

**LINK BETWEEN FINANCIAL LITERACY AND FINANCIAL INCLUSION: A CASE OF URBAN AREAS OF KARACHI, PAKISTAN**

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(Pakistan)**Abstract:**

The research is aimed at examining the link between financial literacy and financial inclusion in the presence of social interaction. An established theoretical framework was used, and a tested questionnaire was employed to test the hypotheses and data collection. Proxies were used for financial literacy and financial inclusion as examined by other researchers in previous studies. Smart PLS was used as the data is primary in nature. Among all proxies of Financial Literacy, the results show that behavior and knowledge contribute to have an impact on financial inclusion while skills and attitude do not significantly influence. Social interaction moderates the relationship between financial literacy and inclusion as hypothesized in the study. The results support the empirical findings of previous studies.

Keywords:

Social Interaction, Sustainable Development Goals, Financial System, Financial Literacy

INTRODUCTION

The economic and social activities in the world are evolving and changing every day from an industrial era to the digital era and the world is in its third industrial revolution known as the “Digital Revolution” [Clarke \(2012\)](#). All economic sectors of countries are now adopting new ways of modern technologies which include health care, industrial, agricultural or financial all of them are adopting technologies and making their life easier. The developing skills, knowledge, and proficiency were helping all the sectors in achieving financial inclusion (FI) by making digital financing as a primary goal ([UNCDF, 2019](#)). In the Sustainable Development Goals (SDGs) of 2030, financial inclusion (FI) was enabled and targeted as a development goal for the economy ([UNCDF & SDGS, 2021](#)). Financial inclusion (FI) is one of the most essential elements for reducing poverty and the development of economies ([Demirguc-Kunt et al., 2018; Morgan & Long, 2020](#)). According to UNCDF (2021), economic growth can be achieved through the support of financial inclusion. It can help in improving the allocation of capital, stabilizing national resources and financial structures through national savings, and can enhance the government’s revenue ([Chauvet & Jacolin, 2017](#)). FI can be defined as an appropriate manner of accessing the best quality financial goods/ services by the citizens of the economy at suitable prices. It works as a basic tool in the life of people; it can help individuals to plan their financial budgets and to manage their finances. For making the individuals financially included, it is essential to make the person financially literate, which generates basic understanding of financing among individuals ([Qazi, 2018](#)).

Financial literacy (FIN) is the financial skills, knowledge, and abilities through which people can appropriately make decisions about investing and budgeting. This makes people more aware of the financial goods/services, risks, and returns. When people get financially literate, they can understand the financial terms more easily and can avail new opportunities. It supports individuals to manage their financial obligations and relationships with moneylenders ([Kefela,](#)

[2011](#)). FIN is the main key element in empowering and enhancing individuals’ knowledge about financial goods and services which helps them in making financial decisions accurately.

According to previous studies, low levels of financial literacy were found among poor people which severely affects financial inclusion worldwide ([Bongomin, Munene, et al., 2017](#)). Poor people have a lack of skills, knowledge, and awareness about financial goods and services due to which they suffer by taking wrong financial and investing decisions, which results in financial losses.

Previously studies were conducted in the rural areas of Uganda, particularly among poor households, whose earnings were below the minimum level and can hardly meet basic needs ([Bongomin et al., 2016](#)). These studies emphasize the connection between financial literacy and financial inclusion with the mediating effect of cognition, social capital, networks, etc. in the rural areas of Uganda. However, these studies ignore the moderating effect of social interaction. This study focuses to explore the impact of financial literacy (FIN) on financial inclusion (FI) with the moderating effect of social interaction, especially among the people of Karachi. Social interaction can be defined as exchanging of ideas, thoughts, and beliefs among two or more individuals. According to [Balatti \(2007\)](#), social interaction builds ties and increases levels of trust which can support and facilitate access to financial knowledge and skills among financially illiterate people. It acts as a channel among individuals through which people can exchange their knowledge, information, and ideas ([Bongomin et al., 2020](#)).

Financial inclusion and financial literacy are taken the attention of researchers but still, there is a lack of knowledge and understanding among the individuals. According to [Owori \(2020\)](#), prior research was conducted particularly in Uganda which is counted as a poor and low-income nation, about 41% of the population in Uganda was living in poverty ([Mejia, 2020](#)). According to [Balatti \(2007\)](#), a previous study shows that social capital mediates the relationship of

financial inclusion and financial literacy positively.

