and reliable. These items were then tested for the second-order constructs, and all were found to meet the cutoff points (factor loadings >0.4; AVE >0.5; composite reliability >0.5). These results indicate that all the measures used have satisfied the convergent validity.

Apart from convergent validity, the items were also tested for discriminant validity using Fornell and Larcker's approach (1981) and heterotrait-monotrait (HTMT) ratio technique. Using Fornell and Larcker's (1981) approach, the discriminant validity was examined by comparing the correlation values between the variables and their square root of AVE. As shown in Table 4, the square root of AVE values of all the constructs seemed to be higher than the correlation values, indicating that discriminant validity was achieved. Similarly, as indicated in Table 5, the HTMT values for all the constructs appeared to be below 0.9, indicating adequate discriminant validity (Henseler et al., 2015).

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Constructs	1	2	3	4
Cognitive Ability (1)	0.934			
Cultural Norms (2)	-0.001	0.797		
Financial Literacy (3)	0.154	-0.232	0.809	
Money Management Skills (4)	0.049	-0.105	0.289	0.774

Table 4: Discriminant Validity using Fornell and Larcker's Approach

*Note*: The diagonal elements represent the square roots of AVE values.

Constructs	1	2	3	4
Cognitive Ability (1)				
Cultural Norms (2)	0.040			
Financial Literacy (3)	0.238	0.355		
Money Management Skills (4)	0.058	0.120	0.435	

Table 5: Discriminant Validity using HTMT's Approach

## 4.2.2 Assessment of Structural Model

Assuming that all the constructs used are valid and reliable, a structural model was constructed to test the hypotheses. In line with Hair et al. (2019), a 5,000 resample of bootstrapping procedure was performed to test the hypotheses and developed model. Table 6 and Figure 2 depict the results. As highlighted by Table 6 and Figure 2, the effect of cognitive ability on financial literacy was significant ( $\beta$  = 0.168, t = 3.689, p < 0.000). Therefore, H<sub>1</sub> was supported. The findings also demonstrated substantial evidence on the relationship between money management skills ( $\beta$  = 0.276, t = 5.040, p < 0.000) and financial literacy, providing

Hypotheses and Paths	β	Standard Errors	t-value	p-value	Decision
$H_1: CA \rightarrow FL$	0.168***	0.045	3.689	0.000	Supported
$H_2: MMS \to FL$	0.276***	0.054	5.040	0.000	Supported
$H_3: CN \rightarrow FL$	-0.203***	0.055	3.80	0.000	Supported

Table 6: Structural Model



Figure 2: Structural Model Assessment

support for H<sub>2</sub>. In this study, cultural norms were found to have a negative effect on financial literacy ( $\beta$  = -0.203, t = 3.80, p < 0.000). Thus, H<sub>3</sub> was supported.

For the assessment of the PLS structural model, Chin (2010) suggested researchers to consider the value of  $R^2$ . For the present study, the value of  $R^2$  was at 0.153 (Table 7), suggesting that cognitive ability, money management skills, and cultural norms explain 15 per cent of the financial literacy variance. In line with Hair et al. (2013), this study also employed a cross-validated redundancy test (Q<sup>2</sup>) to assess the predictive validity of the model. As stated by Henseler et al. (2009), the research

	R <sup>2</sup>	Adjusted R <sup>2</sup>	$Q^2$
Financial Literacy	0.153	0.144	0.253

model is deemed to have a predictive relevance in research when the value of  $Q^2$  is greater than zero. As depicted in Table 7, the  $Q^2$  value was 0.253, indicating that the model has predictive relevance.

# 5. Discussion

This study has investigated the relationship between cognitive ability, money management skills, cultural norms and financial literacy. The results highlighted the important roles played by cognitive ability, money management skills and cultural norms in promoting financial literacy among women in Pakistan's cottage industry.

