

Designing A Construct To Measure Financial Inclusion In Pakistan: Insights From  
Qualitative And Quantitative Analysis

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### Abstract

While Pakistan is trying to improve its level of financial inclusion, there still remains a big gap in the female population which is unbanked. In order to bridge it, the State Bank of Pakistan is drafting policies which would lead to increased financial inclusion by promoting an equal number of male and female financial agents and encouraging the use of technology. However, there is no construct available which measures financial inclusion specifically for Pakistan. This study is aimed to design a construct that can be used to measure financial inclusion through 16 qualitative interviews and 250 quantitative questionnaires. After compiling the data and analyzing it, this study gives a measurement tool which can be used by policy makers and future researchers. This study has validated themes of Awareness (financial literacy), Barriers, Use of technology, Investments and Savings, Loans, and Comprehension (of processes and services).

**Key words:** Financial Inclusion, Financial Literacy, Financial Services, regulations, accessibility, knowledge, barriers.

### Introduction

The 2.5 billion adults (around the world) without access to financial services are disproportionately women and young people. There are at least 44 million unbanked or underbanked people in the United States. – Ajaypal Singh Banga (K. Allen, 2014; Rodgers, Whitney Pennington, 2020). Almost, 79% of Pakistani adults so not have access to financial services and of those who do, a low percentage actually use formal financial institutes. (Poverty Alleviation and Social Safety Division & Pakistan, n.d.). World over, there is a lot more

inclusivity and gender norms are becoming more blurred with each passing year. A survey by the World Bank in 2017 concluded that only 7% of the population of women in Pakistan had a formal financial account in 2017 (The World Bank, 2018). Women in Pakistan had less financial knowledge in comparison and lacked trust in Financial Institutions (FI) (Sohail, 2021).

To increase financial inclusivity in Pakistan, The State Bank of Pakistan adopted the National Financial Inclusion Strategy (NFIS) in 2015, after a study showed that only 15% of Pakistani population was banked (State Bank of Pakistan, 2015, 2016). It consisted of a 100-day agenda, outlining different actions the government decided to undertake to increase financial inclusion. However, this strategy was designed with an inclination towards giving incentives to farmers, people looking for housing and spreading financial reach towards all the unbanked population instead of dividing them into gender groups. Recently, on the docket for discussion at the State Bank of Pakistan was a draft (Pakistan State Bank of Pakistan, 2020) policy to increase banking equality by introducing more female representatives in different financial institutions.

Certainly, the efforts by the State Bank of Pakistan are significant contributions towards greater financial inclusivity in Pakistan. There exists no tools for measuring financial inclusion of Pakistan in a comprehensive manner and no clear criteria for measuring financial inclusion of Pakistan-to address this gap in the scholarly and policy literature, therefore, this study, first-of-its kind mixed-methods study on measuring financial inclusion in Pakistan has been conducted. In terms of government regulation, a study in Egypt showed that government E-services helped with affordability, efficiency and responsiveness but not accessibility. (El Gohary, 2019) This might be the reason our construct was also dropped. Another construct which was dropped was the one for Digital Financial Systems (DFS) such as Easy Paisa and Jazz Cash. Considering the recent government policies regarding DFS such as Raast which is in place now to increase the already increasing system which recorded 36 million transactions in the first quarter of the fiscal year, 140% more than last year, (Dawn, 2021) this came as a surprise to us.

### Literature Review

Financial Inclusion defines the access to and use of safe, sustainable and quality formal financial products and services by all economic agents in the society. (Cabeza-García et al., 2019) . It is argued that by promoting financial inclusion, we can help address inequality in the economy

(Demirguc-Kunt et al., 2015) There are many financial products and services in the market, for the sake of this study bank accounts, ATM Services, credit cards and loans and investments are considered (Cabeza-García et al., 2019; Danns, Donna E.; Danns, 2017)

Breaking down the definition of financial inclusion, we look at two areas. The first is having the knowledge, otherwise known as Financial Literacy. As per Organization for Economic Co-operation and Development (OECD), Financial Literacy consists of the consciousness, knowledge, ability, attitude and behavior that are necessary for making financial decisions.(Atkinson & Messy, 2012) . Grouped financial literacy into three dimensions, financial knowledge, financial attitude and financial behavior. Financial education plays an important role in accumulating financial wealth as it provides the capacity to use the knowledge and abilities needed to make decisions to manage their personal finances. (Agarwalla et al., 2017; Andrews, 2021; Wesley Mendes-Da-Silva, Wilson Toshiro Nakamura, 2012) Researchers argue that financial education begins at home through parents and it plays a key role especially in the level of financial literacy for women. It has been found that a hands-on mentoring approach during childhood leads to an individual having healthier financial attitudes towards matters. Consumer behavior and habits are influenced, both directly and indirectly, by parents. This is also true in the case of handling money and attitudes towards savings and investments. (Klatt, 2009; kmeier, 2007; Norvilitis & MacLean, 2010). Other social agents that impact financial behavior are siblings, spouses, school, friends, workplace colleagues, culture and popular media (Klatt, 2009; kmeier, 2007; Norvilitis & MacLean, 2010). (Tang, Ning; Peter, 2015) found a positive impact of parents' financial experience and financial education on an individual's financial knowledge. However, there is no significant relation between financial outcomes and state mandated personal finance courses in high schools (Cole et al., 2016; Moreno-Herrero et al., 2018)

However, Financial literacy is not only limited to knowledge. It also incorporates analyzing and having the skill, motivation and ability to make informed decisions to improve the financial situation of an individual in order for them to participate in an economic life (Garg & Singh, 2018). Similar to having knowledge, having the ability to analyze and make good economic decisions is found to be positively related to parental engagement but also their understanding of the value of savings and being exposed to financial products such as bank accounts. (Moreno-Herrero et al., 2018) .It would be illogical to try to understand financial inclusion without

considering the process of deliberation, evaluation and judging the financial services available. (Mindra & Moya, 2017). The ability to analyze and financial preparedness also grows with age, level of education and the habits they maintain through life, understanding their living costs, retirement expenses and the savings they would need. (Yoong et al., 2012)