According to [Finclusion \(2021\)](#), about 21% of the population in Pakistan are financially literate and financially included, 17% are literate with basics and 9% of people are illiterate. This shows that many people are still unaware of financial goods/services and hence are excluded from the financial system of the country. This study is the first which is conducted in the well-developed city of Karachi in Pakistan among individuals who earn a low level of income. This study is limited to the urban areas of Karachi because about 85% of the population in urban areas is illiterate ([Finclusion, 2021](#)).

The purpose of this study is to investigate the influence of financial literacy on financial inclusion in the urban areas of Karachi city, with the targeted population who belongs to the lower social/economic class of Karachi. According to [Bongomin et al. \(2016\)](#), the social lower class is the one whose status, education, and earnings are lower than others through which basic needs can be fulfilled. According to the Pakistan Bureau of Statistics ([PBOS, 2020](#)), about 25% to 30% of Karachi's population are living at low levels of income. They spend less on health and education and are employed as labours, factory workers, traders, plumbers, tailors, guards, etc. These are the individuals who live a rough and tough life and earn low levels of income from Rs.1,000 to Rs.50,000 monthly ([Subohi, 2006](#)).

Literature review

According to [Porta et al. \(1998\)](#), for increasing the use and access of financial inclusion many financial markets have been developed and liberalized globally. Due to the exclusive and sophisticated financial goods and services, these new players were not able to encourage the demand and use of financial inclusion to the level of satisfaction ([Bongomin et al., 2018](#)). The three proxies' quality, welfare, and usage play a significant role in financial inclusion. According to [OECD \(2002\)](#), welfare is considered as an assessment of an individual's satisfaction. For the financial welfare of the individual, consumption plays an important role as observed by [Mallick and Zhang \(2019\)](#); [Masiyandima et al. \(2017\)](#) when individuals get

financially included the level of consumption increases because they try to satisfy their needs and improves the quality of their livelihood but to be financially included it is important to be financially literate. According to [Lochey \(2020\)](#), the term financial inclusion usage has risen the most in current years because many of the individuals in the economy were financially included and have access but they do not use financial products/services. [Ramji \(2009\)](#) stated that financial inclusion leads to usage and influences financial behaviour but due to lack of knowledge, the behaviour towards usage of financial services changes.

Hypothesis

Financial Inclusion (FI) and Financial Literacy (FIN)

The level of financial inclusion gets affected by financial literacy which acts as a factor of demand ([Cole et al., 2011](#)). For understanding the complex financial products and services, the population needs to get financially literate and be aware of new opportunities especially among the poor people ([Bank, 2012](#); [Bongomin, Munene, et al., 2017](#)). These poor people are the ones who live in a most vulnerable situations and suffer all the financial burdens ([IBRD & DFID, 2009](#)). These individuals have a low rate of financial inclusion due to financial illiteracy. Along with the development of financial institutions and the growing challenges, it becomes a problematic situation for the lower class to make financial decisions or choices. According to [Lusardi and Mitchell \(2011\)](#), for availing these opportunities and to be financially included they are required to develop skills, knowledge, and expertise in the concerned area.

Skills, Knowledge, and Financial Inclusion

These financial skills and knowledge can support individuals in examining which financial goods/services are good to them, how can they avail, what was the procedure for it and what benefits they get, etc. [Holzmann \(2010\)](#) clarifies that practical training sessions for developing financial skills and knowledge can enhance the capability to design or plan their financial budget. It was observed by [Cohen and Nelson \(2011\)](#) that to be an informed financial decision-maker it is important to have basic financial skills

which give a high sense of awareness of financial issues. Lack of awareness and understanding of financial products/services was caused by the ignorance of poor people which leads to financial loss (Agarwal, 2007). It was argued by Cole et al. (2011) that if the poor were not aware of financial goods they should try to get knowledge of it, they should be financially literate (Bongomin, Ntayi, et al., 2017; Co-operation & Development, 2009) which makes them informed decisions and strategic financial choices. According to Kefela (2010), saving rates, credit value, and decision-making was supported by financial literacy which socially and economically empowered the reduction of poverty.

