Pakistan Economic and Social Review
Volume 59, No. 2 (Winter 2021), pp. 231-251

AN INVESTIGATION INTO THE DYNAMICS OF FINANCIAL INCLUSION IN SOUTH ASIAN COUNTRIES

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Abstract. South Asia has a low level of financial inclusion. Each country in the region works to advance financial inclusion, with a particular emphasis on the unbanked. Financial inclusion entails the participation of all segments of society in banking, including penetration, banking services, and banking usage. The purpose of this article is to examine the financial inclusion dynamics in South Asian countries. Secondary data of financial inclusion index, ranging from 2005 to 2017, is utilized to examine the yearly performance of South Asian economies. data from the World Bank's Findex Survey were used to assess Asian countries' performance on a year-by-year basis. The index in question is based on the data from 214 developing and developed economies. Additionally, we conducted three multiple regression analyses to ascertain which characteristic was most predictive of financial inclusion. We have taken India as our base country due to its better financial inclusion. The findings of study reveal that South Asian countries have a low level of financial inclusion. There exist huge disparities in financial inclusion Dimensions among the countries.

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Keywords: Financial inclusion, South Asia, Penetration, Banking Services and Usage

JEL Classification: B26, B27, C01, E58, C40

I. INTRODUCTION

Economic progress has been connected to financial inclusion. Academics, policymakers, and other social scientists believe that financial inclusion not only helps countries thrive economically, but also enhances individual income. Financial inclusion benefits individuals. The global community is concerned about projects and programmes aimed at achieving sustainable progress by integrating underprivileged segments of society into mainstream institutions. Inclusive development is now a global imperative. Each country desires to eradicate poverty and inequality. As a result, each country takes specific measures to fulfil its growth and development objectives. This study examined the economies of south Asia. South Asian economics are comprised of low-income developing countries that are mostly afflicted by poverty, exclusion, and underdevelopment. Thus, this study made a point of addressing financial inclusion in South Asian economics through the use of a financial inclusion index. According to World Development (2017), the total adult population of unbanked countries in South Asia is as follows: Afghanistan (15.3) million, Bangladesh (77.1) million, Bhutan (0.4) million, India (190) million, Nepal (12.3) million, Sri Lanka (2.8) million, and Pakistan (100) million. According to Findex 2017[1] almost 1.7 billion adults are still unbanked Only seven developing economies account for over half of the unbanked population: Bangladesh, China, India, Indonesia, Mexico, Nigeria, and Pakistan.

The rest of the paper is organized as follows: The second section of the papers delineates on the review of literature. The third section discusses recent financial inclusion policies in South Asian Economics. The section four of the papers makes deliberation on the trend analysis of the financial inclusion in South Asian courtiers. The section fifth elaborates the methodological framework along with the model

[1] https://www.worldbank.org/en/topic/financialinclusion/overview#1

description being used in the study. The sixth section is the most important section of the paper, in which the analysis of the data is being done. The final section concludes the article.

II. REVIEW OF LITERATURE

For achieving sustainable growth, economic growth must ensure benefit of financial system to the population in breadth and depth range that means inclusive manner. Economic impoverishment arises when low-income people or rural peoples are excluded from formal financial services i.e., financial inclusion. Financial inclusion works as a big barrier to the economic development. This barrier could be removed by building an inclusive financial system. Inclusive growth is only possible if all the financial institutions work together to provide financial services to the poor (Beck et al., 2007). Announcement of financial services for micro- small business units does not mean financial inclusion, financial services should be economical in nature and mainstream financial institutions should lend to the needy sections of the society (Chakrabarty K.C, 2009). Financial inclusion means appropriate financial services to every individual of the society (Bluebook, 2006). (Honohan, 2007 and 2008) He estimates the financial access of 160 countries by interpreting total population of economics and total number of populations having access to financial services. This study is quite interesting but is limited to one-year measure which hardly gives us any good picture of these economies. (Chakravarty and Pal, 2010) constructed index of financial inclusion on six variables for the period of (1991, 2001 and 2017). Technology is also gearing up financial inclusion because of cheaper and easier transactions (Gupta, 2011). (Demiguc-kunt and klap-per, 2012) World Bank has developed Global FINDEX 2012 by including other financial inclusion indicators with the help of primary survey in 148 countries. The majority of economically excluded people live in developing countries, primarily in South Asia and Sub-Saharan Africa (Demirgüç-Kunt et al., 2018).

