Innovations

Financial Inclusion among South Asian Association for Regional Cooperation Countries

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Abstract:

This study aims to measure financial inclusion among (SAARC) countries from the time-period of 2010-2020.SAARC has eight member countries (Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka). But data is available only for 6 countries except Sri Lanka and Afghanistan). Financial inclusion has evolved into a growth-promoting force that can benefit and open new chances for society. As a result, tracking the progress of financial inclusion is crucial. There must be immediate action made to increase financial inclusion across the country. Firstly, financial inclusion is having access to an account, which allows individuals to hold and conduct transactions with money. Having a bank account is not a need for financial inclusion, but using banking services is just as important. The Wroclaw Taxonomy method is applied to frame the index of financial inclusion. Further, determinants of financial inclusion were also studied by applying the fixed-effect model. The finding shows that Bhutan, Nepal and Maldives have a high level of financial inclusion whereas India, Bangladesh and Pakistan have a low level of financial inclusion. Further, credit and GDP have a substantial but negative effect on the index of financial inclusion (IFI), whereas, literacy rate, and employment, have significant and positive effects on IFI.

Keywords*: 1.Financial Inclusion, 2.SAARC, 3.Indicators, 4.Index,*

1. Introduction

The importance of access to finance in enabling people to pursue their goals is increasingly coming to light. It has been widely supported as a strategy for fulfilling the various Millennium Development Goals (Claessens and Feijen 2007). An efficient financial system makes it possible for resources to be moved as efficiently as possible, hastening the growth of an economy. Having an official financial firm account is referred to as "financial inclusion." These accounts allow you to keep and borrow money, purchase insurance, and to pay. One's ability to access economic gains is improved by financial stability. It makes it possible for people with low incomes and other disadvantages to earning more money and has more employment opportunities (Bruhn and Love, 2014). Promoting social progress and economic growth requires the efficient distribution of funds through inclusive finance (Fareed et al., 2017). Concerns have been expressed about the low financial literacy of young people around the world. The financial literacy of teenagers is also affected by factors such as gender, age, income, level of education, and marital status (Garg and Singh, 2018). Bongomin et al. (2018) observed that poor's cognitive capacities have a significant moderating effect on the association between financial literacy and financial inclusion. The inclusion of the financial sector (FI) is essential for long-term global growth. Access to financial services affects economic prospects. Financial inclusion significantly aids in promoting a stable and effective financial system, which leads a country toward prosperity. The continuous flow of resources and effective mobilization by a strong financial system speeds up economic progress. Elimination of poverty,

promotion of inclusive development is crucial for the accomplishment of Millennium Development Goals (MDGs) and financial inclusion (FI) offers additional and advanced methods for this (Chibba, 2009). Lucas (1988) showed that not all instances of the relationship between growth and finance are positive which had forced him to conclude that the scholars are frequently exaggerating the importance of the financial system. Robinson (1952) banks are passive economic development agents in a country. As a result, this nexus needs to be examined across many economies and historical periods (in this case from 2010 to 2020) because it may change as a result of various economic and political circumstances. Financial inclusion as a component of financial development is not well studied in the literature. Financial inclusion may be viewed by economies as a goal that will add to costs or as something that will result in ineffective use of resources, which would eventually lead to a decline in economic progress. However, In order to maintain economic security and ensure the development of all demographic factors, financial inclusion plays an essential role.