Respondents in this study viewed cognitive ability as an important determinant for them to enhance their financial literacy. This finding is expected since financial decisions involve complex consideration and have both short and long-term impact on individuals. With new financial products and services rapidly being introduced to markets, individuals, specifically women may face difficulties in processing the amount of information. At a basic level, they need to possess simple knowledge about interest rate calculation and interest compounding to manage their loans and debts (Lusardi, 2012). They are also required to make an assessment of the probabilities, timing and costs of uncertainties to make sound financial decisions. Thus, women who develop higher cognitive abilities tend to have a greater capacity to absorb the knowledge and skills acquired. Cognitive ability helps women to achieve the full benefits of financial training provided (Lusardi & Mitchell, 2017). This finding corroborates with previous works conducted by Agarwal and Mazumder (2013), Christelis et al. (2010), as well as Cole and Shastry (2009).

This study found that money management skills possessed by women involved in the cottage industry influenced their financial literacy. Women with money management skills were more likely to engage in rational and informed decision-making. They tended to invest, save and spend their earnings wisely. Those who were equipped with money management skills were more likely to keep record of all revenues and expenditures regularly, thus helping them curb irrational purchases and manage their finance prudently. In this study, majority of the respondents were single women and they were expected to manage their own finances. Thus, they could see the importance of acquiring money management skills in order to manage not only their household financial issues, but their small handcraft businesses. These results are consistent with the findings of French and McKillop (2016) as well as Kotze and Smit (2008).

As expected, cultural norms were found to negatively affect the financial literacy of women involved in the cottage industry. This finding could be due to the contextual setting. Varghese (2012) stated that Pakistan practices a patriarchal dominated social structure, which does not give the right to women to make decisions at any position or level. In this culture, women are less engaged in financial-decision making within the household, and thus, there is less motivation to equip them with financial knowledge as society may not see the use in acquiring this specific knowledge (Lusardi et al., 2014). In fact, boys learn that men have a strong intra-household standing since early childhood. Therefore, they are more likely to obtain financial information and take steps to achieve greater control of financial resources.

## 6. Conclusion, Implications and Limitations

The literature indicates that certain demographic factors influence the level of financial literacy in people. This study has expanded on the existing literature by providing empirical evidence about the importance of other attributes such as cognitive ability, money management skills, and cultural norms in promoting financial literacy among women. Unlike previous studies, the present research focused on women engaged in the cottage industry. In less developed economies such as Pakistan, employment opportunities among females are limited. Being a society that practices a patriarchal social structure, women are not encouraged to work outside their homes. They are more involved in smaller or cottage industry trades such as carpet weaving and handicrafts. Thus, their participation in this industry is seen as a means to reduce the poverty levels in the country. As such, it is very important to provide them with necessary financial literacy. Low levels of financial literacy may increase their vulnerability to poverty, due to the limited ability to seek and use appropriate financial resources. Hence, the present study shall add to current literature on financial literacy and offer a unique perspective in this area. The findings of this study would also provide valuable data to support other researchers in this area.

Three main policy implications can thus be derived from our empirical findings. Firstly, cognitive ability is a relevant determinant to mitigate the financial literacy gender gap in Pakistan. Policies should therefore focus not only providing education, but also training and programmes that would improve cognitive function. They may also need to design public information campaigns that are comprehensive, digestible and easy to follow through. A simplified plan selection process which is easier and concrete with accessible information would help them in absorbing and applying the financial knowledge gained. Secondly, investment in expanding access to mass media could also enhance women's money management skills. It is imperative for the government to provide financial education through effective channels for women. Thirdly, cultural norms need to be changed in such a way that females anticipate being held accountable for financial decisions from an early age. There is a need to recognise, inspire, and empower women in the cottage industry field. The current study argues that more workshops and seminars at regional and national levels need to be used to raise awareness of the importance of the cottage industry, and to develop the different skills needed by women workers in the cottage industry. Regardless of caste, religion, and creed or other deliberations, the government need to empower women in the cottage industry.