H1: Skills are positively related to financial inclusion.

H2: Knowledge is positively related to financial inclusion.

$$fin = @ + \beta_1sk + \beta_2know$$

Attitude and financial inclusion

The main reason behind financially excluded people was the lack of awareness and the attitude of the people towards financial goods/services (Atkinson & Messy, 2013). The poor people ran away to be financially included due to a lack of awareness, skills, and knowledge which creates a poor attitude towards the consumption of financial products/services (Bongomin, Munene, et al., 2017). This decreases the probability of poor people being financially included and discourages them to use financial goods. According to Holzmann (2010), the willingness for using financial goods, saving, borrow, or insure products is said to be the attitude of financial inclusion. Thus Willis (2008) said that this can be overcome by financial literacy, it makes people learn how to plan their finances and change their attitude from living on daily wages to saving for the future. This creates a desire to plan their finances and save for the future.

H3: Attitude is positively related to financial inclusion.

$$fi = @ + \beta_3att$$

Behaviour and Financial Inclusion

It was observed by Tufano and Lusardi (2009), that it is important to make and develop personal finance for making informed financial

decisions that contribute to the more efficient allocation of financial resources and financial stability. Effective financial behaviour promotes the use of financial services and shows the capability of planning, budgeting, and saving for the future (Bongomin, Munene, et al., 2017; Holzmann, 2010). Financial literacy can help individuals to plan, budget, save, and insure for the safety of future and old age, this also makes the people participate in the financial activities and be financially included (Braunstein & Welch, 2002).

H4: Behaviour is positively related to financial inclusion.

$$fi = @ + \beta_4beh$$

$$fin = \alpha + \beta_1\sum fin + \epsilon \quad [1]$$

Where,

$\backslash fi$ = Financial Inclusion

fin = Financial Literacy

Financial literacy involves the measurement of the following proxies:

$$fin = sk + know + att + beh$$

Where,

sk = Skills

$know$ = Knowledge

att = Attitude

beh = Behaviour

Social interaction as moderating Variable

Bongomin et al. (2020) observe that for promoting financial inclusion among the lower-class social interactions, ties and interdependence are the best way. According to Okten and Osili (2004), social interaction and social circles lead individuals to understand credit opportunities. Social interaction works as a device that determines the creditworthiness of poor individuals for being selected to receive the loan (Aryeetey, 2005). According to Ahlin and Townsend (2007), social interaction was the basic tool for the poor for recommending members and ensuring the enforcement of repayment contracts. It is observed by Balatti et al. (2006) that poor individuals usually get financially literate themselves through social interaction which enables them to access scarce resources. These accessible resources work as a function of resources, which includes physical/financial resources, skills, knowledge, and contracts with other networks.

As witnessed by Miller et al. (2009), the poor individuals mostly rely on their social gatherings and follow them. However, these individuals could change their existing ties after financial literacy projects. This financial knowledge and resources can be utilized by transferring them within the new networks through financial literacy programs. For the lower class, it becomes a hazard to extend credit and lenders. The information about the availability of credit opportunities was shared among the lower through social networks. It makes individuals learn more about credit and loan opportunities.

The distinct information can be accessed by individuals who are opposed to structural holes which can be defined as the light connection among the people (Burt, 1992). Whereas the knowledge can easily be transferred within the structural hole of strong ties (Bongomin et al., 2020; Hansen, 2002). Financially literate members can share their knowledge and skills with other participants of networks (Falk & Kilpatrick, 2000; Okello Candiya Bongomin et al., 2016).

