Exploring the power of Financial Self-efficacy in Acceleration of Financial Inclusion among Adults

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ARTICLE DETAILS	ABSTRACT
History: Accepted 22 September 2023 Available Online 30 September 2023 **Keywords:** *Digital Consumer Protection, Financial Self-efficacy, Financial Literacy, Financial Inclusion, Pakistan* OPEN ACCESS	The problem of financial exclusion still persists in the fifth most populous state of the world, i.e., Pakistan which pose a significant threat to the Pakistan's economic development. This research applies the idea of financial inclusion in an effort to examine the factors that contribute to adults' levels of financial inclusion. One of the variables that will be used in this investigation is financial self-efficacy, which will serve as a mediator. Using a method known as purposive sampling, this study collects data from a total of 406 adult inhabitants of Pakistan over the course of five months, beginning in January 2023 and ending in May 2023. The survey itself is in the form of a questionnaire. For the purpose of scale validation, confirmatory factor analysis was used, whereas structural equation modeling was performed for the purpose of testing hypotheses. A bootstrap method based on percentiles and a confidence interval of 95% was used to test mediation. According to the findings of the research, a person's level of financial self-efficacy serves as an essential and substantial mediator between the association between 1) Financial literacy and financial inclusion, and 2) Digital consumer protection and financial inclusion. In addition, it was shown that an increase in financial literacy, the utilization of mobile money, and digital consumer protection all substantially led to an increase in financial inclusion. The findings of the research give significant advice for policymakers to enhance financial inclusion in the context of developing countries by enhancing financial literacy programs and implementing strong consumer data protection laws. This may be accomplished by improving financial inclusion in the context of developing countries. **

1. Introduction

It is impossible to exaggerate the impact of financial institutions on the volume of economic activity in developed and developing nations. One of the most vital functions of financial institutions is the utilization of capital, which is only possible by taking a greater number of people under the umbrella of the formal financial sector. This leads us to the concept of financial inclusion (FI), which refers to the utilization of a variety of high-quality payments,

savings, credit, and insurance services by people and businesses to meet their requirements in a dignified and equitable manner. The benefits that financial inclusion (FI) has on an economy's micro and macro levels can be used to measure its significance. FI provides incremental and complementary solutions at the micro-level to help end poverty, advance just development, and ultimately assist in achieving SDG 1[1] and 10[2] (Wang & Guan, 2017; Lopez & Winkler, 2018). FI can support in boosting possible development at the macro level by encouraging more enterprises to enter the formal sector and mobilizing savings, which increases tax revenues (AFI, 2015; Soumaré, Tchana, & Kengne, 2016). To accomplish this, FI must be enhanced and expanded at the individual, household, and governmental levels.

The World Bank defines FI as the availability of fairly priced financial resources ("products and services") that satisfactorily address customers' needs in a sustainable and moral manner. Easy access to financial services is viewed by the World Bank as an "essential step" in the battle against inequality and poverty. Financial inclusion enables individuals to save for essentials for their families, obtain loans to help their businesses, or build up emergency cash (Bongomin & Ntayi, 2019). FI has long been a problematic issue in Pakistan's economic development: according to the SBP's "Access to Finance" report from 2015, half of the adult population is still financially excluded. In Pakistan, more than 220 million people are living. Only 2.4% of the population has access to official financial sources of credit, making the financial sector's penetration incredibly low. 53 percent of Pakistan's adult population is financially excluded. The lack of knowledge about financial goods and their usage is one of the main explanations why a substantial proportion of the population lacks access to banking services. A sizable section of the population also struggles with fundamental financial and money management skills. For them, concepts like saving money and planning are unfamiliar (SBP, 2020).

One of the biggest barriers to FI is financial illiteracy. Many people are locked out of the financial markets because they cannot access banking and financial services due to a lack of information about money and financial products. Financial literacy (FL) is therefore essential to both people's financial security and the health of a state's economy as a whole. (GFLC, 2022). "A person's capacity to understand, analyses, manage, and explain personal finance matters is referred to as financial literacy" (Vitt, et al., 2018). It specifically denotes to the knowledge and skills essential to cope up with financial challenges and make daily judgments. Macroeconomically, financial literacy ensures that a nation's citizens are suitably equipped to handle common financial problems and commercial activities. Reduced degree of financial literacy can result in bad financial decisions, which can then cause consumers to struggle to meet their fundamental financial needs, which can lower levels of pleasure. According to a prior study, consumers who lack FL are more likely to stop participating in activities that promote the best possible decision-making (Lusardi & Mitchell, 2007).

Financial inclusion has usually been looked at from the supply side by looking at access, use, and spread of official financial services. However, it is also important to look at the factors that affect FI from the demand side. (Lown, 2011) shows that one of the biggest things that affects how people handle their money is how confident they are that they can handle a financial problem without getting stressed out. Financial self-efficacy (FSE) is the "ability to give a person the confidence they need to use organized financial services to make their lives better" (Mindra, Moya, Zuze, & Kodongo, 2017). It is important to assess the role of financial self-efficacy in elevating the level of FI.

Despite various financial innovations by SBP such as mobile money, mobile wallet, and Raast for bringing a maximum number of people under the umbrella of formal financial institution or agent, still, Pakistan's financial inclusion rate is predicted to be 21%, which is still low when compared to countries with similar socioeconomic profiles, such as India (78%) and Bangladesh (47 %) (Sohail, 2021). Despite 87.74% cellular subscribers (PTA, 2022), 36% of internet users (Kemp, 2022), there are only 14.89 % of Pakistanis who use mobile phone for financial

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1 "No Poverty"
2 "Reduced Inequality"

services; we see that there still exists a blockage in acceptance and usage of mobile money app services. This study will look at the role of financial literacy, mobile money usage and digital consumer protection in elevating the percentage of people financially included. Considering the importance of determining factors that may accelerate FI, we develop the following research questions.