The second area which we look at while speaking about financial inclusion is having the access to formal financial institutions, products and services. It has been found that in developing countries, gender norms and the location of financial institutes and services have a strong influence on financial inclusion. (Irakunda & Van Bergeijk, 2020). Without access to a variety of banking services and financial products to the entire population, financial inclusion cannot be achieved (Deb & Agrawal, 2017). Not having physical access to banks and financial institutes is quoted as a barrier to financial inclusion especially in the poor, unemployed, less educated, or rural population as they feel that the costs for visiting a financial institute are far greater than the benefit, they can gain from it (F. Allen et al., 2016). However, access is not only limited to geographical location. Generally, access to finance refers to the “availability of quality financial services at a reasonable cost” .The underprivileged population has reported that costs associated with using financial services are perceived as a barrier to owning an account because they simply do not have the money to open one.(F. Allen et al., 2016; Barr, Michael S., 2007)

Here, the entrance of mobile banking and electronic banking has brought great change to the market. Digital channels have been found to provide a cost-effective way to gain access to a wider coverage of financial services in India. (Deb & Agrawal, 2017). Adoption of mobile money banking has been found to have a significant effect on financial inclusion. Through the application of technology, costs associated with providing financial services can be lowered which can help bridge the gap in financial access to the underprivileged (Amoah et al., 2020; Okello Candiya Bongomin & Ntayi, 2020). The use of technology does, however, require training, engaging and building/retaining trust of customers, especially the underprivileged class who are new to technology in order for it to be successful. Digital consumer protection plays a significant part in the adoption of mobile money banking and usage of technology(Donovan, 2011; Okello Candiya Bongomin & Ntayi, 2020). The younger population with a certain level of education, income and gender are more likely to adapt to using mobile banking and technology and this has the potential to bring institutional transformation in the social, economic and social classes.(Amoah et al., 2020)

Financial inclusion has become key in many policy drafts and more than 60 countries aimed to launch a national policy strategy to attain Universal Financial Access in a decade's time starting in 2010.(Bhatia & Singh, 2019). Researchers found a positive relation between economic development and the population having access to bank accounts and credit cards.(Cabeza-García et al., 2019). Similarly, in a study conducted by (Haque & Zulfiqar, 2016)it was found that there is a positive correlation between financial inclusion and economic empowerment in the women of Pakistan. In this study, however, financial inclusion was regarded as a mix of financial literacy, attitude and wellbeing of women(Bhatia & Singh, 2019).

### Theoretical Framework

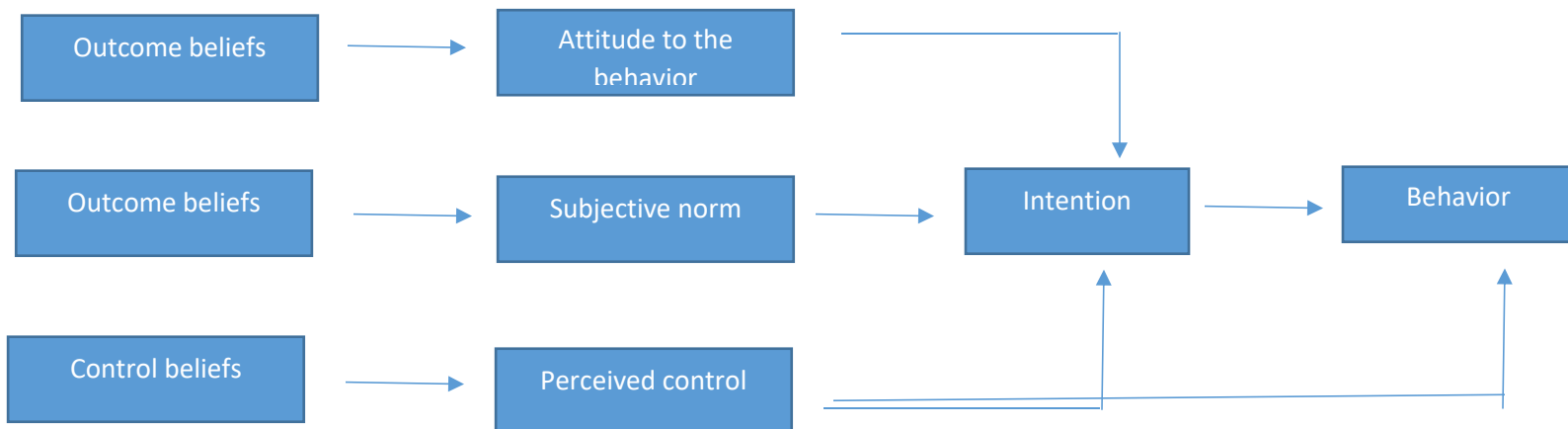
While looking at financial inclusion and understanding the barriers which prevent a 100% financially inclusive environment, it is important to look at some theories which explain human behavior and feelings toward financial services. This study has based its findings and the questionnaire on these. Some of them outlined are below:

This theory has its origins in the Theory of Reasoned Action which suggests that behavior can be predicted by understanding subjective norms and attitudes towards specific behaviors which form the intention behind behaviors which ultimately leads to the behavior itself (Fishbein, M., & Ajzen, 1975).Ajzen (Ajzen, 1991)then went on to modify the Theory of Reasoned Action and create the Theory of Planned Behavior, which now included Perceived Behavioral Control as a contribution to the formation of behavioral intentions and the actual behavior itself . The Theory of Planned Behaviors has been widely used to predict the behavior of consumers when it comes to internet banking (Adityasto & Baridwan, 2013), mobile banking (Luarn & Lin, 2005) and investment (Warsame & Ileri, 2016) Dividing the Theory of Planned Behavior, we can look it's three parts, attitude, social norms and the perceived behavioral control or locust of control, separately. It has been argued that the attitude impacts the likes or dislikes an individual feel about a certain idea or object and this can encourage similar behavior towards that object/idea by the individual. (Kotler, P., & Armstrong, 2012)