There are some limitations of this study which must be noted. First, the study was conducted by focusing only on the females working in the cottage industry of Quetta which denotes a micro-level demonstration of population. Second, this research only investigated the impact of cogntive ability, money management skills, and cultural norms on financial literacy. Further research can be done by taking other constructs such as environmental and religious influences. More in-depth research using qualitative methods can also be carried out to gain rich insights.

#### References

- Adam, A.M., Frimpong, S., & Boadu, M.O. (2017). Financial literacy and financial planning: Implication for financial well-being of retirees. *Business* & *Economic Horizons*, 13(2), 224–236.
- Agarwal, S., & Mazumder, B. (2013). Cognitive abilities and household financial decision making. *American Economic Journal: Applied Economics*, 5(1), 193–207. https://doi.org/10.1257/app.5.1.193
- Agyei, S.K. (2018). Culture, financial literacy, and SME performance in Ghana. *Cogent Economics & Finance*, 6(1), Article 1463813. https://doi.org/10.1080/ 23322039.2018.1463813
- Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology*, 32(4), 665–683. https://doi.org/10.1111/j.1559-1816.2002.tb00236.x

- Alkan, O., Oktay, E., Unver, S., & Gerni, E. (2020). Determination of factors affecting the financial literacy of university students in Eastern Anatolia using ordered regression models. *Asian Economic and Financial Review*, 10(5), 536–546. https://doi.org/10.18488/journal.aefr.2020.105.536.546
- Anderson, J.C., & Gerbing, D.W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423. https://doi.org/10.1037/0033-2909.103.3.411
- Aslam, A. (2013). *Moving towards micro and small enterprise lending oppor-tunities and challenges*. Pakistan Microfinance Network.
- Atkinson, A., & Messy, F.A. (2012). Measuring financial literacy: Results of the OECD/International Network on Financial Education (INFE) pilot study (OECD Working Papers on Finance, Insurance and Private Pensions, No. 15), OECD Publishing. https://doi.org/10.1787/5k9csfs90fr4-en
- Bamforth, J., Jebarajakirthy, C., & Geursen, G. (2018). Understanding undergraduates' money management behaviour: A study beyond financial literacy. *International Journal of Bank Marketing*, 36(7), 1285–1310. https:// doi.org/10.1108/IJBM-05-2017-0104
- Beal, D.J., & Delpachitra, S.B. (2003). Financial literacy among Australian university students. *Economic Papers: A Journal of Applied Economics and Policy*, 22(1), 65–78. https://doi.org/10.1111/j.1759-3441.2003.tb00337.x
- Browder, D.M., & Grasso, E. (1999). Teaching money skills to individuals with mental retardation: A research review with practical applications. *Remedial* and Special Education, 20(5), 297–308. https://doi.org/10.1177%2F07419325 9902000506
- Brown, M., Henchoz, C., & Spycher, T. (2018). Culture and financial literacy: Evidence from a within-country language border. *Journal of Economic Behavior* & Organization, 150, 62–85. https://doi.org/10.1016/j.jebo.2018.03.011
- Byrne, B.M. (2013). Structural equation modeling with EQS: Basic concepts, applications, and programming. Routledge.
- Chin, W.W. (2010). How to write up and report PLS analyses. In V. Esposito Vinzi, W. Chin, J., Henseler, & H., Wang (eds.) *Handbook of Partial Least Squares* (pp. 655–690). Springer.
- Chowbey, P. (2016). Employment, masculinities, and domestic violence in 'fragile'contexts: Pakistani women in Pakistan and the UK. *Gender & Development*, 24(3), 493–509. https://doi.org/10.1080/13552074.2016.1233670
- Christelis, D., Jappelli, T., & Padula, M. (2010). Cognitive abilities and portfolio choice. *European Economic Review*, 54(1), 18–38. https://doi.org/10.1016/j. euroecorev.2009.04.001
- Cole, S.A., & Shastry, G.K. (2009). Smart money: The effect of education, cognitive ability, and financial literacy on financial market participation. Harvard Business School.
- Danes, S.M., Garbow, J., & Jokela, B.H. (2016). Financial Management and Culture: The American Indian Case. *Journal of Financial Counseling and Planning*, 27(1), 61–79.