H5: Social interaction significantly and positively moderates the relationship between financial literacy and financial inclusion.

$$f_i = \alpha + \beta_1 \sum fin + \beta_2 socialint * \sum fin + \epsilon$$

[2]

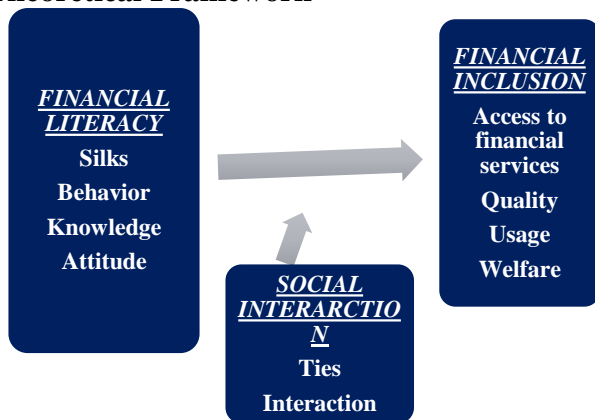
Where,

f_i = Financial Inclusion

fin = Financial Literacy

Socialint = Social Interaction

Theoretical Framework



Methodology

Research Design

Like the previous studies, this study uses a cross-sectional research design because it allows collecting data from the population over a shorter period. It is even the cheapest and less time-consuming research design than others, easily collects data, and excludes the recurring mistakes which were common in longitudinal research design (Okello Candiya Bongomin et al., 2016).

Population

The target population of this study is the one who earns low levels of income and lives in the urban areas of Karachi. According to PBoS (2020), the people who earn about Rs.1,000 to Rs.50,000 were considered low-level incomers. They are the ones who lived a very rough/ tough life and spend only on the essentials, not on the luxuries. The population for this study was drawn from the four regions of Karachi, which include northern, southern, eastern, and central regions. According to Rowman and Littlefield (2016), from the total population of 160,515,121, about 14.9 million of them were living in the urban areas of Karachi.

Previous studies such as Bongomin et al. (2018) have investigated the impact of financial literacy on financial inclusion among the poor households of Uganda. For this study, the lower class is preferred as they are the ones who were financially excluded due to their low earnings and financial illiteracy. They hesitate to be financially included due to the increasing challenges in access to financial services. From the total population of Karachi, about 25-30 percent of individuals were breathing on low earnings (PBOS, 2020; Subohi, 2006).

Sampling Design & Technique

A purposive sampling technique have been chosen for this study in this technique, only a specific group of people can provide the required information because they are the only one who has knowledge and expertise of that particular area. The selection criteria is based on the social lower class indicators which were an individual’s health, education, welfare, employment, or income (PBOS, 2020). For achieving this total sample of lower-class the criteria were used continuously until it was accomplished. Future

research can be conducted in the western district of Karachi, as according to [Azfar-ul-Ashfaq \(2017\)](#) about 283,247 populations of the western district were living as rural populations. According to [Mansoor \(2013\)](#), areas that were included in western Karachi are Orangi town, Mominabad, SITE area, Baldia, Manghopir, Kemari, etc. More than 400 questionnaires were distributed among which 300 questionnaires were received in complete and form.

Sampling frame

The target population of this research is low-income persons; males and females who earn income from Rs.1000 to Rs.50000. This sample includes individuals who are clerks, peons, sweepers, janitors, maids, guards, shopkeepers, waiters, laborers, postmen/deliverymen, etc.

Table 1 shows the characteristics of the respondents. The table shows that majority of the respondents of the research are males i.e., 69.3%. The income level of majority of respondents was between 1000-30,000 and 85.3% of the respondents have a bank account while 14.7% respondents do not have a bank account.

Table 1 Characteristics of Respondents

Gender	Male	208	69.3%
	Female	92	30.7%
Income Level	1,000- Rs.10,000	128	42.7%
	10,001- Rs.30,000	153	51.0%
	30,001- Rs.50,000	19	06.3%
	More than 50,000	0	0.0%
Family Members	5 or less	97	32.3%
	6-10	146	48.7%
	More than 10	57	19.0%
Bank Account Holders		256	85.3%

Research Instrument

This study is primary quantitative. The data is collected via 300 questionnaires from a sample of social lower class living in urban areas of Karachi to examine the impact of financial literacy on financial inclusion with moderating

effect of social interactions. This study had adopted all the measurements of the questionnaire from a previously published study ([Bongomin et al., 2016](#)). We also translated the questionnaires into the Urdu language from a qualified lecturer of Siraj-ud-daulah government college of Karachi so that the people can understand the terms and knowledge easily. All the measurement items were tested before finalizing the questionnaire and then all the ambiguous questions were removed from it so that no one struggles to answer the questions.