The second part of the theory suggests that subjective norms impact a person's behavior and the action they will take. This includes influence by ones' family, peers, and the culture of the society they live in. For example, a study found that if a role model/influencer had a positive attitude towards electronic banking, the individuals following that influencer would likely have

positive attitudes towards it as well. (Aboelmaged & Gebba, 2013). This, however, is arguable because another research conducted by (Ayudya & Wibowo, 2018) found that social norms do not hold a significant influence on adopting electronic banking. The degree to which social norms impact behavior is still under consideration but researchers argue that the role of culture plays a significant role in influencing economic development (Davis, 2016) and household financial behavior (Haliassos et al., 2017)

The third part of this theory is the Perceived Behavioral Control or the Locust of Control. This refers to the degree of control an individual feels they have over their decision. If individuals have strong internal LOCs they are more likely to act on their instincts. While there are conflicting results on the accuracy of the theory, it is still considered to be one of the primary and leading theories to explain financial behaviors. (Nguena, 2019) claims that this theory is a key theoretical explanation of the role innovative technologies play in promoting mobile banking in the modern world.



(Ajzen, 1991)

**Social Learning Theory**

The Social Learning Theory suggests that individuals develop cognitive skills required to achieve outcomes by observing others' behavior and receiving support. This process depends on individual capacity and a conducive environment (Bandura, 1977). Additionally, high social capital enhances social learning, promoting greater financial literacy and inclusion (Okello

Candiya Bongomin & Ntayi, 2020). Education and qualifications significantly influence financial inclusion, particularly for the underprivileged, who often lack access to conducive environments for financial participation. For instance, women in urban slums face economic risks, informal employment, and social fragmentation, hindering their financial inclusion despite having access to financial institutions (Agarwalla et al., 2017; Bhatia & Singh, 2019). Additionally, individuals raised in households where financial discussions were encouraged and given pocket money to manage tend to develop better financial management skills and savings habits later in life (Kagotho et al., 2017).

### **Vulnerable Group Theory of Financial Inclusion**

The theory emphasizes prioritizing vulnerable groups like the elderly, poor, youth, and women in policy-making. Providing savings accounts to families in urban slums enhances asset management, consumption, and education, empowering them financially (Chiapa, Carlos; Prina, Silvia; Parker, 2016). Similarly, facilitating women's access to safe, affordable credit in emerging economies accelerates economic growth, reduces income disparities, and fosters their agency in personal development (Cabeza-García et al., 2019; Kim, 2016).

### **Special Agent Theory of Financial Inclusion**

The theory posits that the complexity of the economy necessitates specialized agents to facilitate Financial Inclusion. These agents tailor financial information to suit the audience, emphasizing the importance of understanding the target consumer. (Klatt, 2009; Ozili, 2020)

### **Qualitative Research**

In order to measure the barriers towards financial inclusion of women in Pakistan and make a construct to measure financial inclusion in Pakistan, there were 16 interviews conducted of equal parts men and women whose ages ranged between 20 to 60 years.

### **Interview**

Initially, 10 interviews were conducted, revealing similar themes. To ensure consistency, 6 more interviews were added. The sample included equal numbers of males and females familiar with banking, insurance, and investments. Open-ended questions were used to identify common themes. The interviews aimed to explore the correlation between education, job type, and financial literacy, which is crucial for financial inclusion (Sharma, 2017). Additionally, the impact of technology on banking processes was examined. The interviews employed open-

ended questions to gauge perceptions of financial sector accessibility. Ensuring gender and age balance, participants spanned from 22 to 60 years. The Interviews were conducted and recorded in person. Following is the detail of the demographics of the interviewees.

S.No of Interview	Gender	Age	Qualification	Profession
1	Male	34	Masters Degree	Banker
2	Male	27	Bachelors Degree (Mass communication)	Marketing Head
3	Male	27	Bachelors Degree (Marketing/Media)	Sales Director
4	Female	26	Bachelors Degree	Entrepreneur/Management Level Employee
5	Male	22	Bachelors Degree	Freelancer
6	Female	30	Bachelors Degree	Freelancer
7	Male	42	Masters Degree (Mathematics)	Assistant Professor / Private university
8	Female	45	Masters Degree	Private job
9	Female	36	Masters Degree	Teaching / runs a clinic
10	Female	57	Bachelors Degree	Retired
11	Female	26	Bachelors Degree	Manager / NGO
12	Male	26	Masters Degree	Private job
13	Male	34	Bachelors Degree	Freelancer/Teacher
14	Female	25	Bachelors Degree	Teaching
15	Female	33	Bachelors Degree	Teaching
16	Male	30	Masters Degree	Private job

The interviews revealed intriguing insights. For instance, a banker mentioned the Government's initiative for banks to offer free "Asan Accounts," addressing a barrier to financial inclusion. However, this solution may not fully address the issue, as documentation requirements remain a



challenge for less educated, younger, or rural individuals, hindering their access to basic banking services (F. Allen et al., 2016). Many interviewees expressed challenges with understanding financial jargon, often requiring assistance from specialized financial agents, aligning with the Special Agent Theory of Financial Inclusion. Additionally, they highlighted the significant role of technology in simplifying banking and transactions, consistent with Maurer's observation on the growth of mobile technology offering customers diverse options for cashless transactions (Maurer, 2012).

The codes

After the interviewing process and its data compilation phase, the following total numbers of codes and themes were found:

A total number of 572 open codes were achieved.

A total number of 558 axial codes were finalized.

In the next step, 540 selective codes were finalized.

In the last stage, 193 final themes were selected out of which 88 unique themes were selected.

Moreover, the total of 66 themes was converted into statements for the questionnaire.

The list of codes can be found in Appendix A.

Then the selected 66 themes were converted into question statements which were definite and clear using the five point Likert scale for the survey (See Appendix B). A Google form was developed and was shared with the people who were already using financial services such as banking, insurance, loans and investments.