1. To what extent financial literacy is important in promoting financial inclusion?
2. To what extent mobile money usage is important in promoting financial inclusion?
3. To what extent digital consumer protection is important in promoting financial inclusion?
4. Does financial self-efficacy play a mediating role between accelerating factors and financial inclusion?

Following are the study goals that were determined on the basis of the research questions: To begin, the purpose of this study is to evaluate the role that each of the four components of financial literacy (FL), namely, attitude, knowledge, skills, and behaviour, plays in improving FI among people. The second objective is to investigate the influence that mobile money use (MMU) and digital consumer protection (DCP) have on the development of financial independence in adults. Third, to determine whether or not financial self-efficacy (FSE) acts as a mediator in the association between financial literacy and financial intelligence. Fourth, to determine whether or not the FSE acts as a mediator in the connection that exists between the MMU and the FI. Fifth, to determine whether or not FSE acts as a mediator between DCP and FI in their connection.

People are held responsible for better managing their own money over the course of their lives than ever before in today's society. The emergence of brand-new, intricate financial goods as well as advances in technological capability are both factors that are adding to the quickening pace of the expansion of financial markets. People now have access to a far wider variety of financial items than they ever had in the past, and the decisions that are made about these financial things have an effect on the wellness of each individual. Credit cards, mutual funds, annuities, student loans, and mortgages are all examples of financial instruments that may be used. However, this list is not exhaustive. The financial technology (fintech) business is likewise growing at a rapid rate, which is revolutionizing the ways in which individuals choose assets, acquire financial advice, and make payments. To successfully raise FI in this setting, it is essential to have a solid understanding of people's degrees of financial literacy and self-efficacy, as well as the amount to which their financial decision-making is impacted by factors such as their age, gender, and income.

We see ample of literature evidence is available on the financial inclusion, but a limited amount of empirical evidence is present explaining the mediating role of FSE with the accelerating factors of FI. This paper is pioneer in testing the influence that digital consumer protection can have on FI with respect to Pakistani market. It has been identified (Villasenor, West, & Lewis, 2015) that lack of transparency and fraud by telecom companies and mobile money operators have been blamed for people's reluctance to participate in the mobile money sector. Hence, it is important to look at this aspect so that appropriate action can be taken.

2. Literature Review
2.1 Theoretical Underpinnings
2.1.1. Financial literacy theory of financial inclusion
People will have a greater propensity to participate in formal financial systems, according to this hypothesis, which predicts that FL would have this effect. It argues that increasing the financial literacy of people via education is the most effective strategy to accomplish the goal of achieving financial inclusion. People who get a basic understanding of personal finance would seek out formal financial services whenever and wherever they can get their hands on them (Ozili, 2020). The purpose of this research is to put this idea to the test by determining whether or not an increased level of financial literacy enhances the scale of financial independence (FI).

2.1.2. Collaborative intervention theory of financial inclusion

This idea proposes that members of the underserved population should be provided with access to formal financial services via the coordinated efforts of a number of different partners (Ozili, 2020). The hypothesis suggests that it will need a concerted effort on the part of a large number of different stakeholders in order to include the underserved population into the formal financial system. The premise of this theory will be put to the test in this research in order to determine whether or not the provision of mobile money services by banks and agents plays a part in raising the overall degree of financial inclusion.

2.1.3. Restricted Access / Limited Control (RALC)

Every person or organization is entitled to privacy if and only to the extent that information about them is shielded from outside intervention, supervision, and monitoring under certain criteria or situations (Christians, 2010). According to this notion, access to personal information is restricted, making it impossible to exploit it for one's own or another person's advantage. A service provider must use consumer privacy information carefully (Kanta & Arifin, 2022). It implies that people's belief in the non-availability of digital customer protection may cause them to refrain from using financial technology. This study will test whether the assurance of digital protection to customers can upsurge the scale of FI.

2.2 Hypothesis Development

2.2.1 Financial literacy and financial inclusion

The most important issue contributing to the financial isolation of the people is not having access to financial services. The alleviation of poverty is closely related to financial inclusion, according to (Chao, Kou, Peng, & Viedmade, 2021). However, both formal and informal financial institutions are in charge of giving those who are financially excluded access to money (Hussain, Salia, & Karim, 2018). According to (Bongomin, Munene, & Yourougou, 2020; Koomson, Villano, & Hadley, 2019; Grohmann, Klühs, & Menkhoff, 2018), financial illiteracy is the main barrier to financial inclusion. Both variables have been studied by various researchers in different countries having different levels of development. For example, the findings indicated that financial literacy is a significant driver of FI using 2016 survey data collected in Kenya and Tanzania (Grohmann, Klühs, & Menkhoff, 2018). Similarly, (Akakpo, Amidu, Coffie, & Abor, 2022) discovered that financial literacy positively promotes financial inclusion using 2018 survey data collected in Ghana.

(Noor, Batool, & Arshad, 2020) checked the influence of FL on financial account ownership behavior in Pakistan by using the responses of 564 adults in the division of Sahiwal. The results indicated that an individual's account ownership model is positively correlated with their level of financial knowledge in the chosen group. In Pakistan, it is also discovered that gender, marital status, education, occupation, and income level significantly influence people's account ownership behavior.