III. RECENT FINANCIAL INCLUSION POLICIES IN SOUTH ASIAN ECONOMICS

Afghanistan: Financial inclusion programmes in Afghanistan are, the Better Than Cash Alliance in 2013. Issued Money Service Providers Regulation in 2008 and implemented electronic money institution-related amendments in 2011. Participated in an electronic money summit in October 2015 and launched a public awareness campaign in February 2016 surrounding mobile financial services. Bangladesh: Following are the programmes in Bangladesh, which are promoting financial inclusion services in the country. The various programmes are No frills account, Bank account for farmers, Bank account for freedom fighters, Bank accounts for beneficiaries under Social Safety Net, Bank account for hardcore poor, Bank account for the garments workers, Bank Account for Small Life Insurance Policy Holder, Beneficiaries of Dustho Punorbason program of Ministry of Religious Affairs, Banking for working/street children, Banking for working/street children, Bank Account under national service program, School banking, Mobile Financial Service (MFS) 2014, Agent Banking, Agricultural and Rural Credit, Credit Disbursement through Tk. 10 Farmer's Account, Special Credit program for women etc. Bhutan: Micro loan institution (2014), Adult banking services (2016), The Bhutan Immediate Payment Service (BIPS) 2017, Government-to-citizen (G2C) and citizen-to-government (C2G) payments, and E-Money Issuer Rules and Regulations 2017. India: In India following are the programmes which has been implemented for the promotion of financial inclusion to cover the unbaked population like PMJDY, MUDRA, PMSBY, PMJJBY, APY and others etc. Nepal: Grameen Bank Model, The Wholesale Micro Finance Model (1991), Directed Lending Model, Project-based Micro-credit Model, FINGOs Model and the SACCOs Model, For the promotion of financial inclusion Nepal government implemented five-year Strategic Plan (2012-2016). Maldives: Credit Guarantee scheme (2016), Mobile Payment services. Srilanka: Road map of 2012 financial inclusion policy by central bank of Srilanka w as to achieve 100% financial Inclusion by 2015, in which they announced 10% credit guarantee to agriculture sector, Opening of new branches in rural areas, "eZcash" in 2012. Pakistan: Financial inclusion is defined as access to formal financial services by individuals and firms to use a range of quality payments, savings, credit and insurance services which meet their needs with dignity and fairness. Financial Inclusion Programmes in Pakistan are “Credit Guarantee Scheme for Small and Rural Enterprises”, Micro Credit Guarantee Facility (MCGF) Guidelines, Technical Assistance Fund, Financial Innovation Challenge Fund, Promoting Innovative Rural and Agricultural Finance in Pakistan, Promoting Excellence in Islamic Finance and Institutional Strengthening Fund.

Financial inclusion is the process of incorporating all segments of society into a recognised financial system (Aduda & Kalunda, 2012; Ravikumar, 2012). Individuals benefit significantly from inclusion in the mainstream financial system (Allen, Demirguc-Kunt, & Peria, 2016). Financial inclusion (FI) provides additional and corroborated justifications for addressing poverty and promoting inclusive development (Chibba, 2009). Growth and development that are inclusive result in more sustainable economic growth and financial stability (Rillo, 2014). The United Nations' newly adopted framework for Sustainable Development Goals (SDGs) also emphasises the importance of promoting financial inclusion as a critical enabler of sustainable development (State Bank of Pakistan, 2016).

Rationale of the Study

As such, this study is being conducted to add to the existing body of knowledge and policy by conducting an empirical examination of the relationship between financial inclusion development, institutional quality in south Asian countries. Additionally, this study contributes to the empirical literature by examining a financial inclusion index and institutional quality and Programs development in the region. Additionally, it assists policymakers in developing sound policies, as this study connects institutional arrangements by south Asian economies for the development of financial inclusion and development.

IV. METHODOLOGY

This study is based on secondary data collected from Global Findex Database from World Bank 2014 and IMF financial access survey 2017. Researchers have used different methods to compute the Index of Financial Inclusion, Sarma (2008). We have computed financial inclusion index by making Sarma 2008 as a base paper for our study. Dimension Index has been generated by calculating Minimum and Maximum as per HDI formula. We have calculated Minimum and Maximum from 214 countries.

$$di = \frac{\mathrm{AI} - \mathrm{mi}}{\mathrm{MI} - \mathrm{mi}} \qquad (1)$$

where di, refers to Dimension Indices

AI = Actual value of the Dimension.

mi = Minimum Value of the Dimension

MI= Maximum value of the dimension

Formula (1) ensures that $0 \leq \mathrm{di} \leq 1$. Higher the value of dimension represents higher achievements of the country. Where "1" represents complete inclusion and "0" no inclusion.

The index of financial inclusion, IFI for the South Asian countries is measured by the following formula.

$$\mathrm{IFI} = 1 - \frac{\sqrt{(1-pi)^2+(1-ai)^2+(1-ui)^2}}{3} \qquad (2)$$

where pi=Penetration,

ai=availability

and ui=Usage

Financial inclusion Index of Asian countries: In this study, we have calculated financial inclusion on the bases of three dimensions indices like Penetration, Availability and Usage.

Banking penetration (dimension 1): In this dimension we have used Bank accounts per 1000 adults. It is one of the key dimensions which represents banking population of the country. Availability of banking services (dimension 2): This dimension represents Availability of banking services to the people in each country. This dimension constitutes availability of commercial banks per 100000 Adult population plus availability of ATM per 100000 adult Population. Usage (dimension 3): In dimension third we took volume of credit and deposits as a percentage of GDP, because having bank account is not a financial inclusion.