Themes

Picking on similar themes, we narrowed them down to 10 main themes which would help us understand financial inclusion:

- Barriers to financial inclusion
- Awareness of financial products
- Government regulations and services
- Technology and finance
- Digital Financial Systems and Mobile banking
- Financial decisions and management
- Investment and savings

- Loans
- Motivating factors
- Process of acquiring financial services

A short summary of the themes is provided below:

#### **Barriers**

The interviews and coding process unveiled key barriers to financial inclusion. Participants commonly cited difficulties with financial jargon and language complexity, alongside a perceived lack of formal financial education.

#### **Insurance**

Researchers identified insurance as crucial for financial inclusion, echoing global models. Interviews revealed individuals were more likely to opt for insurance if processes and documentation were simple and clear.

#### **Awareness**

This theme involves individuals' existing financial knowledge and their proactive information-seeking behavior, influenced by factors such as financial education, literacy, and engagement with online communities, blogs, and research groups.

#### **Regulation**

This theme encompasses government policies impacting financial inclusion in Pakistan, including taxation, documentation requirements, and payment processes for taxes, fines, and other fees.

#### **Financial discussion – planning**

This theme encompasses social influences on financial behavior, including parental guidance, peer influence, and societal norms regarding budgeting, spending, and financial knowledge acquisition.

#### **Technology**

Technology facilitates easier access to financial services through the internet and mobile devices, impacting how people manage their finances and conduct transactions.

#### **Investment and saving**

This theme encompasses various investment avenues such as stocks, mutual funds, and digital currency, along with different saving methods, behaviors, and patterns.

**Loan**

This theme encompasses car loans and personal loans, frequently mentioned during interviews. It also involves understanding loan processes, payment methods, and bank requirements for obtaining a loan.

**Accessibility**

Access means the availability of physical financial institutes and their branches for the population as well as the experience faced by consumers when they visit.

**Reason**

This theme encompasses reasons identified through interviews for consumers opting to use financial services, including convenience, ease, and overall satisfaction with the experience.

**Process**

This theme assesses barriers encountered in accessing financial services, encompassing factors such as the level of cooperation from financial agents, the duration of the process, and issues concerning security and privacy.

**Quantitative Analysis:****Analysis Patch-test: (150 respondents)**

After the qualitative research, 88 themes were deduced which were further reduced to 88 questions. (Appendix B). Once the questionnaire was designed it was sent it to individuals who were already using some sort of financial service and were a part of financial inclusion in Pakistan. When researchers reached 150 responses, a patch-test was conducted to test the data results and see if the data being collected was aligned with the rules of reliability and validity.

**Profile of the respondents:**

Of the total 153 respondents, 60 (39.2%) were females and the rest 93 (60.8%) were males. Bulk of the respondents belonged to the age group of 21 to 30 (57.5) and the rest of them were of higher age groups. Graduate respondents were 74 (48.4%) and post-graduated respondents make the second largest pool of 59 (38.6%). The sample size is greater than 100 (Hair et al., 2010)

**Descriptive statistics:**

Skewness and Kurtosis analyses are used for ascertaining the uni-variate normality of the adopted constructs. The results are summarized in Table 1, below:

Construct	Mean	Std. Dev.	Skewness	Kurtosis
Barriers	3.50	0.57	0.089	-0.158
Awareness	3.55	0.53	0.009	-0.512
Government Regulation	3.05	0.712	0.002	0.003
Technology	4.12	0.589	0.686	0.089
DFS	3.87	0.81	-0.4	-0.162
Financial decisions	3.56	0.71	-0.64	-0.798
Investment and savings	3.45	0.700	0.008	-0.040
Loan	2.61	0.84	0.132	-0.75
Reason	3.65	0.739	-0.411	0.699
Process	3.99	0.67	-0.7	1.311

Table 1

Table 1 above shows that the highest Skewness level (SK=-0.7) is for the construct Process (Pro) (Mean=3.99, SD= 0.67), and the lowest (SK=.002) is for the construct Government Regulation (Gov\_reg) (Mean = 3.05 SD=0.712). Conversely, the highest Kurtosis level (KR=1.311) is for the construct, Process (Pro) (Mean=3.99, SD=0.67). Thus all the constructs fulfill uni-variate normality and all the constructs fulfill uni-variate normality requirements as the skewness range between  $\pm 2$  and kurtosis  $\pm 7$ . (Byrne, 2010)

#### Reliability Analysis:

Internal consistency of the constructs has been measured through Cronbach's Alpha. Summarized results are depicted in Table 2, below.

Construct	Cronbach's Alpha	No. of items	Mean	Std. Dev.
Barriers	0.754	10	35.05	5.786
Awareness	0.569	7	24.92	3.712
Government Regulation	0.702	7	21.40	4.99
Technology	0.720	8	32.96	4.714
DFS	0.77	4	15.50	3.269

Financial decisions	0.589	5	17.84	3.562
Investment and savings	0.721	8	27.60	5.607
Loan	0.843	9	23.57	7.664
Reason	0.651	4	14.63	2.96
Process	0.611	4	15.99	2.706

Table 2

Table 2 shows that the highest reliability ( $\alpha=.843$ ) is for the loan ( $M=23.57$ ,  $SD=7.664$ ), while the reliability for awareness (Awe) ( $M=24.92$ ,  $SD=3.712$ ) is the lowest ( $\alpha=.569$ ). The values above 0.6 are acceptable (Taber, 2018; van Griethuijsen et al., 2015)

In order to get acceptable range of Alpha value, the following items were deleted and combined:

**Awareness:**

Item 5: I ask for help in financial matters from the opposite gender

**Reason:**

Item 3: I have access to shariah compliant saving methods

**Financial decision:**

Item1: I use my account for financial services due to social influence

Moreover, **process, reason and financial decisions** were merged into single and new construct called **comprehension** which now included the following questions:

1. My account at the financial institution is secure and protected
2. I feel that by using an account I reduce risk
3. The types of financial products offered by the financial institutions are aligned with my needs
4. Initial deposit needed for account opening is affordable
5. The documentation and the form for access to financial products is easy
6. A physical visit is required for account opening
7. I have physical access to bank branches/insurance centers
8. I am aware of savings and investment plans
9. I use my financial account to pay utility bills
10. I use my financial account for domestic transaction, personal budgeting and expenses.
11. I opt for different payment methods using my financial account

The updated questionnaire after the 150 response patch-test can be found in Appendix C.