In order to foster financial inclusion, several developing countries are attempting to enhance people's access to financial products and services. However, research suggests that increasing the availability of the same per se may not benefit to broaden financial inclusion unless significant endeavors are undertaken to promote FL. This is because those who have financial literacy tend to use and value the financial products and services. (Fanta & Mutsonziwa, 2021) using survey data of a demand side FI indicated a strong association between FL and FI. Similarly, Using Bangladeshi rural population data, (Hasan, Le, & Hoque, 2021) examined the effects of financial literacy on access to financial resources through banks, microfinance institutes, and fintech. The empirical findings demonstrated that having knowledge of numerous financial services elements significantly influenced one's ability to access financial resources. Hence, we propose that:

H1: Financial literacy has significant positive influence on financial inclusion

2.2.2. Mobile money usage and Financial Inclusion

According to researchers like (Aker & Mbiti, 2010; Wesolowski, Eagle, Noor, & Snow, 2012), access to financial services is vital for growth since it improves resource mobilization for profitable investment and makes it easier for families to smooth out their consumption. Due to the high cost of providing the services, particularly in rural regions, the majority of the people in developing nations is not able to receive financial services. According to (Okeleke, 2019), mobile money has been a most important driver of the advancement of financial inclusion. The majority of the unbanked population has used mobile phone accounts to access financial services, particularly in Pakistan.

In fact, (CGAP, 2018) contends that the usage of digital financial services(DFS), such as mobile money, can be considerably more accessible and less expensive than traditional financial services in order to supply financial services to what appears to be a sizable unbanked population in rural areas. Through the use of mobile money, unbanked and underserved populations can have access to formal financial services that will improve their quality of life.

Mobile money is positioned as a means of addressing at least two significant issues, namely the cost of banking services (Arestoff & Venet, 2017) and accessibility to banking infrastructures (Weil, 2014). On the basis of eighteen branchless financial service providers (Pickens & Mckay, 2010) estimate that the average cost of branchless financial service providers is 19 percent less expensive than the cost of banking paid by banks. Additionally, the network of mobile money providers fills in for the absence of a banking infrastructure by enabling access to financial services. The staff of the service providers' businesses and the cash-in/cash-out facilities at retail establishments, which let customers deposit and withdraw cash, are both considered the agents. According to a GSMA report on the condition of the mobile money market, bank branches were outnumbered by mobile money agents in 98 countries (Awanis, Lowe, Andersson-Manjang, & Lindsey, 2022). This includes Tanzania, which only has 504 bank branches and 17,541 mobile money agents (Castri & Gidvani, 2014). For every 100,000 adults in Pakistan, there are roughly five ATMs and nine commercial bank branches, compared to 84 active agent locations (Rashid, 2015).

Recently, mobile money has drawn attention as a strategy for financial inclusion (Apiors & Suzuki, 2022). Mobile money use have been unevenly distributed throughout the developing world; studies on the extent of its use have primarily focused on Kenya and neighboring East African nations (Suárez 2016). (Bongomin & Ntayi, 2020) demonstrated that the adoption and use of mobile money have a substantial impact on financial inclusion. In conclusion, offering digital financial services, like mobile money, to the unbanked people in rural areas can be far more useful and affordable, solving the issue of expensive delivery of financial services to them. By providing underserved and unbanked communities with access to formal financial services that can improve their level of living, mobile money can benefit these communities. Hence, we hypothesize that:

H2: Mobile money usage has significant positive influence on Financial inclusion

2.2.3 Digital consumer protection (DCP) and financial inclusion

DCP is a crucial component of inclusive financial systems because it makes sure that current users of formal financial services are treated fairly and transparently in the marketplace to increase new consumers' trust in the formal financial services and the providers (Mazer & McKee, 2017). The incidence and extent of cyberattacks, which pose a severe threat to the security and privacy of customer data on digital channels, are growing as a result of the widespread usage of digital technologies like mobile payments. Similar to this, customers' loss of trust in using digital networks for transactional reasons is a result of their knowing that their data is susceptible to hackers (Caruana, 2016).

Therefore, it is suggested by (Njoroge, 2016; Kikulwe, Fischer, & Qaim, 2014; Mugambi, Njunge, & Yang, 2014) that consumer protection be implemented in the digital financial system to ensure the consumers' safety and security.

In order to increase the amount of voluntary exclusion from the DFS due to worries about ex post data security and losses from misdirected transactions, a robust framework for consumer protection that applies to DFS is essential (Malady, 2016). (Mazer & Rowan, 2016) go on to claim that since both competition and consumer protection measures frequently have the same objective of boosting consumer welfare, they can actually reinforce one another. For instance, regulating pricing transparency might encourage consumers to compare prices, which in turn encourages greater market competition.

An additional argument made by (CGAP, 2018) is that empowering users with financial literacy results in widespread access to and use of mobile money services. Particularly in the digital age, customers who are financially knowledgeable can comprehend what it implies and what it takes to be financially strong. This will help them choose which financial services connected to mobile money will best suit their needs. As a result, particularly in poor nations, they can make demands for better goods and to only work with suppliers that exhibit ethical business practices, making them crucial instruments and partners for boosting FI and sound governance in the Fintech ecosystem. According to the findings of (Bongomin & Ntayi, 2020), the customers must be protected from the risks associated with the digital financial system in order to feel more confident about using it to obtain financial goods and services. Therefore, protecting customers is crucial since it may damage their trust in buying items from service providers. As a result, we hypothesize the following:

H3: Digital Consumer Protection has a significant positive influence on financial inclusion.