Using data on all three dimensions (penetration, availability and usage) for 8 south Asian Countries. The financial inclusion index of all the eight countries comes under low financial inclusion. The Financial inclusion is shown by the value of IFI, countries are categorized into three categories, viz.:

1. $0.5 < IFI \leq 1$ – high financial inclusion
2. $0.3 \leq IFI < 0.5$ – medium financial inclusion
3. $0 \leq IFI < 0.3$ – low financial inclusion

Index of Financial Inclusion IFI and Major Contributor Variable of All Three Variables of Financial inclusion in south Asia. To find out major contributor variable of financial inclusion in south Asia countries, we had used Step wise multiply regression Models. Thus, the equation for the study is as follows.

$$IFI = f\ (D1, D2, D3, di \ldots \ldots, din) \qquad (3)$$

where,

IFI= Index of Financial Inclusion

D1=Penetration

D2=Banking Services

D3=Usage

di= dummy of Afghanistan

din= dummy of nth country

We utilized a stepwise regression strategy to determine the key contributing variable to each of the IFI's three aspects. Table (6) contains the stepwise regression findings. We employed dummy variables for seven countries, with India serving as a proxy for the others due to its superior performance. As a result, we will use intercept to interpret our models in order to explain financial inclusion on each dimension with respect to India.

V. RESULTS AND DISCUSSION

Table 1 Parameters of Financial Inclusion in south Asia (Appendix A)

Per 1000 adults, the number of bank accounts: From 2006 to 2017, Table 1 displays the number of bank accounts per 1000 adults in South Asian countries. In 2006 Maldives (1.00) had the most bank accounts in 2006, followed by India (0.081), Bhutan (0.056), Bangladesh (0.034), and Pakistan (0.025). Similarly, India ranked top in 2017 with (0.29) thousand accounts, followed by Bhutan with (0.22) and Bangladesh performing worst with (0.08).

Commercial bank branches per 100,000 population in Asian countries: From 2006 to 2017, the following table 1 shows the number of commercial bank branches per 100,000 inhabitants in south asian countries. Bhutan achieved a score of (0.047) bank branches in 2006, followed by India (0.031), Sri Lanka (0.043), and Afghanistan with a score of (0.002) bank branches. Sri Lanka has the largest number of bank branches in 2017, with (0.080). Bhutan (0.065), India (0.064), and Afghanistan (0.007) follow. ATMs per 100,000 adults: Table 1 illustrates the number of ATMs per 100,000 people in South Asian countries between 2006 and 2017. Thus, in 2006, the Maldives and Nepal had the highest ATM's per lack population (0.031), followed by India (0.012), Pakistan (0.009), Bhutan (0.002), and Bangladesh (0.001), while Sri Lanka and Afghanistan had zero ATM's per lack population. The 2017 performances are Afghanistan (0.000), Bangladesh (0.025), Bhutan (0.091), India (0.111), Nepal (0.084), Maldives (0.059), Sri Lanka (0.105) and Pakistan (0.036). India is at the top rank and Afghanistan has a lower performance.

Deposits as a percentage of Gross Domestic Product: From 2006 to 2017, deposits as a percentage of GDP were greatest in India (0.123), followed by Bangladesh (0.099), Nepal (0.097), Bhutan (0.096), Pakistan (0.080), Srilanka and Bhutan (0.078), and Afghanistan (0.078). (0.016). Similarly, the 2017 ranking are Afghanistan (0.037), Bangladesh (0.108), Bhutan (0.123), India (0.163), Nepal (0.110), Maldives (0.160), Sri Lanka (00.069) and Pakistan (0.061). India is leading followed by Maldives, Bhutan, Nepal, Bangladesh and so on while Pakistan is performing with lower scoring.

Credit as a Percentage of Gross Domestic Product: Table 1 illustrates credit as a proportion of GDP in 2006, with India (0.342) leading the way, followed by Bangladesh (0.307), Maldives (0.302), Sri Lanka (0.297), Pakistan (0.285), and Afghanistan (0.153). Credit as a percentage of GDP was as follows in 2017, Afghanistan (0.019), Bangladesh (0.285), Bhutan (0.229), India (0.329), Nepal (0.305), Maldives (0.379), Sri Lanka (0.229) and Pakistan (0.246). Maldives achieved the top rank followed by India, Nepal, Bangladesh, Pakistan, Bhutan, Sri Lanka and Afghanistan

Table 2 Dimensions of Financial inclusion (Appendix B)

Tables 2 provide the values for these dimensions from 2006 to 2017. Dimension 1, from 2006 to 2017, the following table shows the number of bank accounts per 1000 adults in South Asia countries. Maldives was the most numerous countries in 2006, followed by India, Bhutan, Bangladesh, Pakistan, Nepal, and Sri Lanka. Similarly, in 2017, India is the highest-ranked Asian country, while Sri Lanka is the lowest-ranked. The scoring of the index is Afghanistan (0.09), Bangladesh (0.08), Bhutan (0.22), India (0.29), Nepal (0.08), Maldives (0.16), Sri Lanka (0.00) and Pakistan (0.06).

Dimension 2 illustrates the contribution of banking services availability in south Asia in 2006, as measured by the number of commercial banks and ATMs. India had the greatest score, while Afghanistan received the lowest. Similarly, Srilanka outperformed other countries in 2017, with the worst conditions occurring of the coast of Afghanistan. The performance of 2017 among south Asian countries is as follows Afghanistan (0.007), Bangladesh (0.048), Bhutan (0.111), India (0.120), Nepal (0.091), Maldives (0.069), Sri Lanka (0.133) and Pakistan (0.061).