2. Review of Literature

The literature on financial inclusion has received considerable contributions from researchers all across the world. Numerous pieces of research have been done in this area. Financial inclusion via cooperative banks has a direct impact on the eradication of poverty (Lal, 2018). According to Koku (2015), one of the primary reasons why monetary autonomy has such a profound effect on the economy is because the vast majority of people at the bottom of the social pyramid are able to save substantially. According to Dupas and Robinson (2013), having access to financial services, notably savings, credit, and methods of payment, can have a large and favourable effect on the living situations of individuals who are deemed to be economically disadvantaged. According to Park and Mercado (2018), higher financial inclusion makes it possible for people to save more money, the eradication of poverty, the promotion of capital accumulation, and the increased development of the economy may require some types of reform to be implemented. In addition, increased financial inclusion makes it feasible for people to invest more money, which may also be required. Inclusion in the financial system has a significant bearing on the capacity of smallholder farmers to lift them out of poverty. Farmers are required to take an active role in the economy through the use of savings accounts, loans, and insurance (Mhlanga et al., 2020). It is generally accepted that some types of social exclusion are more detrimental to those who are economically excluded. Leyshon and Thrift (1995) Financial exclusion claims to be actions that prevent people from using the public financial system. People are more likely to utilize their financial resources to meet fundamental necessities like having a place to live, food to eat, and enough medical care; to buy indulgences; to look for investment opportunities; and to keep their enterprises running. Give. Bruhn and Love's (2014) findings. According to Bongomin and Ntayi's (2020) research, the use of mobile money and its adoption both have direct and indirect implications on a country's level of financial inclusion. Acceptance and utilization of mobile money as well as the provision of digital buyer protection are also factors that further boost financial inclusion. According to Banna et al., 2020, by promoting sustainable economic growth and stability within Islamic financial institutions, digital financial inclusion can help achieve the Sustainable Development Goals (SDGs). Aside from the widespread availability of mobile phones and the Internet, the combination of these two technologies has emerged as an essential component for achieving financial inclusion in the countries that make up the WAEMU (Senou *et al.,* 2019). Digital financial services enable informal enterprises to register and go on as usual while fostering coordination between various reform projects. Digital financial transactions safeguard the government's ability to enact laws and regulations, including tax collection (Klapper et al., 2019). People who only had access to a bank account were unable to use banking services, so they favoured doing business with companies that were more accommodating to their needs. Although the availability of bank accounts has increased in India, those who only had access to a bank account were previously unable to use the bank's services. Simply opening bank accounts is insufficient to meet the inclusion criteria and achieve financial inclusion. Banks must be timely and flexible to provide customers with a broad variety of services (Ranjani and Bapat, 2015).

2.1 Dimensions of financial inclusion

The availability of financial services in terms of banking penetration, bank accounts, insurance with the availability of infrastructural facilities such as bank branches, offices and ATMs and so on, indicated as a financial inclusion (Goel and Sharma, 2017). Further Sharma (2012) and Sethy (2016) separate these services into the demand side dimensions of financial inclusion, which include bank usage and penetration, and the supply side dimensions, which include access to savings and insurance. This study examines three dimensions of financial inclusion: bank penetration, access, and usage, as well as the indicators associated with each dimension, including deposit accounts (the number of deposit accounts at commercial banks per 1,000 adults), bank branches, ATMs, insurance (the number of insurance corporations), etc.

3. Materials and Methods

3.1. Data, research models and measurement variables

3.1.1 Data.

To achieve the objective of this study, the Wroclaw Taxonomy method is used to frame the index of financial inclusion. Further, determinants of financial inclusion were also studied by applying the fixed-effect model. Data for the current study were taken from World Development Indicators (WDI) and IMF Financial Access Survey. The data covers 6 SAARC countries for the period 2010 to 2020.

3.1.2 Research models and measurement variables.

The study assumed that$[X_{ij}]$is the data matrix that specifies the values of the variables for the i^{th} nation, where i is the number of countries (1, 2... n), and j is the pointer (1, 2,... k) (No. of indicators). Each nation is represented in a k-dimensional space by a vector. Considering that the presumed units of measurement are not all the same. Therefore, $[X_{ij}]$ is converted to the matrix of standardized indicators $[Z_{ij}]$ as:

$$[Z_{ij}] = \frac{(X_{ij} + \bar{X})}{(S_j)}$$

$\bar{X}_i$= average of the jth indicator, S_{j} = S.D (standard deviation) of the j^{th} indicator and $[Z_{ij}]$ matrix of standardized indicators. Find the highest or lowest value of each indicator from $[[Z_{ij}]$, depending on the way the indicator affects the development status.

$P_{ij} = (Z_{ij} - Z_{oj})^2$ and $(C_i) = \sqrt{\sum_{j=1}^{k} \frac{P_{ij}}{cv_j}}$

Where P_{ij}= pattern of development, Z_{oj}= optimum value for indicator, and $CV_j$is the coefficient of variation of the jth indicator in X_{ij}.