2.2.4. Financial Self efficacy (FSE) as a mediator

Self-efficacy, which is defined as the degree of confidence in one's capacity to cope with a financial issue without being inundated, is demonstrated by empirical research to be one of the key elements that drives financial behaviour (Farrell, Lisa, & Risse, 2016). The social cognitive theory, which examines how cognitive thinking influences people's motivation and financial behaviour, defines financial self-efficacy (FSE) (Travis, Justin, Geden, & Bunde, 2020). The FSE concept supports the social cognitive theory, which claims that "self-efficacy has stronger predictive value when it is domain-specific and impacts individual tasks or decisions both directly and indirectly to actualize the favourable outcomes that people often anticipate" (Bandura, 2012).

Many academicians contend that people who perceive themselves as having greater FSE tend to be better at insight and analysis, are able to make more informed investment decisions, and feel happier and more content overall. (Shim, Serido, & Lee, 2018) proposed the hypothesis that individuals with higher levels of FSE are better able to manage the risks associated with investments, and Montford and Goldsmith (2016) found that there is high possibility of college students with higher levels of FSE to use financial assets, such as investment and savings products. The association between Australian women's FSE and financial behaviour was examined in (Farrell, Lisa, & Risse, 2016).

FSE helps people to have optimistic expectations about their capacity for managing their finances and to actively respond to varied problems with assurance and restraint (Kadoya & Khan, 2020). Higher FSE makes people more likely to properly assess possibilities and problems. They won't follow short-term gains mindlessly or be easily duped by incorrect information (Shim, Serido, & Lee, 2018). Additionally, FSE influences people's cognitive function and aids in their ability to accurately assess the returns and dangers of investments and consumption decisions, motivating them to make responsible financial judgments that will pay off in the long run (Oaten & Cheng, 2007). Rendering to a number of researchers (Atlas, Lu, Micu, & Porto, 2019; Limbu & Sato, 2019), the main sources of self-efficacy are grounded knowledge, experience, and emotional states. Financial literacy has been shown to improve financial confidence by lowering negative cognition and emotion in financial decision-making. People must try to make accurate decisions in a constrained amount of time since financial decision-making frequently involves considerable risk and uncertainty. Higher levels of financial literacy may motivate people to face obstacles, assist them in objectively assessing possibilities and difficulties, and guide them in making the best financial decisions

(Mindra, Moya, Zuze, & Kodongo, 2017).

H4: Financial self-efficacy (FSE) significantly mediates the relationship between Financial Literacy and financial inclusion.

H5: Financial self-efficacy (FSE) significantly mediates the relationship between Mobile money usage and financial inclusion.

H6: Financial self-efficacy (FSE) significantly mediates the relationship between Digital Consumer Protection and financial inclusion.
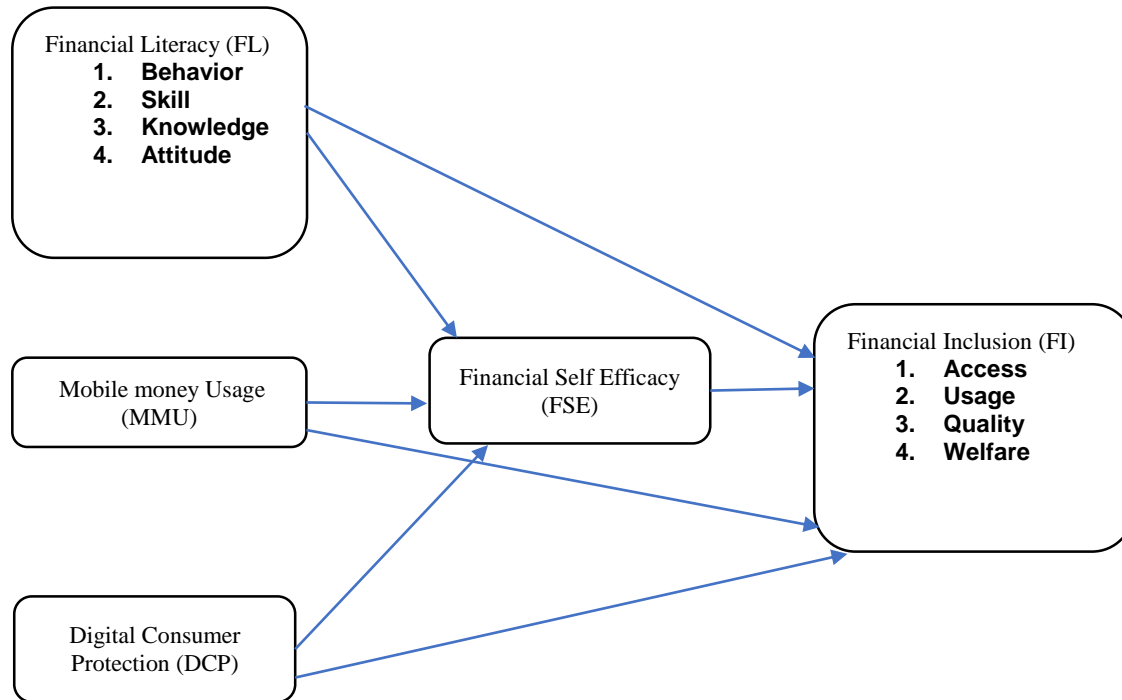