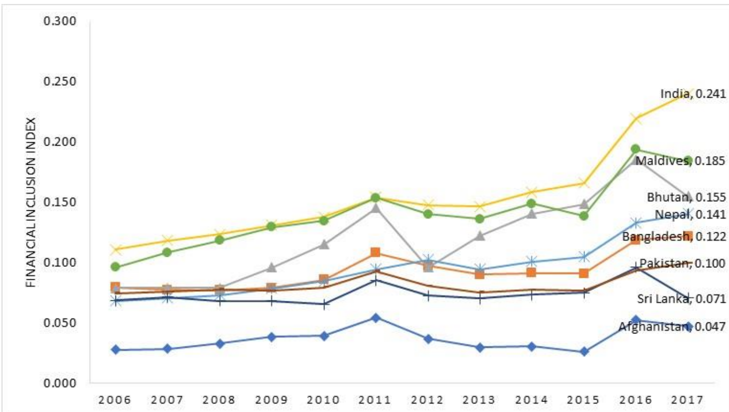
From 2006 to 2017, Dimension 3 reflects credit and deposits as a percentage of GDP. In 2006, India was the highest and Bhutan was the lowest; similarly, in 2017, Maldives was the highest and Afghanistan was the lowest. Afghanistan (0.047), Bangladesh (0.251), Bhutan (0.138), India (0.328), Nepal (0.263), Maldives (0.350), Sri Lanka (0.084) and Pakistan (0.184).

Overall Performance of Financial Inclusion Index Among South Asian countries (From 2006 To 2017)

In 2006, India was ranked first, followed by the Maldives, Bangladesh, Bhutan, Sri Lanka, and Pakistan, and Afghanistan was ranked last. Similarly, in 2007 and 2008, India outperformed other South Asian countries, but Afghanistan performed poorly. For 2009, both India and the Maldives outperformed other countries, but Afghanistan underperformed, as has been the case in previous years. The 2017, scoring reveals India is at top position followed by Maldives, Bhutan, Nepal, Bangladesh, Pakistan, Sri Lanka and Afghanistan.

FIGURE 1

Trend Line of Financial Inclusion Index of South Asian Countries



Source: World Bank and RBI) Note: Figure in Parenthesis Are Percentage of Total

The reasons of low financial inclusion among south Asian countries Afghanistan in 2012 by Consultive Group to Assist the Poor (CGAP).

TABLE 3

Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
IFI	96	.0995	.0425	.026	.241
D1	96	.0729	.066	.002	.290
D2	96	.0421	.028	.001	.133
D3	96	. 194	.060	.047	.350

Source: Authors Calculation

The mean value of IFI (.0995) represents the overall performance of south Asian countries on the financial inclusion index. Which contributed to the region's low level of financial inclusion. Afghanistan has the worst financial inclusion situation, with a score of (0.0263327), while India has the best, with a rating of (.166271). Similarly, Dimension one's mean value is (D1=.0729), Dimension two's mean value is (D2=.0421), and Dimension three's mean value is (D3=. 194). However, the positions of countries are unequally distributed as indicated by the standard deviation (.0425), and Dimension three's mean value is (D3=.060). Additionally, the values of the minima and maxima for each variable demonstrate a significant disparity in the performance of the counties; for example, D1 ranges from (.026 to 0. 241), while D2 ranges from (0.002 to 0.290). (Minimum value is 0.001 with maximum value of 0.133). Finally, the D3 ranges from (minimum value of 0.047 to maximum value of 0.350).

TABLE 4

Correlation Matrix

Variables	1	2	3	4	5	6	7	8	9	10	11	12
IFI	1.000											
D1	0.889	1.000										
D2	0.638	0.446	1.000									
D3	0.809	0.492	0.418	1.000								
Afghanistan	-0.597	-0.291	-0.597	-0.700	1.000							
Bangladesh	-0.082	-0.080	-0.370	0.077	-0.134	1.000						
Bhutan	0.176	0.256	0.187	-0.025	-0.134	-0.152	1.000					
India	0.514	0.447	0.358	0.413	-0.134	-0.152	-0.152	1.000				
Nepal	-0.060	-0.230	0.057	0.150	-0.126	-0.143	-0.143	-0.143	1.000			
Maldives	0.410	0.485	-0.041	0.307	-0.134	-0.152	-0.152	-0.152	-0.143	1.000		
Sri Lanka	-0.245	-0.426	0.310	-0.121	-0.126	-0.143	-0.143	-0.143	-0.134	-0.143	1.000	
Pakistan	-0.185	-0.217	0.056	-0.164	-0.134	-0.152	-0.152	-0.152	-0.143	-0.152	-0.143	1.000