Test results for 250 respondents:

Profile of the respondents:

Of the total 251 respondents, 101 (40.2%) were females and the rest 149 (59.4%) were males. Bulk of the respondents belonged to the age group of 21 to 30 (130%) and the rest of them were of higher age groups. Graduate respondents were 115(45.8%) and post-graduated respondents make the second largest pool of 106 (42.2%). Most of respondents 155 (61.8%) belongs to the income level >50,000.

Descriptive statistics:

Skewness and Kurtosis analyses are used for ascertaining the uni-variate normality of the adopted constructs. The results are summarized in Table 3, below:

Construct	Mean	Std. Dev.	Skewness	Kurtosis
Barriers	3.51	0.62	0.15	-0.325
Awareness	3.61	0.63	-0.179	0.179
Government Regulation	3.09	0.74	0.002	0.003
Technology	4.12	0.589	-0.11	0.11
DFS	3.84	0.766	-0.59	0.051
Investment and loans	3.45	0.685	0.063	-0.196
Loan	2.72	0.88	0.156	-0.580
Comprehension	3.85	0.598	-0.477	1.028

Table 3

Table 3 above shows that the highest Skewness level (SK=-0.59) is for the construct Digital financial systems (DFS) (Mean=3.84, SD= 0.766), and the lowest (SK=.002) is for the construct Government Regulation (Gov\_reg) (Mean = 3.09 SD=0.74). Conversely the highest Kurtosis level (KR=1.028) is for the construct comprehension (compre) (Mean=3.85, SD=0.598). Thus all the constructs fulfill uni-variate normality requirements as the skewness range between  $\pm 2$  and kurtosis  $\pm 7$ . (Byrne, 2010)

Reliability Analysis:

Internal consistency of the constructs has been measured through Cronbach’s Alpha. Summarized results are depicted in Table 4, below.

Construct	Cronbach’s Alpha	No. of items	Mean	Std. Dev.
Barriers	0.788	10	35.20	6.22
Awareness	0.675	6	21.69	3.805
Government Regulation	0.719	7	21.65	5.206
Technology	0.720	8	32.80	4.75
DFS	0.796	4	15.38	3.501
Investment and savings	0.70	8	27.67	5.482
Loan	0.85	9	24.49	7.99
Comprehension	0.791	4	42.39	6.58

Table 4

Table 4 shows that the highest reliability ( $\alpha=.85$ ) is for the loan (M=24.49, SD=7.99), while the reliability for awareness ( $\alpha =0.675$ ) (M=21.69, SD=3.805) is the lowest. Moreover, values are above 0.6 and are accepted (Taber, 2018; van Griethuijsen et al., 2015)

Factor Analysis:

Exploratory Factor Analysis (EFA) EFA being explorative in nature was used for understanding relationships between the constructs and indicator variables. Table 5 shows the results:

Component	Construct	Items	KMO	BTos	CFL
1	Barriers	10	0.774	628.338	35.316
2					48.598
3					58.920
1	Awareness	6	0.639	384.44	40.887
2					59.953

1	Government Regulation	7	0.760	344.67	39.033
2					54.366
1	Technology	8	0.778	455.53	37.957
2					51.698
3					64.885
1	DFS	4	0.767	304.417	62.541
1	Investment and savings	8	0.722	396.560	37.575
2					51.043
1	Loan	9	0.880	1017	49.972
2					62.023
1	comprehension	11	0.807	681.36	34.102
2					46.700
3					56.964

Table 5

Note: Kaiser Meyer Olkin, Bartlett Test of Sphericity, Cumulative Factor Loading

Rotated Component Matrix Analysis:

As evident from above table that there are multiple components for some of the construct. Therefore, we will interpret the rotated component matrix. We have grouped the items with a benchmark who has value above 0.5.

Construct 1: Barrier

Rotated Component Matrix<sup>a</sup>

Item	Component		
	1	2	3



barr_1	0.666	0.195	0.179
barr_2	0.715	0.164	-
			0.050
barr_3	0.780	0.159	0.006
barr_4	0.674	0.116	0.168
barr_5	0.668	-	0.259
		0.294	
barr_6	0.557	0.242	0.397
barr_7	0.032	0.144	0.783
barr_8	0.186	0.070	0.723
barr_9	0.190	0.823	0.137
barr_10	0.120	0.789	0.125

Component 1:

1. The information related to financial products is easy to comprehend
2. I do not need guidance in executing financial transactions.
3. It is easy to execute financial transactions
4. I consider the products of financial institutions trustworthy
5. I was familiar with the process when I opened my first financial account
6. I have knowledge about financial tasks and technicalities

Component 2:

7. I am included in the financial decisions taken by family
8. I feel less barriers in the financial inclusion process when I have savings
9. I am willing to search for the information related to financial products
10. I search for the information related to financial information when the need arises

Component	items	Cronbach Alpha	KMO	BTos	CFL
1	6	0.793	0.776	424.992	49.662
2	4	0.565	0.598	103.87	44.093

In some researches where the information is less precise the variance explained value below 60% can be considered satisfactory. Hair et al. (2014 p 112). The KMO value is greater than 0.776 which is good. Hair et al. (2006)

- We will retain the component 1

*Construct 2: Awareness*

Rotated Component Matrix

Item	Component	
	1	2
Aw_1	.635	.266
Aw_2	.554	.486
Aw_3	.892	.010
Aw_4	.865	-.051
Aw_5	-.051	.780
Aw_6	.136	.636

Here we will keep only component 1(ref needed), the items are as follows:

1. I have access to the information regarding financial products
2. I find information related to financial products helpful and convincing
3. When I visit a financial institution, professional help is readily available
4. When I visit a financial institution support/representatives are available

Component	items	Cronbach Alpha	KMO	BTos	CFL
1	4	0.763	0.639	349..9	58.6

The cumulative factor loading is greater than 0.50 (Bryman, 2004). (Kaiser, 1970)suggest the cut off value of 0.5, moreover, the KMO is 0.639 which is greater than 0.5