A. Fazal, H.H. Khan, B. Sarwar, W. Ahmed, N. Muhammad and S.M.N. ul Haq

- Dar, M.S., Ahmed, S., & Raziq, A. (2017). Small and medium-size enterprises in Pakistan: Definition and critical issues. *Pakistan Business Review*, 19(1), 46– 70. https://doi.org/10.1891/1052-3073.27.1.61
- Davis, L.S., & Abdurazokzoda, F. (2016). Language, culture and institutions: Evidence from a new linguistic dataset. *Journal of Comparative Economics*, 44(3), 541–561. https://doi.org/10.1016/j.jce.2015.10.015
- De Beckker, K., De Witte, K., & Van Campenhout, G. (2020). The role of national culture in financial literacy: Cross-country evidence. *Journal of Consumer Affairs*, 54(3), 912–930. https://doi.org/10.1111/joca.12306
- Erdfelder, E., Faul, F., & Buchner, A. (1996). GPOWER: A general power analysis program. *Behavior Research Methods, Instruments, & Computers, 28*(1), 1–11. https://doi.org/10.3758/BF03203630
- Falk, A., Becker, A., Dohmen, T.J., Enke, B., Huffman, D., & Sunde, U. (2018). Global evidence on economic preferences. *The Quarterly Journal of Economics*, 133(4), 1645–1692. https://doi.org/10.1093/qje/qjy013
- Faulkner, A.E. (2017). Financial literacy education in the United States: Exploring popular personal finance literature. *Journal of Librarianship and Information Science*, 49(3), 287–298. https://doi.org/10.1177%2F0961000615616106
- Fornell, C., & Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39–50. https://doi.org/10.1177%2F002224378101800104
- French, D., & McKillop, D. (2016). Financial literacy and over-indebtedness in low-income households. *International Review of Financial Analysis*, 48, 1–11 https://doi.org/10.1016/j.irfa.2016.08.004.
- García-Pérez-de-Lema, D., Ruiz-Palomo, D., & Diéguez-Soto, J. (2021). Analysing the roles of CEO's financial literacy and financial constraints on Spanish SMEs technological innovation. *Technology in Society, 64*, Article 101519. https://doi.org/10.1016/j.techsoc.2020.101519
- Garðarsdóttir, R.B., & Dittmar, H. (2012). The relationship of materialism to debt and financial well-being: The case of Iceland's perceived prosperity. *Journal of Economic Psychology*, 33(3), 471–481. https://doi.org/10.1016/j. joep.2011.12.008
- Gerardi, K., Goette, L., & Meier, S. (2010). Financial literacy and subprime mortgage delinquency: Evidence from a survey matched to administrative data [Working Paper]. Federal Reserves Bank of Atlanta.
- Gill, D., & Prowse, V.L. (2016). Cognitive ability, character skills, and learning to play equilibrium: A level-*k* analysis. *Journal of Political Economy*, 124(6), 1619–1676. https://doi.org/10.1086/688849
- Gorodnichenko, Y., & Roland, G. (2017). Culture, institutions, and the wealth of nations. *Review of Economics and Statistics*, 99(3), 402–416. https://doi.org/10.1162/REST\_a\_00599
- Gudmunson, C.G., & Danes, S.M. (2011). Family financial socialization: Theory and critical review. *Journal of Family and Economic Issues*, 32(4), 644–667. https://doi.org/10.1007/s10834-011-9275-y