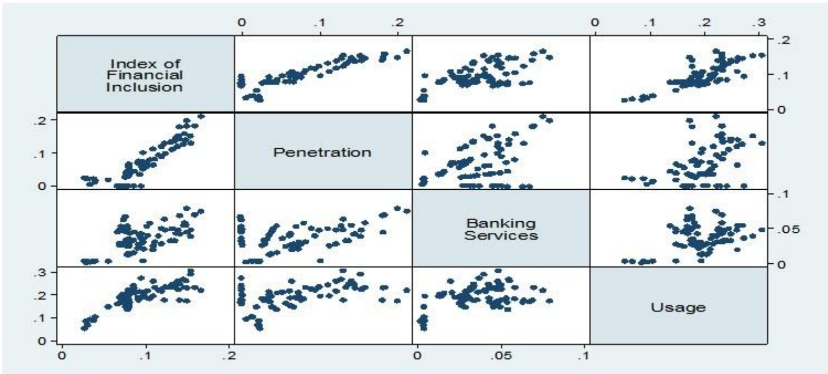
Source: Authors Calculation

All of the core components of the Index of Financial Inclusion (IFI) are positively associated, however the connection between similar factors varies by country. Afghanistan, Bangladesh, Nepal, and Sri Lanka all have a negative correlation with the IFI, whilst Bhutan, India, and the Maldives all have a positive correlation with the IFI.

This figure shows all the key variables are positively correlated each other

FIGURE 2

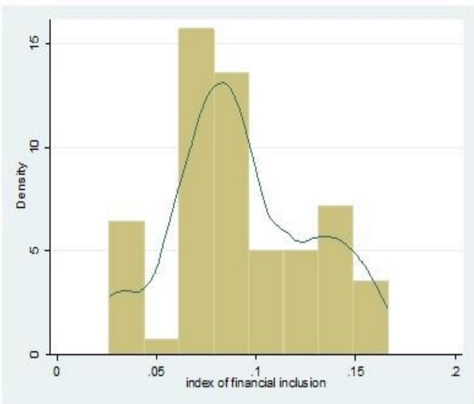
Graph Matrix IFI, D1, D2, and D3



Source: Stata 14

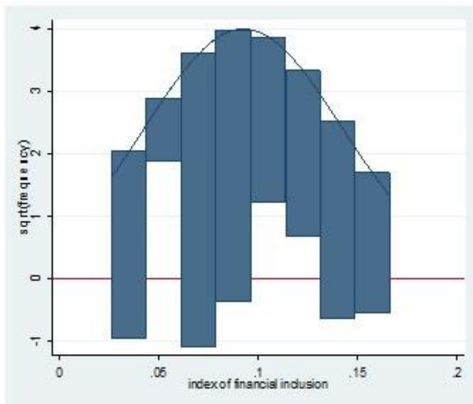
VI. NORMALITY TESTING

Histogram



Source: Stata 14

Hang Root



Source: Stata 14

From Histogram we find our data is mostly normally distributed and from Hang root we find there exist larger deviation from the fitting line and makes the pattern visible. The check the normality of our data statistical we have also used the tests of Skewness and Kurtosis.

TABLE 5

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr (Skewness)	Pr (Kurtosis)	adj chi2(2)	Prob>chi2
IFI	96	0.5405	0.2580	1.71	0.4263

'sktest' displays the number of observations (80 in this case) and the probability of skewness, which is 0.5405 in this case, indicating that skewness is asymptotically normal (skewness p-value > 0.05). Likewise, Pr (Kurtosis) suggests that kurtosis is asymptotically distributed (kurtosis p-value > 0.05). Finally, chi (2) is more than 0.05, indicating that it is significant at the 5% level. As a result, the null hypothesis cannot be ruled out. As a result, the Skewness test for normality indicates that the residuals have a normal distribution.

Model 1: Financial Inclusion with Respect to Penetration

$$Yi = \beta 1 + \beta 2(Pentration) + Afghanistand1 + Bangladesh\, d2 + Pakistand7 + \mu i \qquad (4)$$

$$\begin{aligned} IFI = {} & 0.0749 + 0.436(Penetration) + (-0.0531 Afghanistan) + (-0.0176 Bangladesh) \\ & + (-0.0169\ Bhutan) + (-0.00539 Nepal) + (-0.0116 Maldives) \\ & + (0.00909 srilanka) + (0.0177 Pakistan) + \mathrm{e} \qquad (5) \end{aligned}$$

$$\begin{aligned} Dichotomousvariables & \{Afghanistan = 1, others = 0\} \\ & \{\text{Bangladesh} = 1, others = 0\} \\ & \{\text{Bhutan} = 1, \text{others}=0\} \\ & \{\text{Nepal}= 1, others = 0\} \\ & \{\text{Maldives}= 1, others = 0\} \\ & \{\text{Srilanka}= 1, others = 0\} \\ & \{\text{Pakistan}= 1, others = 0 \end{aligned}$$