Figure 1: Conceptual Framework

3. Methodology

Using the "post-positivism philosophy" which looks into testing of existing theories, an approach in the form of a survey was utilized to gather data from the respondents by having them fill out a questionnaire on their own. This approach was used to get real time data and responses which will help to reach to the valuable findings. According to Haidar and Fang (2019), the questionnaire was given out and completed in English since it is the formal language used in Pakistan in addition to Urdu, which is the official language. In Pakistan, educational institutions such as "secondary schools, high schools, colleges, and universities" all employ English as a primary language and as a medium of teaching (Haidar & Fang, 2019). The sample consists of respondents who are at least 18 years old and who have attained at least a matriculation degree, which indicates that they have finished at least 10 years of study. Participants' eligibility was established by their answers to four prescreening questions designed to reveal whether or not they are already utilizing any banking services or have any interest in doing so. These questions were: whether or not they have any bank/wallet account; whether or not they are aware about banks services; whether or not they have ever performed any payment transaction; and finally, the name of the bank or mobile money where they own an account. The replies of people who did not have bank accounts were also included into the data in order to determine the elements that could sway non-account holders to start using financial goods and services. It was only possible for respondents to fill out the survey form if they were Pakistani and older than 18 years of age. Hence, our sample approach may be classed as a purposive sampling strategy.

A Google Forms-hosted online survey was shared with 680 respondents using various social media platforms including "Facebook, Instagram, Twitter, and WhatsApp groups". A total of 434 replies were submitted, giving us

a response rate of 63.82%. However, 28 replies were disregarded owing to the fact that they lacked necessary information; hence, only 406 responses were used for the further research. From January through May of 2023, a total of five months' worth of data were collected.

The questionnaire was pretested (on sixty people) to establish "validity and reliability" (using AVE and Cronbach's alpha, respectively) before the main study was conducted (Noor, Batool, & Arshad, 2020). Cronbach's alpha ranged from 0.80 to 0.895 across all components, and average variance extracted (AVE) was more than 0.50, hence the research found no issues with the "validity and reliability" of the questionnaire. This indicated that the questionnaire was robust.

Adults, including respondents from Generation X, Generation Z, and Millennials, were polled for this study to compile the data. According to Beresford and Sellas (2023), everyone born between 1981 and 1996 is considered a Millennial; everyone born between 1965 and 1980 is considered a member of Generation X; and anyone born between 1997 and 2012 is considered a member of Generation Z, with a maximum age of 24. The fact that members of these three generations often interact with money and prefer user-friendly banking goods and services is the primary motivation for selecting members of these generations. In addition, the biggest financial institutions have these demographics in mind while developing their marketing strategies. In addition, the majority of banks are increasingly focusing on these demographics with the help of their online banking applications. Findings from this research will help banks better comprehend why their more conventional services (i.e., branch banking) are not more widely used.

Table 1: Demographic profile of the respondents

Profile	Frequency	Percentage
Gender		
Male	231	57%
Female	175	43%
Age		
18–24 (Gen Z)	138	34%
25–40 (Millennials)	118	29%
41-58 (Gen X)	150	37%
Education		
Matriculation/O level	61	15%
Intermediate/A level	89	22%
Undergraduate	97	24%
Graduate	138	34%
Doctorate	20	5%
Monthly Income		
Under 20000 Rs. /Month	73.08	18%
20001 to 40000 Rs. /Month	60.9	15%
40001 to 60000 Rs. /Month	85.26	21%
60001 to 800000 Rs. /Month	113.68	28%
80001 to 100000 Rs. /Month	52.78	13%
Above 100000 Rs. /Month	20.3	5%
Financial Experience		
Yes	272	67%
No	133	33%
Financial socialization agents		

Family	150	37%
Peers	114	28%
Educational institute	61	15%
Media	81	20%

3.1. Measures

The questionnaire was broken up into three different pieces. The first part of the document is a cover letter that provides an overview of the research. Participants were given the assurance that their participation was entirely voluntary and that the information that might be used to identify them would be kept anonymous. In this part, the meanings of important terminology such as "FI," "MMU," and "DCP" are laid forth for the reader. The measuring scales for the constructs that were used in this experiment were discussed in the second portion of the report. This portion starts out with some prescreening questions, and responders who were able to supply the name of a bank or mobile money account were given instructions on how to manufacture things. Each question was graded using a Likert scale with five points that ranged from strongly disagree (1) to strongly agree (5).

This study has adapted the questionnaire. The source of each construct is given in Table 2.

Table 2: Measurement Scales

Construct	References
Financial Inclusion	Bongomin, Ntayi, & Malinga, 2020)
Financial Literacy	(Okello, Munene, Ntayi, & Malinga, 2017)
Financial Self-efficacy	(Mindra & Moya, 2017)
Mobile Money Usage	(Bongomin , Ntayi, Munene, & Malinga, 2018)
Digital Consumer Protection	(Bongomin & Ntayi, 2020)

3.2. Data Analysis

The data was analyzed in three stages: "descriptive, measurement model, and structural model". Descriptive analysis of the respondents' demographic characteristics was performed using SPSS. Measurement and structural analysis were performed using partial least square structural equation modelling (PLS-SEM). The exploratory aspect of the study influenced the decision. Additionally, PLS-SEM was utilized in this research because of its resilience in dealing with complex interactions, skewed sample distribution, and small sample size (Chin, 1998). Also, PLS-SEM is useful for non-normal data, a study aiming to test a model for precative power, a complex model with several mediators and moderators, and a study extending an established theory for further exploration (Hair, Risher, et al., 2019). Table 1 provides a breakdown of the respondents' demographics.