- Guiso, L., Sapienza, P., & Zingales, L. (2006). Does culture affect economic outcomes? *Journal of Economic Perspectives*, 20(2), 23–48. https://doi. org/10.1257/jep.20.2.23
- Hair, J.F., Bush, R.P., & Ortinau, D.J. (2014). *Marketing research* (Vol. 2). McGraw-Hill Education.
- Hair, J.F., Ringle, C.M., & Sarstedt, M. (2013). Partial least squares structural equation modeling: Rigorous applications, better results and higher acceptance. *Long Range Planning*, 46(1-2), 1–12. https://doi.org/10.1016/j. lrp.2013.01.001
- Hair, J.F., Risher, J.J., Sarstedt, M., & Ringle, C.M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203
- Haliassos, M., Jansson, T., & Karabulut, Y. (2020). Financial literacy externalities. *The Review of Financial Studies*, 33(2), 950–989. https://doi.org/10.1093/rfs/ hhz076
- Hasan, S.M., ur Rehman, A., Nabi, I., Hamid, N., & Naeem, U. (2017). *Spatial analysis of small and cottage industries in Punjab, Pakistan*. International Growth Centre.
- Hastings, J.S., Madrian, B.C., & Skimmyhorn, W.L. (2013). Financial literacy, financial education, and economic outcomes. *Annual Review of Economics*, 5(1), 347–373. https://doi.org/10.1146/annurev-economics-082312-125807
- Henseler, J., Ringle, C.M., & Sinkovics, R.R. (2009). The use of partial least squares path modeling in international marketing. In R.R., Sinkovics, & P.N., Ghauri (Eds.), *New Challenges to International Marketing* (pp. 277–319). Emerald Group Publishing Limited.
- Hofstede, G. (2001). Culture's consequences: Comparing values, behaviors, institutions and organizations across nations. Sage Publications.
- Hung, A., Parker, A.M., & Yoong, J. (2009). *Defining and measuring financial literacy* (RAND Working Paper Series WR-708). https://doi.org/10.2139/ssrn.1498674
- Huston, S.J. (2010). Measuring financial literacy. *Journal of Consumer Affairs*, 44(2), 296–316. https://doi.org/10.1111/j.1745-6606.2010.01170.x
- Iqbal, N., & Nawaz, S. (2017). Spatial differences and socioeconomic determinants of health poverty. *The Pakistan Development Review*, 56(3), 221–248.
- Jabeen, S., Haq, S., Jameel, A., Hussain, A., Asif, M., Hwang, J., & Jabeen, A. (2020). Impacts of rural women's traditional economic activities on household economy: Changing economic contributions through empowered women in rural Pakistan. *Sustainability*, 12(7), Article 2731. https://doi.org/10.3390/su12072731
- Jacob, K., Hudson, S., & Bush, M. (2000). *Tools for survival: An analysis of financial literacy programs*. Woodstock Institute.
- Junejo, M.A., & Chand, M.N. (2008). Growth and eficiency of small scale industry and its impact on economic development of Sindh. *Pakistan Journal of Commerce and Social Sciences (PJCSS)*, 1, 56–82.