Measures of study variables

The main goal of this study is to examine the impact of financial literacy on financial inclusion with moderating effect of social interaction in the city of Karachi. Thus the key variables of this research are financial literacy, financial inclusion, and social interaction. In this study, the Likert measurement scale was chosen to measure the variables on five points. The following numbers show how strongly individual agrees or disagrees with the statement.

- | | | | | |
|-------------------|----------|---------|-------|----------------|
| 1. | 2. | 3. | 4. | 5. |
| Strongly disagree | Disagree | Neutral | Agree | Strongly agree |

This study uses skills, behaviour, attitude, and knowledge as the measurements of financial literacy just like the previous studies ([Tufano & Lusardi, 2009](#)). According to [Bongomin et al. \(2020\)](#), these measurements were considered valid and dependable. Skills, behavior, attitude, and knowledge were considered as the factors of learning and education which influence the individuals to do something. Similarly, it happens with financial literacy, when people get financially literate they try to be financially included. The dimensions which were chosen for measuring financial inclusion are access, quality, welfare, and usage ([Bongomin et al., 2020](#)). These dimensions were considered as the main pillars for the measurements of financial inclusion. Similarly, the key dimensions for social interactions which were adopted from previous studies are ties and interdependence; these two measurements seem to be the most valid dimensions.

Results

Data analysis

This study executed two steps for data analysis. The first step is to enter the data on a Microsoft Excel sheet as the data was collected through the paper survey. In the second step, the data was entered into the software called Partial Least Square (PLS) for determining the measurement model, reliability, validity, and SEM model. According to [Setiawan et al. \(2021\)](#), analyzing the structural and measurement model variance-based SEM-Structural Equation Modeling's Partial Least Square (PLS) is the best way. The data was examined and tested for wrong scoring or missing values before entering into the PLS and the data with missing values were removed from the sheet.

Reliability and validity

Table 2: Reliability Statistics

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
FI	0.86	0.894	0.897	0.597
FIN	0.051	0.831	0.592	0.536
SOCIALINT	0.847	0.973	0.907	0.768
SOCIALINT*FIN	1	1	1	1

To measure the internal consistency and convergent validity of the variables the reliability and validity test was performed. The Cronbach's alpha coefficient and average variance explained (AVE) show the reliability and validity respectively. According to [Bongomin and Ntayi \(2019\)](#), the coefficient values above 0.70 and convergent validity above 0.50 were considered reliable and valid.

In this study financial inclusion and social interaction were considered reliable as their Cronbach's alpha results were higher at 0.86 and 0.847 respectively. The variables i.e interaction, inclusion, and literacy show an average variance of 0.768, 0.597, and 0.536 respectively which means that the variables are valid. Thus the results fulfilled all the requirements of convergent validity and reliability.

Discriminant validity

According to [Henseler et al. \(2015\)](#), heterotrait is a way to assess discriminant validity, and if it's below 0.90 then discriminant validity was established between constructs. All the values in table no.02 result below 0.90 which mean that all the variables are reflective constructs.

Table 3: Heterotrait-Monotrait ratio

	FI	FL	SOCIALINT	SOCIALINT*FL
FI				
FIN	0.896			
SOCIALINT	0.637	0.443		
SOCIALINT*	0.582	0.416	0.174	
FIN				

The discriminant validity measures the relationship of variables in diagonal.

Table 4: Discriminant Validity Statistics

	FI	FL	SOCIALINT	SOCIALINT*FL
FI	0.773			
FIN	0.783	0.732		
SOCIALINT	0.581	0.415	0.876	
SOCIALINT*FIN	0.542	0.387	0.14	1

Table 4 represents that social interaction contains the highest square root of (SOCIALINT=0.876) and the lowest square root is of financial literacy (FL=0.732). This shows that the variables are distinctive and unique.