*Construct: Government Regulation*

Rotated Component Matrix<sup>a</sup>

item	Component	
	1	2

Gov_reg1	.773	.197
Gov_reg2	.783	.222
Gov_reg3	.325	.651
Gov_reg4	.314	.688
Gov_reg5	.514	.446
Gov_reg6	.548	-.035
Gov_reg7	-.181	.781

Component1:

I am aware of governmental online services for paying taxes, tickets, and fines

2. I have access to services provided by the government related to finances
3. As a tax payer, I find using e-services convenient.
4. I am aware that it is a right of every citizen to hold a bank account

Component 2:

1. In my country, regulations are imposed properly and SOPs are followed by the financial institutions
2. In my country, there are no issues in taxation related matters
3. I do not feel the absence of several services which are restricted by law for e.g. pay pal and cryptocurrency

Component	items	Cronbach Alpha	KMO	BTos	CFL
1	4	0.672	0.657	178.9	50.817
2	3	0.572	0.589	82.775	55.082

- We will retain the component one
- In some researches where the information is less precise the variance explained value below 60% can be considered satisfactory. Hair et al. (2014 p 112). Kaiser suggest the cut off value of 0.5, moreover, the KMO is 0.657 which is greater than 0.5

Construct: Technology

Rotated Component Matrix<sup>a</sup>

item	Component		
	1	2	3
Tech_1	.518	.599	-.253
Tech_2	.390	.624	.032

Tech_3	.834	.141	-.052
Tech_4	.831	.103	.046
Tech_5	.579	.154	.202
Tech_6	.619	.021	.501
Tech_7	-.098	.817	.238
Tech_8	.062	.111	.868

Component1:

1. I use e-services for banking and investments
2. I find e-services user friendly and convenient
3. I prefer cash less transactions
4. I consider e-services reliable

Component2:

1. I have access to the internet
2. I have access to information sources for financial products
3. I often use ATM services
4. I follow social media pages and communities related to financial products

Component	Items	Cronbach Alpha	KMO	BTos	CFL
1	4	0.750	0.704	260.804	57.82
2	4	0.450	0.577	88.57	42.05

- We will retain the component 1
- In some researches where the information is less precise the variance explained value below 60% can be considered satisfactory. Hair et al. (2014 p 112). Kaiser suggest the cut off value of 0.5, moreover, the KMO is 0.657 which is greater than 0.5

Construct: Investment and savings

**Rotated Component Matrix**

items	Component	
	1	2
InSav_1	-.041	.734
Insav_2	.000	.624

Insav_3	.282	.701
Insav_4	.380	.434
Insav_5	.097	.546
Insav_6	.809	.269
Insav_7	.823	.187
Insav_8	.690	-.163

Component1:

1. I invest money in formal saving centers
2. I invest my money in saving certificates
3. I invest my money in bachat committee (financial pooling)

Component2:

1. I am willing to invest and save
2. I am aware of the risk factor of investment
3. I use my financial account to manage savings
4. I plan my financial decisions with the help of family members
5. I use my savings when there is a need (not emergency)

Component	Items	Cronbach Alpha	KMO	BTos	CFL
1	3	0.701	0.589	192.56	63.68
2	5	0.63	0.722	134.0.4	40.745

- In some researches where the information is less precise the variance explained value below 60% can be considered satisfactory. Hair et al. (2014 p 112). Kaiser suggest the cut off value of 0.5, moreover, the KMO is 0.722 which is greater than 0.5

Construct: loans

Rotated Component Matrix<sup>a</sup>

items	Component	
	1	2
Loan_1	.607	.024
Loan_2	.658	-.101
Loan_3	.815	.138

Loan_4	.779	.250
Loan_5	.804	.204
Loan_6	.822	.027
Loan_7	.830	.180
Loan_8	-.096	.863
Loan_9	.460	.603

- We will remove item # 8

1. I have taken a formal personal loan
2. I buy products on credit according to my need
3. Loan payments are affordable and do not inhibit my savings
4. The process of applying for the loan is simple and easy
5. The cost of loan and initial payment is affordable
6. I am able to pay monthly installments of the loans
7. The time duration for loan payoffs is fine
8. I am satisfied with services offered at financial institutions

Component	Items	Cronbach Alpha	KMO	BTos	CFL
1	8	0.881	0.887	1002.73	56.099

- In some researches where the information is less precise the variance explained value below 60% can be considered satisfactory. Hair et al. (2014 p 112). Kaiser suggest the cut off value of 0.5, moreover, the KMO is 0.722 which is greater than 0.5

*Construct: comprehension*

**Rotated Component Matrix<sup>a</sup>**

item	Component		
	1	2	3
compre_1	.644	.284	.233
compre_2	.576	.305	.373
compre_3	.736	.147	-.022
compre_4	.665	.087	.173
compre_5	.788	-.020	.086
compre_6	.023	-.041	.881

compre_7	.333	.210	.656
Compre_8	.414	.441	-.098
Compre_9	.184	.691	-.024
Compre_10	.061	.770	.092
compre_11	.076	.764	.186

Component1:

1. My account at the financial institution is secure and protected
2. I feel that by using an account I reduce risk
3. The types of financial products offered by the financial institutions are aligned with my needs
4. Initial deposit needed for account opening is affordable
5. The documentation and the form for access to financial products is easy
6. I have physical access to bank branches/insurance centers

Component 2:

1. I am aware of savings and investment plans
2. I use my financial account to pay utility bills
3. I use my financial account for domestic transaction, personal budgeting and expenses.
4. I opt for different payment methods using my financial account

Component	Items	Cronbach Alpha	KMO	BTos	CFL
1	6	0.787	0.801	389.004	49.141
2	4	0.659	0.711	141.09	50.18

- In some researches where the information is less precise the variance explained value below 60% can be considered satisfactory. Hair et al. Source Hair, J. F. (2014, p.107). **Multivariate data analysis**. Kaiser suggest the cut off value of 0.5, moreover, the KMO is 0.722 which is greater than 0.5

The updated Questionnaire after the analysis of 250 responses can be found in Appendix D.