Table 3: Reliability, multicollinearity and validity

Variables	Composite reliability (rho_c)	Variance inflation factor (VIF)		Average variance extracted (AVE)
		Financial Inclusion (FI)	Financial Self Efficacy (FSE)	
Financial Literacy (FL)	0.8	1.393	1.251	0.506
Financial Self Efficacy (FSE)	0.83	1.234	-	0.55
Mobile money Usage (MMU)	0.895	1.424	1.421	0.551
Digital Consumer Protection (DCP)	0.856	1.327	1.303	0.501
Financial Inclusion (FI)	0.831	-	-	0.554

4. Results and Discussion

4.1 Measurement model

4.1.1 Reliability and multicollinearity

Using CR (composite reliability), the internal consistency (reliability) of Smart PLS was evaluated (Rafique, Khan, Soomro, & Masood, 2022). According to (Collier, 2020; Hair, Babin, Anderson, & Black, 2019), Cronbach's alpha has a tendency to underestimate or overstate values of internal consistency, and a preferable option is CR, particularly in SEM. This is because Cronbach's alpha uses a simple average to calculate the values. Therefore, CR was used in order to further evaluate the trustworthiness of the internal consistency. According to Table 2, the CR of all of the constructions varied from 0.77 to 0.895, with a cutoff of 0.70 (Collier, 2020; Hair, Babin, Anderson, and Black, 2019).

The factor loadings were used to evaluate CR, and the results were presented in Appendix A with a range that went from 0.577 to 0.824. According to Collier (2020), an appropriate measure of latent factors is one in which the majority of factor loadings are greater than 0.6. After that, multicollinearity was investigated by doing a multiple linear regression analysis in SPSS utilising variance inflation factor (VIF) values as the dependent variable. All of the constructs are multicollinear since the VIF ranged from 1.251 to 1.424, as shown in Table 3, using a threshold of 10 (Collier, 2020). Because the minimum VIF was 1.251 and the maximum VIF was 1.424.

4.1.2. Validity

The CR and AVE values, shown in Tables 3 and 4, were used to establish convergent validity. The structures' CRs were all over the threshold of 0.70, falling within the allowable range of 0.800 to 0.895. (Collier, 2020) found that the AVE of the constructions was between 0.500 and 0.554, with a cutoff value of 0.500. Convergent validity has been shown as both the CR and AVE of the constructs fall inside their respective ranges (Collier, 2020). The AVE was then used to assess the reliability of the test's ability to distinguish across groups. The HTMT was also used to further assess discriminant validity, as shown in Tables 4 below. According to (Collier, 2020), the correlation coefficient between rows and columns is less than the square root of the AVE in diagonals. This can be shown in Table 4.

Table 4: Heterotrait–monotrait (HTMT)

	DCP	FI	FL	FSE	MMU
Digital Consumer Protection					
Financial Inclusion	0.451				
Financial Literacy	0.424	0.594			
Financial Self Efficacy	0.362	0.513	0.564		
Mobile money Usage	0.541	0.494	0.534	0.323	

4.2. Common Method Bias

We assessed for common method bias (CMB) before moving on to the structural model since CMB has the potential to exaggerate or understate the degree of correlation that exists between observed variables in the research (Collier, 2020). First, in SPSS, we conducted an exploratory factor analysis (EFA) using the single-component test proposed by Harman. According to the findings of the research, there is only one component that may account for the 25.7% variation, which is far lower than the cutoff value of 50% (Kock, 2015). In addition to that, a comprehensive collinearity test was carried out in SPSS by making use of the regression analysis. This model does not have to worry about CMB since the greatest value of the VIF (1.424) is less than the threshold value (3.300) found in a study by (Farivar, Wang, & Yuan, 2021). The assumption of normality in the data is not necessary for PLS-SEM since it is a non-parametric test (Hair et al., 2017; Orcan, 2020).

4.3. Structural Model

The boot-strapping methodology of 5000 sub-samples was used in order to complete the structural modelling that was done using SmartPLS. Table 5 and Figure 1 have been updated to reflect the outcomes of the study. T-statistics and p-values formed the foundation for the determination of whether or not hypotheses should be accepted or rejected. According to Haenlein and Kaplan's (2004) research, the acceptance requirements for t-statistics are defined as having to be 1.65 or above. In the present investigation, all hypotheses are being accepted with the exception of the MMU -> FSE -> FI hypothesis since their p-values are lower than 0.05 and their t-values are higher than 1.65.