The penetration dimension explains 0.537 of the index of financial inclusion. Afghanistan's index value is expected to decline by 0.0531 units, while Bangladesh's index value is estimated to decrease by 0.0176 units. In Bhutan, a negative coefficient is seen, implying that the index of financial inclusion decreases by 0.0169 units. Nepal (0.00539 units) and the Maldives face a similar problem (0.0116 units). Sri Lanka and Pakistan are the two exceptions, where the index value would increase by 0.00909 and 0.0177 units, respectively. Similarly, Mani, M. (2016), Anwar, S. R., Tanzo, T. T., and Mostafa, R. (2017) discovered that India performs better in South Asia. Pakistan has a banking penetration rate of only 23%, according to T. Nenova, C. T. Niang, and A. Ahmad (2009). Bangladesh's banking infrastructure is quite inadequate (Islam &

Mameen, 2011). Bhutan, too, is struggling to create costly infrastructure. (2013 Country Report-Bhutan)

TABLE 6

Stepwise Regression Results of Penetration, Banking Services and Usage

	(1)		(2)		(3)
VARIABLES	FII	VARIABLES	FII	VARIABLES	FII
D1 (Penetration)	0.537*** (0.045)	D1 (Penetration)	0.330*** (0.0045)	D1 (Penetration)	0.341*** (0.00296)
Afghanistan	-0.0531*** (0.00523)	D2(Banking services)	0.483** (0.763)	D2(Banking services	0.342*** (0.00531)
Bangladesh	-0.0176*** (0.00441)	Afghanistan	-0.0483*** (0.00581)	D3(Usage)	0.301*** (0.00225)
Bhutan	-0.0169*** (0.00385)	Bangladesh	-0.0138*** (0.00475)	Afghanistan	-0.00154*** (0.000403)
Nepal	-0.00539	Bhutan	-0.0173*** (0.00377)	Bangladesh	-0.000381 (0.000250)
Maldives	-0.0116*** (0.00386)	Nepal	-0.0126** (0.00605)	Bhutan	-0.000303 (0.000210)
Sri Lanka	-0.00909* (0.00512)	Maldives	-0.00332 (0.00512)	Nepal	-0.000449* (0.000247)
Pakistan	-0.0177*** (0.00474)	Sri Lanka	-0.0251*** (0.00929)	Maldives	-0.000474** (0.000233)
Constant	0.0749*** (0.00372)	Pakistan	-0.0244*** (0.00577)	Sri Lanka	-0.000430 (0.000307)
Observations	94	Constant	0.0445*** (0.00570)	Pakistan	-0.000191 (0.000262)
R-squared	0.92	Observations	94	Constant	0.00178*** (0.000502)
		R-squared	0.94	Observations	94
				R-squared	1.000

Source: World Bank and RBI) Note: figure in parenthesis are percentage of total

Model II: Financial Inclusion with Respect Banking Penetration and Banking Service

$$Yi = \beta 1 + \beta 2(Penetration) + \beta 3(Banking\ services) + AfghanistanD1 + Bangladesh\ D2 + \cdots \ldots \ldots \ldots PakistanD7 + \mu \quad (6)$$

$$IFI = 0.0445 + 0.330(Penetration) + 0.483 Banking\ services + (-0.0483 Afghanistan) + (-0.0138 Bangladesh) + (-0.0173\ Bhutan) + (-0.0126 Nepal) + (-0.00332 Maldives) + (-0.0251 srilanka) + (-0.0244 Pakistan) + \mathrm{e} \quad (7)$$

In Model II, we estimate the financial inclusion index using Banking Penetration and Banking Services. The calculated coefficient results of penetration (0.330) units and banking services (0.483) units explain a one-unit rise in the Index of financial inclusion. Afghanistan's calculated coefficient is negative (0.0483) units. Except for India, all SAARC countries' predicted values are negative. Each country's dummy results are negative, indicating that their relative coefficient estimates have a detrimental effect on financial inclusion. Bangladesh has 0.0138 units, Bhutan has 0.0173 units, Nepal has 0.0126 units, Maldives has 0.00332 units, Sri Lanka has 0.025 units, and Pakistan has 0.0244 units. Bangladesh, Bhutan, India, and Nepal, on the other hand, have an average of 30 to 50% of individuals with bank accounts. M. Mani (2016).

Model III: Financial Inclusion Explained by Banking Penetration, Banking Services and Usage

$$\begin{aligned} Yi = \beta 1 + \beta 2(Penetration) + \beta 3(Banking\ services) + \beta 4(Usage) + Afghanistan D1 \\ + Bangladesh\ D2 + \cdots \ldots \ldots \ldots Pakistan D7 \\ + \mu \end{aligned} \tag{8}$$

$$\begin{aligned} IFI = 0.00178 + 0.341(Penetration) + 0.342 Banking\ services \\ + 0.301 Usage\ (-0.00154 Afghanistan) + (-0.0000381 Bangladesh) \\ + (-0.000303\ Bhutan) + (-0.000449 Nepal) + (-0.000474 Maldives) \\ + (-0.000430 srilanka) + (-0.000191 Pakistan) \\ + \mathrm{e} \end{aligned} \tag{9}$$

We examined the combined performance of all dimensions in model III. The outcomes of each dimension are as follows: The calculated coefficient findings for penetration (0.341) units, banking services (0.342) units, and usage (0.301) units, respectively, explain a one-unit rise in the Index of financial inclusion. Afghanistan's calculated coefficient is negative (0.0015) units. All Each country's dummy results are negative, indicating that their relative coefficient estimates have a detrimental effect on financial inclusion. Bangladesh (0.0001), Bhutan (0.0005), Nepal (0.0015), Maldives (0.0005), Sri Lanka (0.0005), and Pakistan (0.0002), respectively. (Fern´andez-Val, 2009; Greene, 1999, 2004).