AMOS

Table: model fit indices

Indices	Acceptable Range
Chi-Square Test $\chi^2$	Low
CMIN/df	$<5^2$
Comparative fit Index (CFI)	$>0.9$
Tucker-Lewis Index	$>0.9$
Root Mean Square Error of Approximation (RMSEA)	$<0.08$
Parsimony Adjusted Measures	
Parsimony Comparative Index (PCFI)	$>0.7^3$
Parsimony Normed Fit Index (PNFI)	$>0.7^3$
Pratio	$>0.7^3$

References:

Hair et al. (2014) Wheaton, Muthen, Alwin, & Summers  
(1977) Hooper e al. (2008)

Results:

Indices	Results	Acceptable Range
Chi-Square Test $\chi^2$		Low
CMIN/df	1.672	$<5^2$
Comparative fit Index (CFI)	0.909	$>0.9$
Tucker-Lewis Index	0.9	$>0.9$
Root Mean Square Error of Approximation (RMSEA)	0.052	$<0.08$
Parsimony Adjusted Measures		
Parsimony Comparative Index (PCFI)	0.799	$>0.7^3$
Parsimony Normed Fit Index (PNFI)	0.706	$>0.7^3$
Pratio	0.879	$>0.7^3$

References:

Hair et al. (2014) Wheaton, Muthen,



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Alwin, & Summers (1977) Hooper e al.  
(2008)

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The table shows the model fit indices extracted from structural model. Results of GOF values were:  $\chi^2$ , CFI=0.909, TLI=0.9 and RMSEA=0.052 (90% CI [0.05-0.06]). Since the fit indices show acceptable goodness of fit, the model can be considered as good (Cheung & Rensvold, 2002; Hair Jr. et al., 2014; Kim et al., 2016; Kline, 2011c). Results of Parsimony measures depict that Parsimony Adjusted Normed Fit Index(PNFI)=0.706 > 0.5 and Parsimony Comparative Fit Index (PCFI) = 0.799 > 0.7, also fulfils the model fit criteria (Hooper et al., 2008; Kline, 2011b; Schreiber, 2006).

Amos computations can be found in Appendix E.

Final Questionnaire:

The final questionnaire is 5-point Likert scale from strongly disagree to strongly agree

Awareness:

1. I have access to the information regarding financial products
2. When I visit a financial institution, professional help is readily available
3. When I visit a financial institution support/ representatives are available

Barrier:

1. The information related to financial products is easy to comprehend
2. I was familiar with the process when I opened my first account
3. I have knowledge about financial tasks and technicalities

Tech:

1. I use e-services for banking and investments
2. I prefer cash less transactions
3. I consider e-services reliable

Insav:

1. I am aware of the risk factor of investment
2. I use my financial account to manage savings
3. I plan my financial decisions with the help of family members
4. I use my savings when there is a need (not emergency)

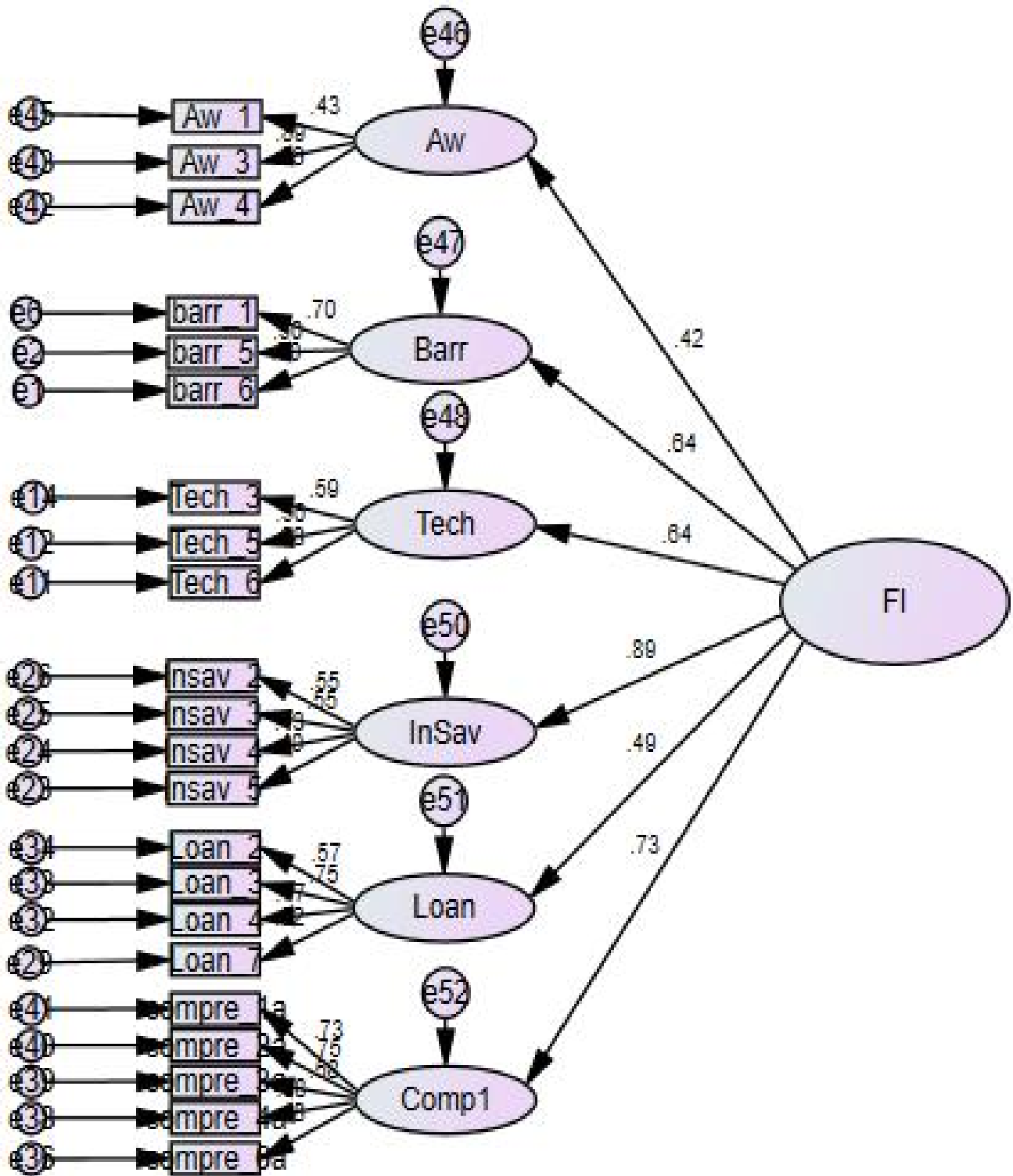
Loan:

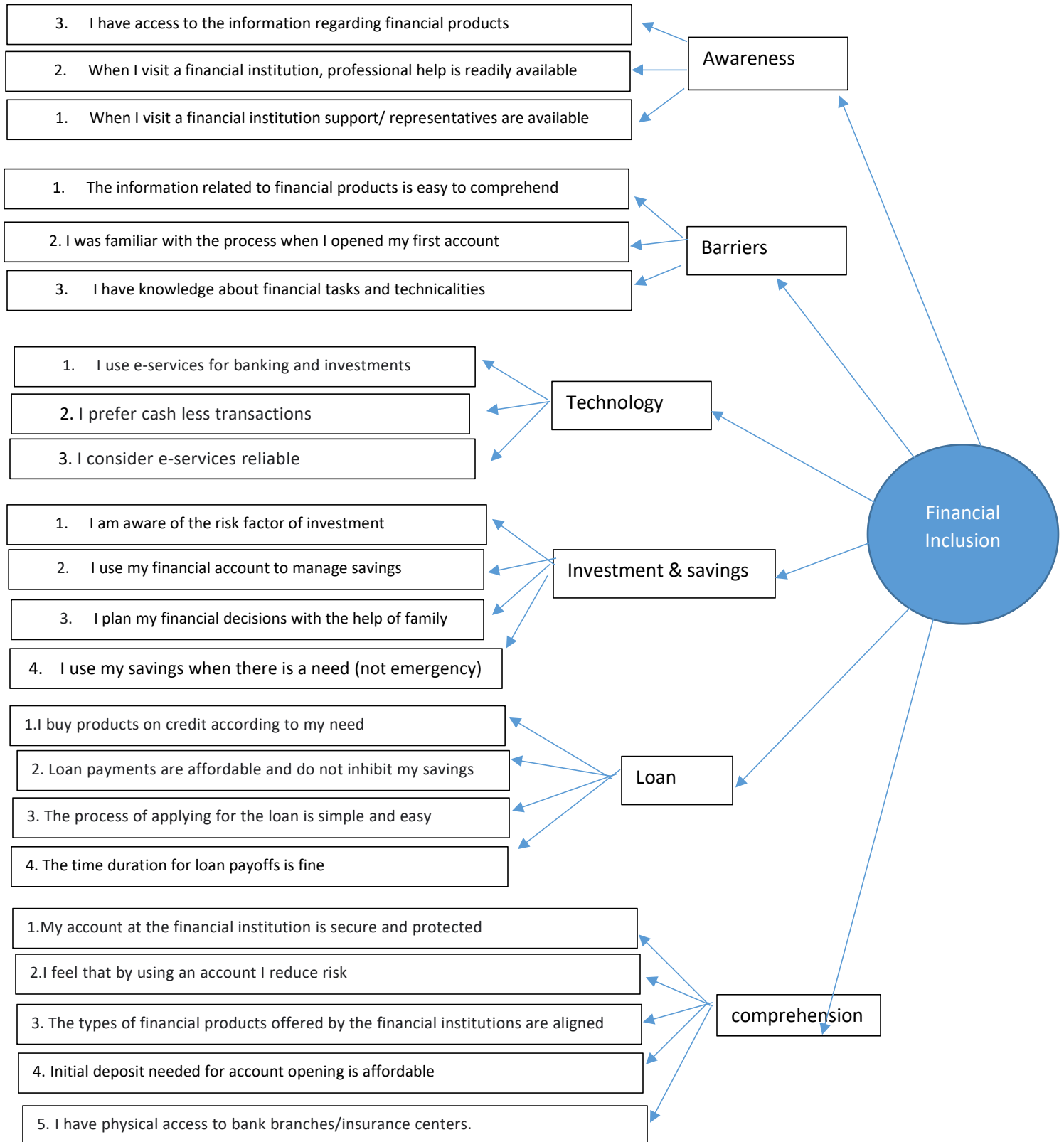
1. I buy products on credit according to my need
2. Loan payments are affordable and do not inhibit my savings
3. The process of applying for the loan is simple and easy
4. The time duration for loan payoffs is fine

Comprehension:

1. My account at the financial institution is secure and protected
2. I feel that by using an account I reduce risk
3. 3.The types of financial products offered by the financial institutions are aligned with my needs
4. 4.Initial deposit needed for account opening is affordable
5. I have physical access to bank branches/insurance centers.

Financial Inclusion Conceptual Framework





### Conclusion

The study initially aimed to explore the gender divide in financial inclusiveness in Pakistan. However, upon review, no existing research was found on this topic. Consequently, the researchers sought to develop a new measurement tool for assessing financial inclusion in Pakistan. During data analysis, unexpected findings emerged: themes like Shariah-compliant savings and digital financial services were deemed insignificant, contrary to expectations given Pakistan's status as a Muslim-majority country with mandates for Islamic banking branches. This questionnaire is to be filled on a 5 point Likert Scale.

### Limitations

This study was conducted on a small scale of 16 qualitative interviews and 250 quantitative questionnaires. This sample size and the fact that all participants belong to the middle to upper middle socio-economic class living in one of the major cities of Pakistan (Karachi, Lahore, Islamabad) means that another study such as this can be conducted which includes a wider sample population which would be a more accurate representation of the real population of Pakistan.

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