The first hypothesis examines the influence that FL has on the FI of adults, and this hypothesis is accepted (the p-value for this test was 0.000, and the t-value was 3.672). The link seems to have a very high level of significance, and it is responsible for explaining 23.8% of the variation in the data. The second hypothesis examines the influence that MMU has on the FI of adults and demonstrates that this influence seems to be substantial (p value = 0.001, t value = 3.040). The third hypothesis, which discusses the considerable influence that DCP has on FI in adults and has a p-value of 0.002 and a t-value of 2.955, is likewise accepted. This association seems to have a very high level of significance, as it accounts for 36.3% of the variation in the data. According to Hypothesis 4, FSE functions as a mediator between FL and FI. This hypothesis seems to have a high level of significance (p-value = 0.001, t-value = 3.282), and the percentage of variation that it explains is 6.3%. The evidence does not support Hypothesis 5, which states that FSE works as a mediator between MMU and FI. The p-value for this hypothesis is more than 0.000 (0.204), and the t-value is 0.826. This leads us to accept Hypothesis 6, which states that FSE works as a mediator between DCP and FI. The p-value for this hypothesis is 0.014, and the t-value is 2.209.
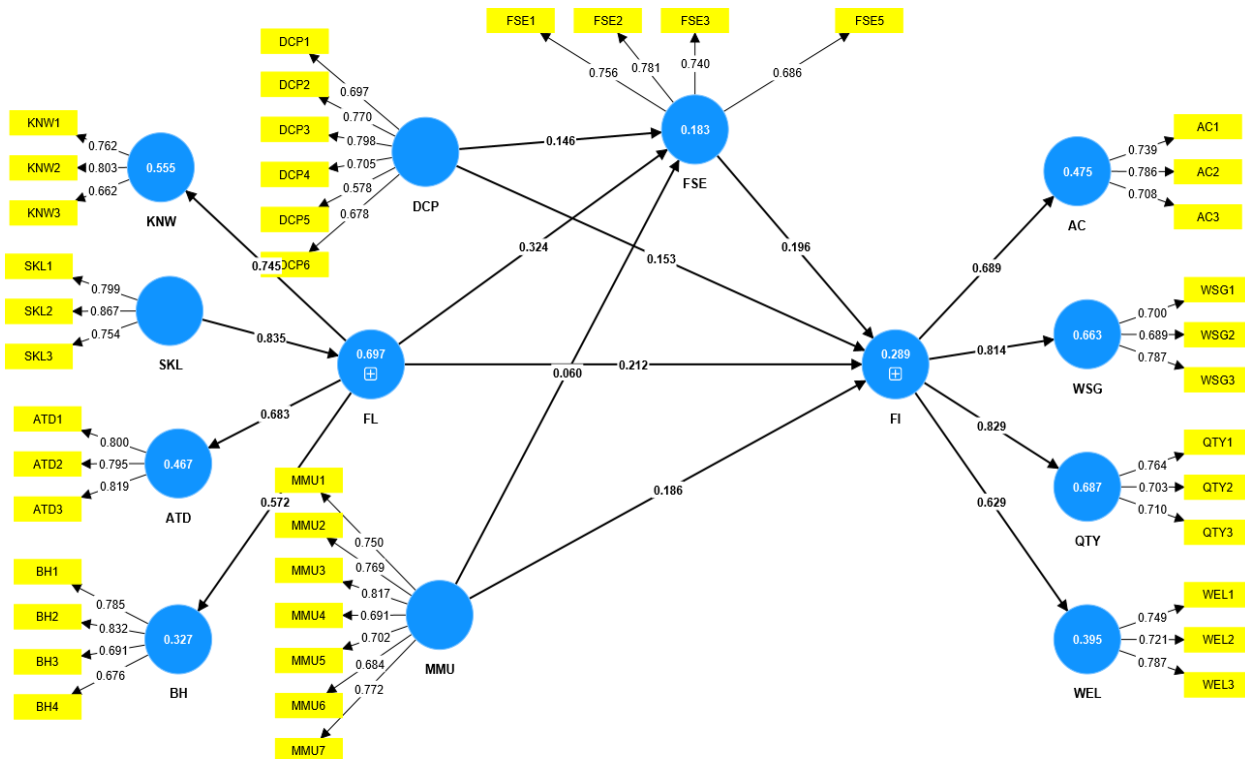

Figure 2: Structural model

Table 5: Hypotheses testing using 5000 sub-samples

Path	β	Sample mean (M)	Standard deviation (STDEV)	T statistics	P values
FL -> FI	0.239	0.238	0.065	3.672	0.000
MMU -> FI	0.181	0.186	0.060	3.040	0.001

DCP -> FI	0.146	0.150	0.049	2.955	0.002
FL -> FSE -> FI	0.064	0.063	0.019	3.282	0.001
MMU -> FSE -> FI	0.010	0.010	0.012	0.826	0.204
DCP -> FSE -> FI	0.026	0.027	0.012	2.209	0.014

5. Discussions and Conclusion

Finding out what influences individuals to use and adopt financial goods and services is the primary goal of this research. Information was gathered from Pakistani adults between January and June of 2023. Each of the study's hypotheses, and their respective test findings, are discussed in the next section.

Findings from this study provide credence to H1, the hypothesis that more educated consumers would benefit from more trustworthy and effective financial services. Adults need a certain level of financial literacy to effectively evaluate and choose from a variety of banking, saving, credit (loan), and payment options. In addition, (Khawar & Sarwar, 2021; Lusardi, 2019) indicates that literacy in financial matters empowers individuals by preparing them to make educated decisions about their own finances and the products and services available to them. This enables adults to make well-informed financial choices that maximize the value of their finances. Additionally, it was proved by (Morshadul Hasan, 2021) that access to financial resources is positively impacted by financial literacy. One of the most significant things found to enhance FI was education on personal finance. It is anticipated that this will make a substantial contribution towards the advancement of financial communication for persons living in remote areas and with lower incomes. Having the appropriate information about the various financial services was a significant factor in gaining access to financial resources and providing more financial services (Morshadul Hasan, 2021).