VII. CONCLUSION AND POLICY RECOMMENDATION

In this research, we examined the three most frequently acknowledged metrics of financial inclusion in South Asia. Financial inclusion's fastest growing component is banking services, followed by Usage and penetration. Indicators of financial inclusion in south Asian countries reveal regional disparities. India beats all other South Asian economies, with Afghanistan scoring notably poorly. Each country has its own unique set of financial inclusion policies and programmes. India is the only country that has launched financial inclusion programmes exclusively for the economically underprivileged. Our analysis discovered that all of South Asia's nations have low levels of financial inclusion.

Policymakers should prioritise the development of technological infrastructure and amenities that aid in dispelling opacity and information asymmetry in credit supply. In the long run, institutional quality and financial development are key factors in economic development and growth. The policy implications of South Asian economies should promote digital banking infrastructure. To increase financial inclusion countries should focus on lower account maintenance costs, increased proximity to financial institutions, and a strong and stable legal and political environment. South Asian Economies should give importance of expanding traditional financial literacy to include digital literacy, which has significant implications for countries considering both as a dual approach to enhancing households' long-run financial resilience.

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Appendix A

TABLE 1

Parameters of Financial Inclusion

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Number of Bank Accounts per 1000 Adults in South Asian countries												
Afghanistan			0.00	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.07	0.09
Bangladesh	0.03	0.04	0.04	0.04	0.04	0.06	0.07	0.07	0.07	0.08	0.08	0.08
Bhutan	0.06	0.06	0.07	0.07	0.09	0.13	0.05	0.13	0.18	0.20	0.21	0.22
India	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.16	0.18	0.21	0.25	0.29
Nepal		0.00	0.00	0.00	0.00	0.00	0.06	0.06	0.07	0.08	0.07	0.08
Maldives	0.10	0.11	0.12	0.13	0.14	0.15	0.14	0.15	0.18	0.15	0.16	0.16
Sri Lanka		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pakistan	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.05	0.06
Number of Commercial Bank Branches per 100000 population in South Asian Countries												
Afghanistan	0.002	0.003	0.004	0.006	0.007	0.006	0.006	0.006	0.007	0.007	0.007	0.007
Bangladesh	0.024	0.023	0.023	0.024	0.025	0.027	0.028	0.029	0.031	0.034	0.035	0.035
Bhutan	0.047	0.043	0.044	0.044	0.049	0.060	0.045	0.061	0.061	0.064	0.064	0.065
India	0.031	0.030	0.031	0.033	0.034	0.038	0.041	0.045	0.051	0.057	0.060	0.064
Maldives	0.041	0.039	0.040	0.041	0.040	0.043	0.043	0.043	0.045	0.048	0.049	0.049
Nepal	0.008	0.011	0.011	0.015	0.016	0.026	0.030	0.030	0.032	0.036	0.037	0.039
Sri Lanka	0.043	0.045	0.049	0.052	0.056	0.065	0.067	0.070	0.074	0.079	0.079	0.080
Pakistan	0.028	0.027	0.028	0.029	0.029	0.032	0.032	0.035	0.037	0.041	0.042	0.043
ATM'S per 100000 Population												
Afghanistan	0.000	0.001	0.001	0.001	0.001	0.001	0.002	0.000	0.000	0.000	0.000	0.000
Bangladesh	0.001	0.002	0.003	0.005	0.007	0.012	0.013	0.015	0.017	0.021	0.025	0.025
Bhutan	0.002	0.009	0.013	0.016	0.030	0.048	0.026	0.066	0.076	0.093	0.090	0.091
Maldives	0.031	0.070	0.064	0.067	0.061	0.058	0.069	0.072	0.088	0.093	0.104	0.111
India	0.012	0.014	0.017	0.021	0.026	0.030	0.038	0.043	0.061	0.068	0.073	0.084
Sri Lanka	0.000	0.040	0.046	0.051	0.050	0.053	0.054	0.055	0.057	0.059	0.058	0.059
Nepal	0.031	0.070	0.064	0.067	0.061	0.058	0.069	0.072	0.088	0.093	0.104	0.105
Pakistan	0.009	0.012	0.014	0.016	0.015	0.016	0.019	0.020	0.024	0.028	0.032	0.036
Deposits Percentage of GDP												
Afghanistan	0.016	0.011	0.021	0.024	0.034	0.040	0.032	0.031	0.028	0.020	0.033	0.037
Bangladesh	0.099	0.090	0.083	0.083	0.103	0.119	0.119	0.121	0.114	0.105	0.107	0.108
Bhutan	0.096	0.087	0.085	0.115	0.161	0.159	0.142	0.135	0.125	0.119	0.121	0.123
India	0.123	0.117	0.116	0.128	0.159	0.176	0.175	0.171	0.160	0.151	0.160	0.163
Maldives	0.078	0.073	0.070	0.085	0.116	0.122	0.121	0.116	0.114	0.110	0.109	0.110
Nepal	0.097	0.094	0.094	0.115	0.154	0.164	0.172	0.178	0.172	0.162	0.161	0.160
Sri Lanka	0.078	0.066	0.058	0.059	0.065	0.074	0.069	0.073	0.070	0.068	0.069	0.069
Pakistan	0.080	0.072	0.065	0.055	0.071	0.070	0.071	0.071	0.064	0.056	0.057	0.061
Credit Percentage of GDP												
Afghanistan	0.153	0.161	0.168	0.184	0.174	0.256	0.143	0.141	0.107	0.086	0.104	0.019
Bangladesh	0.307	0.299	0.301	0.310	0.315	0.402	0.303	0.293	0.263	0.248	0.266	0.285
Bhutan	0.230	0.222	0.210	0.272	0.283	0.377	0.284	0.272	0.230	0.226	0.245	0.229
India	0.342	0.335	0.354	0.361	0.360	0.436	0.348	0.343	0.304	0.289	0.301	0.329
Maldives	0.302	0.325	0.339	0.359	0.367	0.424	0.315	0.299	0.259	0.255	0.291	0.305
Nepal	0.291	0.299	0.339	0.353	0.341	0.415	0.325	0.320	0.291	0.287	0.330	0.379
Sri Lanka	0.297	0.284	0.276	0.274	0.256	0.385	0.288	0.292	0.265	0.270	0.293	0.229
Pakistan	0.285	0.287	0.301	0.294	0.285	0.360	0.268	0.271	0.231	0.217	0.242	0.246