A. Fazal, H.H. Khan, B. Sarwar, W. Ahmed, N. Muhammad and S.M.N. ul Haq

- Kadoya, Y., & Khan, M.S.R. (2020). What determines financial literacy in Japan? Journal of Pension Economics & Finance, 19(3), 353–371. https://doi.org/ 10.1017/S1474747218000379
- Kahneman, D., & Tversky, A. (2013). Choices, values, and frames. In L.C., McLean, & W.T., Ziemba (Eds.), *Handbook of the fundamentals of financial decision making: Part I* (pp. 269–278). World Scientific.
- Klapper, L., & Lusardi, A. (2020). Financial literacy and financial resilience: Evidence from around the world. *Financial Management*, 49(3), 589–614. https://doi.org/10.1111/fima.12283
- Kotze, L., & Smit, A. (2008). Personal financial literacy and personal debt management: The potential relationship with new venture creation. *The Southern African Journal of Entrepreneurship and Small Business Management*, 1(1), 35–50. https://doi.org/10.4102/sajesbm.v1i1.11
- Licht, A.N., Goldschmidt, C., & Schwartz, S.H. (2007). Culture rules: The foundations of the rule of law and other norms of governance. *Journal of Comparative Economics*, 35(4), 659–688. https://doi.org/10.1016/j.jce.2007.09.001
- Lusardi, A. (2003). *Planning and saving for retirement* (Working paper). Dartmouth College, United States.
- Lusardi, A. (2012). *Numeracy, financial literacy, and financial decision-making* (NBER working paper 17821). https://doi.org/10.3386/w17821
- Lusardi, A., & Mitchell, O.S. (2007). Baby boomer retirement security: The roles of planning, financial literacy, and housing wealth. *Journal of Monetary Economics*, 54(1), 205–224. https://doi.org/10.1016/j.jmoneco.2006.12.001
- Lusardi, A., & Mitchell, O.S. (2017). How ordinary consumers make complex economic decisions: Financial literacy and retirement readiness. *Quarterly Journal of Finance*, 7(03), 1750008 https://doi.org/10.1142/S20101392175 00082
- Lusardi, A., Mitchell, O.S., & Curto, V. (2010). Financial literacy among the young. *Journal of Consumer Affairs*, 44(2), 358–380. https://doi.org/10.1111/j.1745-6606.2010.01173.x
- Lusardi, A., Mitchell, O.S., & Curto, V. (2014). Financial literacy and financial sophistication in the older population. *Journal of Pension Economics & Finance*, 13(4), 347–366. https://doi.org/10.1017/S1474747214000031
- Meier, S., & Sprenger, C.D. (2013). Discounting financial literacy: Time preferences and participation in financial education programs. *Journal of Economic Behavior & Organization*, 95, 159–174. https://doi.org/10.1016/j.jebo.2012.02.024
- Morgan, P.J., & Trinh, L.Q. (2019). Determinants and impacts of financial literacy in Cambodia and Viet Nam. *Journal of Risk and Financial Management*, 12(1), 1–24. https://doi.org/10.3390/jrfm12010019
- Muñoz-Murillo, M., Álvarez-Franco, P.B., & Restrepo-Tobón, D.A. (2020). The role of cognitive abilities on financial literacy: New experimental evidence. *Journal of Behavioral and Experimental Economics*, 84, Article 101482. https:// doi.org/10.1016/j.socec.2019.101482