According to (Bongomina, Ntayi, Munene, and Malinga, 2017), the results of this study's investigation into H2 are consistent with their findings. It is said that the use of mobile money has a strong and beneficial relationship to the inclusion of financial services in rural Uganda. In addition, it was reported by (Karandaaz, 2023) that the huge rise in the usage of mobile money wallets is partly to blame for the 30% increase in Pakistan's financial inclusion. This acceptance of mobile money wallets has notably taken up in the wake of COVID-19. According to (Khan & Khan, 2023), the percentage of people using mobile wallets in Pakistan climbed from 4% in 2017 to 19% in 2022. The discovery lends credence to the statistics that was only recently made public by the (Group, 2017), which reveals that the overall level of financial inclusion had a meteoric rise between 2014 and 2017, as a direct result of the revolution in mobile money. In point of fact, (Tay, Tai, & Tan, 2022) claim that the mobile-enabled digital cash transfer technology has been crucial in boosting access to financial services internationally, particularly for those working in the informal sector such as the MSMEs. This is especially true for those working in developing countries. Due to the absence of digital consumer protection in Pakistan, online e-commerce is very vulnerable to a variety of different types of fraud. This includes phishing schemes, in which con artists send bogus emails or messages to customers, appearing to be from reputable e-commerce companies or banks, in an attempt to fool consumers into divulging critical information like as passwords and credit card numbers (Jabbar, 2023). Adults who engage in these kinds of activities are unable to make consistent use of the goods and services offered by conventional financial institutions. The findings of the research provide evidence in favour of the previously indicated phenomena via Hypothesis 3, which asserts that DCP strongly affects FI. This indicates that consumers' data and money are more likely to continue using the goods and services offered by financial institutions when they are protected by effective security measures.

According to (Mindra & Moya, 2017), persons who have high levels of financial literacy and a good financial attitude are more likely to have emotions of empowerment and exercise evaluative judgement when it comes to making choices about their savings, credit, insurance, and remittances. The findings of this research, which were obtained by testing Hypothesis 4, provide arguments that indicate the usefulness of financial literacy towards the

achievement of financial inclusion techniques, which in turn lead to beneficial improvements in the lives of individuals. According to (Mindra & Moya, 2017), the amount of self-assurance that person has in the process of determining their incorporation into the official financial system is a clear factor that stimulates this process.

This indicates that the hypothesis that financial self-efficacy acts as a mediator between the association between MMU and FI is not supported by the findings of the research. It seems from this that the use of mobile money services by adults directly contributes to an increase in the rate of financial inclusion, even among those who are unsure of their decision-making skills. It also suggests that individuals are more inclined to utilise mobile money services despite having little or no control over their own financial situation. The findings further explain that in actuality, people in Pakistan own financial accounts normally in order to receive salaries, to receive loans, and to make payments, and that financial self-efficacy, which refers to an individual's self-confidence in relation to the usage of financial products, does not matter in this context (Noor, Batool, & Arshad, 2020).

Although strong digital protection does serve to encourage consumers to utilise financial goods and services, the inclusion of financial self-efficacy strengthens this association, which is confirmed by the study's Hypothesis No. 6 (H6). According to (Mindra, Moya, Zuze, & Kodongo, 2017), a consumer's high degree of confidence in their capacity to handle responsibilities related to financial services is connected with more financial inclusion. This is because greater financial inclusion allows for greater access to financial services. In most cases, the capacity to overcome any challenges that are involved with achieving a desired result is essential for a person to be able to successfully complete a certain activity. Thus, it seems that building trust among individuals is crucial to achieving financial inclusion. In addition, customers with very high levels of self-efficacy are more confident in their capacity to access and use the financial services provided to them, even if they have difficulties doing so. People who are confident in their ability to manage their finances are more likely to focus on the opportunities available to them rather than the challenges they may face (Mindra, Moya, Zuze, & Kodongo, 2017). It's important to remember that people with strong FSE tend to be more proactive in their own financial well-being.

6. Implications and Recommendations

According to the results of the research, empirical evidence is presented about the significance of FSE as a mediator for the determinants of financial inclusion among Pakistani adults. The results contribute to a larger topic on FI, notably emphasizing the role of confidence and self-assurance when making financial choices. This is in addition to the importance of financial literacy. It is considered that persons who have self-confidence in their money management abilities as well as their ability to create goals would be more likely to comfortably consider employing professional financial services.

In the theoretical realm, this study contributes to our understanding of the role of financial self-efficacy as a mediator of the relationships between 1) financial literacy and FI 2) digital consumer protection and FI. It is the first of these connections that is the primary focus of this research. Furthermore, the findings demonstrate that FSE, a metric of a person's confidence in their capacity to utilize financial services, is essential to and a valid mediator in these connections between FI and individual financial consumers. A person's self-efficacy with money refers to how well they believe they can manage their finances.

According to the findings of the research, consumer protection online has the potential to expand access to financial services. Indeed, developing confidence in the utilization of digital financial goods and services requires strong consumer protection that assures appropriate market behavior and upholds consumer protection. This is one of the most important steps in the process. The maintenance of customer data via the mobile money network may contribute to the development of confidence in the platform's ongoing adoption and use. It is essential that customers' data transmitted over mobile networks be protected from being accessed and used inappropriately by MNO staff and other third parties. "Mobile network operators" (MNOs) are responsible for designing data

protection procedures to prevent unauthorized access to and use of client data.

7. Limitations and Future Research

Despite the fact that it has made major contributions to the field of research, the present study does have a few shortcomings. The study is reliant only on quantitative data, and the conclusions are explicitly based on a cross-sectional research methodology. As a result, qualitative data and longitudinal survey design are not taken into consideration in any way. In subsequent research, it could be useful to make use of qualitative data as well as data gathered using a longitudinal study design. In addition, in next research, samples may be taken from other demographic groups that are socially and economically marginalized, such as the handicapped and refugees.

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