Source: World Bank and RBI, Note: Figure in Parenthesis Are Percentage of Total

Appendix B

TABLE 2

Dimensions of Financial Inclusion

Dimension 1 (Banking Penetration) Number of Bank Accounts per 1000 Adults in South Asia Countries												
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Afghanistan			0.00	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.07	0.09
Bangladesh	0.03	0.04	0.04	0.04	0.04	0.06	0.07	0.07	0.07	0.08	0.08	0.08
Bhutan	0.05	0.06	0.07	0.07	0.09	0.13	0.05	0.13	0.18	0.20	0.21	0.22
India	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.16	0.18	0.21	0.25	0.29
Nepal		0.00	0.00	0.00	0.00	0.00	0.06	0.06	0.07	0.08	0.07	0.08
Maldives	0.10	0.11	0.12	0.13	0.14	0.15	0.14	0.15	0.18	0.15	0.16	0.16
Sri Lanka		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pakistan	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.05	0.06
Dimension 2 (Availability/ Banking Services) Year Wise Number of Commercial Banks and Number of ATM per 100000 Adult Populations from 2006-2015												
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Afghanistan	0.001	0.002	0.002	0.004	0.004	0.004	0.004	0.003	0.003	0.004	0.004	0.007
Bangladesh	0.013	0.012	0.013	0.014	0.016	0.019	0.021	0.022	0.024	0.028	0.048	0.048
Bhutan	0.025	0.026	0.028	0.030	0.040	0.054	0.036	0.063	0.069	0.079	0.109	0.111
India	0.031	0.050	0.048	0.050	0.048	0.048	0.055	0.058	0.070	0.075	0.112	0.120
Nepal	0.027	0.027	0.029	0.031	0.033	0.037	0.040	0.043	0.053	0.058	0.086	0.091
Maldives	0.004	0.025	0.028	0.033	0.033	0.039	0.042	0.043	0.045	0.048	0.112	0.069
Sri Lanka	0.030	0.049	0.046	0.048	0.045	0.045	0.051	0.053	0.063	0.067	0.086	0.133
Pakistan	0.026	0.028	0.031	0.034	0.036	0.041	0.043	0.045	0.049	0.054	0.058	0.061
Dimension 3 (Usage) Year Wise Percentage of Bank Deposits and Bank Credit % of GDP												
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Afghanistan	0.085	0.086	0.094	0.104	0.104	0.148	0.087	0.067	0.067	0.053	0.085	0.047
Bangladesh	0.203	0.195	0.192	0.197	0.209	0.260	0.211	0.189	0.189	0.177	0.240	0.251
Bhutan	0.163	0.154	0.148	0.194	0.222	0.268	0.213	0.178	0.178	0.172	0.244	0.138
India	0.233	0.226	0.235	0.244	0.259	0.306	0.261	0.232	0.232	0.220	0.311	0.328
Nepal	0.190	0.199	0.204	0.222	0.241	0.273	0.218	0.186	0.186	0.182	0.255	0.263
Maldives	0.194	0.196	0.216	0.234	0.248	0.289	0.248	0.231	0.231	0.225	0.326	0.350
Sri Lanka	0.188	0.175	0.167	0.167	0.160	0.229	0.179	0.168	0.168	0.169	0.216	0.084
Pakistan	0.182	0.179	0.183	0.174	0.178	0.215	0.169	0.148	0.148	0.137	0.178	0.184

Source: World Bank and RBI Note: Figure in Parenthesis Are Percentage of Total.