Measurement Model in Smart-PLS

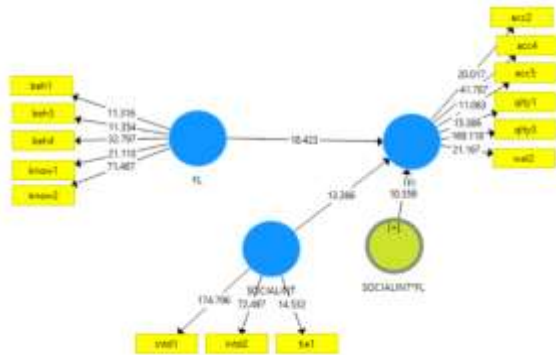
The PLS generates the factor loadings to the variables. According to Taylor and Geldenhuys (2019), the variables with 0.7 or higher outer loadings were considered adequate, 0.5 were acceptable but variables with 0.4 or lower values were removed.

Table 5: Factor Loadings

	FI	FL	SOCIALINT	SOCIALINT*FL
FL*SOCIALINT				1.109
acc2	0.785			
acc4	0.855			
acc5	0.615			

beh1	0.612
beh3	0.694
beh4	0.743
intd1	0.951
intd2	0.933
know1	0.682
know2	0.899
qlty1	0.648
qlty3	0.935
tiel	0.727
wel2	0.750

Following model was the final model after the deletion of the variables that affect the AVE.



According to Bongomin and Ntayi (2019), if the item does not contain higher loadings then it will be deleted to improve the results but if the AVE will not improve after deletion of the items then no items will be removed. In this study, this rule of thumb is used to improve the results of AVE. The sub-variables whose outer loadings are negative or less than 0.5 were removed from the model that includes skills, attitude, usage, welfare, etc. The factors which contain loadings from 0.5 to 0.7 or higher are access, behavior, knowledge, and quality i.e. acc5, beh1, beh3, know1, and qlty1 are acceptable.

SEM Results

According to Bongomin and Ntayi (2019), to show the interrelation or links between the variables structural model is constructed, and for examining the hypothesis and structural model PLS-SEM was used. The table below illustrates the acceptance and rejection of the developed relationships.

Table 6: Statistical results of the direct relationship

	Beta	T Statistics	P Values	Result
FIN -> FI	0.54	19.119	0.000	Accepted

SOCIALINT -> FI	0.317	12.608	0.000	Accepted
SOCIALINT*FIN -> FI	0.26	10.525	0.000	Accepted

The result shows that the entire hypotheses are accepted.

Effect Size Of Model

According to Bongomin and Ntayi (2019), for determining the actual magnitude of the effect and strength of the model the effect size of the model is considered to be a standardized measure. R² indicates the strength of the model as if r² results 0.1, 0.3, and 0.5 it is described as a small effect, medium effect, and large effect respectively (Kock & Hadaya, 2018). The table below illustrates the strength of the model.

Table 7: Effect size

	R Square	R Square Adjusted
FI	0.763	0.761

The table above demonstrates a strong effect size as the result of r² is 0.76.

Practical Implications

It is important to note that financial inclusion is one of the most essential tools for financial development in any economy. As people starts using financial products/services, the will be included in the fincial system which enhances the capacity of financial institution to grow further. Financial inclusion (FI) and Financial Literacy (FIN) cannot be studied in isolation. People need to be aware of the financial products/services in order to use them for their financial decisions.

Besides, this also leads to understand the financial needs of the segement which are still outside the financial system of an economy. This study fills this gap, stating that financial inclusion is essentail but without financial literacy, it is of no use.

Conclusion

The main purpose of this research is to investigate the moderating effect of social interaction between financial literacy and financial inclusion among the urban areas of Karachi. The findings of the direct relationship show that all the relations were statistically significant as all results ($\rho \leq 0.05$) which means that the null hypothesis was rejected against the alternative hypotheses. The finding shows that

skills and attitude do not significantly influence financial inclusion.

Furthermore, the result shows that social interaction moderates the relationship between financial literacy and inclusion which supports the hypothesis that social interaction significantly and positively moderates the relationship between financial literacy and financial inclusion. It is also justified as social interaction works as a medium to flow the knowledge about financial goods and services. The results of the study confirms the previous literature in a manner that, alongwith other variables, social interaction is a construct which needs to be taken while studying the relationship between financial inclusion and financial literacy.

Limitations

The research design of this study is limited. A cross-sectional research design was adopted by this research future areas are open for longitudinal studies. Besides the sample size and the targeted population is also limited to lower class and urban areas of Karachi.

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