- Murendo, C., & Mutsonziwa, K. (2017). Financial literacy and savings decisions by adult financial consumers in Zimbabwe. *International Journal of Consumer Studies*, 41(1), 95–103. https://doi.org/10.1111/ijcs.12318
- Mustafa, S., Ali Khan, M.S., & Zafar, A. (2016). Role of women in development of Pakistan: A case study of women participation in labour force in Pakistan. *Pakistan Journal of Gender Studies*, 13(1), 221–234. https://doi. org/10.46568/pjgs.v13i1.192
- Okello, G.C.B., Ntayi, J.M., & Munene, J.C. (2016). Institutional frames for financial inclusion of poor households in Sub-Saharan Africa. *International Journal of Social Economics*, 43(11), 1096–1114. https://doi.org/doi. org/10.1108/IJSE-06-2014-0110
- Piaget, J. (1936). Origins of intelligence in the child. London: Routledge & Kegan Paul.
- Potrich, A.C.G., Vieira, K.M., Coronel, D.A., & Bender Filho, R. (2015). Financial literacy in Southern Brazil: Modeling and invariance between genders. *Journal of Behavioral and Experimental Finance*, 6, 1–12. https://doi.org/ 10.1016/j.jbef.2015.03.002
- Rai, K., Dua, S., & Yadav, M. (2019). Association of financial attitude, financial behaviour and financial knowledge towards financial literacy: A structural equation modeling approach. *FIIB Business Review*, 8(1), 51–60. https://doi. org/10.1177%2F2319714519826651
- Raziq, A., Younas, M., & Rehman, Z. (2010). Prospects of livestock production in Balochistan. *Veterinary Journal*, 30(3), 181–186.
- Rink, U., Walle, Y.M., & Klasen, S. (2021). The financial literacy gender gap and the role of culture. *The Quarterly Review of Economics and Finance, 80*, 117–134. https://doi.org/10.1016/j.qref.2021.02.006
- Ringle, C.M., Sarstedt, M., Mitchell, R., & Gudergan, S.P. (2020). Partial least squares structural equation modeling in HRM research. *The International Journal of Human Resource Management*, 31(12), 1617–1643. https://doi.org/ 10.1080/09585192.2017.1416655
- Sarstedt, M., Ringle, C.M., & Hair, J.F. (2017). Treating unobserved heterogeneity in PLS-SEM: A multi-method approach. In Latan H., & R. Noonan (Eds.), *Partial least squares path modeling* (pp. 197–217). Springer.
- Scott, W.R. (2013). *Institutions and organizations: Ideas, interests, and identities*. Sage publications.
- Sharif, S.P., Ahadzadeh, A.S., & Turner, J.J. (2020). Gender differences in financial literacy and financial behaviour among young adults: The role of parents and information seeking. *Journal of Family and Economic Issues*, 41(4), 672–690. https://doi.org/10.1007/s10834-020-09674-z
- Soriano, D.R., & Dobon, S.R. (2009). Linking globalization of entrepreneurship in small organizations. *Small Business Economics*, 32(3), 233–239. https://doi. org/10.1007/s11187-008-9155-5
- Szumowska, E., & Kossowska, M. (2017). Need for cognitive closure and attention allocation during multitasking: Evidence from eye-tracking

studies. *Personality and Individual Differences, 111, 272–280.* https://doi.org/10.1016/j.paid.2017.02.014.

- Tabellini, G. (2008). Institutions and culture. *Journal of the European Economic Association*, 6(2-3), 255–294. https://doi.org/10.1162/JEEA.2008.6.2-3.255
- Tasneem, S., & Biswas, M.R. (2016). Role of cottage industry in the economic development of Bangladesh: An empirical study. *European Journal of Business and Innovation Research*, 4(3), 73–87.
- Taylor, S., & Wagland, S. (2011). Financial literacy: A review of government policy and initiatives. *Australasian Accounting, Business and Finance Journal*, 5(2), 101–125.
- Van Rooij, M.C., Lusardi, A., & Alessie, R.J. (2011). Financial literacy and retirement planning in the Netherlands. *Journal of Economic Psychology*, 32(4), 593–608. https://doi.org/10.1016/j.joep.2011.02.004
- Varghese, J. (2012). Women empowerment through literacy campaign: Role of social work. Concept Publishing Company.
- Vitt, L.A. (2009). Values-centered financial education: Understanding cultural influences on learners' financial behaviors. Institute for Socio-Financial Studies.
- Wadsworth, B.J. (1996). Piaget's theory of cognitive and affective development: Foundations of constructivism. Longman Publishing.
- Xiao, J.J. (2008). Applying behavior theories to financial behavior. In J.J., Xiao (Ed.) *Handbook of consumer finance research* (pp. 69–81). Springer.
- Yu, K.M., Wu, A.M., Chan, W.S., & Chou, K.L. (2015). Gender differences in financial literacy among Hong Kong workers. *Educational Gerontology*, 41(4), 315–326. https://doi.org/10.1080/03601277.2014.966548
- Yunis, M.S., Hashim, H., & Anderson, A.R. (2019). Enablers and constraints of female entrepreneurship in Khyber Pukhtunkhawa, Pakistan: Institutional and feminist perspectives. *Sustainability*, 11(1), 1–20. https://doi.org/ 10.3390/su11010027