D_i (Composite Index) =$\frac{C_i}{C}$

Where C = (Average Value of C_i + 3* (S.D of C_i)

Table 2 shows the criteria for the stage of development. In the context of this investigation, Di - stands for the value of IFI. The value of Di might be anywhere between 0 and 1. According to the value assigned by the IFI, there were four distinct stages of development to be found: high, high medium, low middle, and low. This indicates that the high-level development stage has been reached if the IFI was either lower than or equal to (Average - S.D). IFI that was either larger than or equal to (Average + S.D.) characterized the stage of low-level development. If the IFI was between (Average) and (Average-S.D), the stage of financial inclusion was high medium level; if it was between (Average) and (Average + S.D), the stage of financial inclusion was low middle level (Ohlan, 2013; Shee and Maiti, 2017). If the IFI was between (Average) and (Average + S.D), the stage of financial inclusion was low middle level.

Table 1 Criteria for categorisation

Stages of development	Categories	Criteria	2010	2020
1st	High	IFI Value ≤ Mean - S.D	0.338	0.319
2nd	High Middle	IFI Value Between (Mean) and (Mean-S.D)	0.504 and 0.338	0.489 and 0.319
3rd	Low Middle	IFI Value Between (Mean) and (Mean + SD)	0.504 and 0.669	0.489 and 0.660
4th	Low	IFI Value ≥ Mean + S.D	0.669	0.660

Source: Compiled by author

Table 1 presents the criteria for the stage of development. There are two extreme categories of development i.e. high and low and between two categories; there is high middle and low middle category. If a country has IFI greater than 0.338 and 0.319 in 2010 and 2020 respectively then that country has a high level of financial inclusion. But if a country has an IFI greater than 0.669 and 0.660 in 2010 and 2020 that country has a low level of financial inclusion.

Table 2: Comparative analysis for the years 2010 and 2020

2010				2020			
Country	Di	Ranking	Stage	Country	Di	Ranking	Stage
Bangladesh	0.579	4	3rd	Bangladesh	0.646	5	3rd
Bhutan	0.350	2	2nd	Bhutan	0.338	1	2nd
India	0.407	3	2nd	India	0.405	4	2nd
Maldives	0.311	1	1st	Maldives	0.401	3	2nd
Nepal	0.586	5	3rd	Nepal	0.352	2	2nd
Pakistan	0.790	6	4th	Pakistan	0.794	6	4th
MEAN	0.504			MEAN	0.489		
SD	0.165			SD	0.170		

Source: Compiled by authors

4. Results and discussion

Table 3 shows the comparative analysis of financial inclusion for the years 2010 and 2020. In 2010, Maldives has the first rank with an IFI value of 0.311 but in 2020 it declined to the third rank with an IFI value of 0.401. It shows financial inclusion decreased in Maldives. Bhutan has the second rank in 2010 with an IFI value of 0.350 but it got the first rank with an IFI value of 0.338 in 2020. It shows the progress of financial inclusion in Bhutan. Nepal shows remarkable progress in terms of financial inclusion as it advanced the second rank in 2020 with an IFI value of 0.352 whereas in 2010 it has the fifth rank with an IFI value of 0.586. India, Bangladesh and Pakistan declined in terms of IFI value in 2020 compared to 2010. Overall financial inclusion progressed among SARC couriers in 2020 compared to 2010 as the mean IFI value declined to 0.489 which was 0.504 in 2010.

4.1. Determinants of financial inclusion

Chikalipah (2016) observed that illiteracy is a key barrier to FI in SSA. GDP growth and GNP per capita have a positive effect on financial inclusion, but the population has no effect. The network of branches has an explicit and favourable influence on financial inclusion. Both the ratio of factories and the employee base significantly determine penetration. Mihasonirina and Kangni (2011) showed a significant impact of communication technologies (ICT), such as fixed phones, mobile phones, and the price of a call, on financial inclusion. Financial inclusion has a short-run impact on investment in fixed and human capital and long-run effects on GDP per capita (Kanga *et al.,* 2021).

Table 3: Determinants of financial inclusion

Variable	Description	Measurement
Dependent Variable		
IFI	Index of financial inclusion	Calculated by Wroclaw taxonomy
Independent Variable		
lnGDP	Gross domestic product per capita (constant 2015 US$)	log(gdp)per capita (constant 2015 US$)
Credit	Domestic credit to the private sector	Domestic credit to the private sector (% of GDP)
LR	Literacy rate,	Literacy rate, adult total (% of people ages 15 and above)
Population	Population ages 15-64	Population ages 15-64 (% of the total population)
Employment	Employment ratio	Employment to population ratio, 15+, total (%)

Source: Compiled by author

4.2. Econometric model

$$IFI_{it} = \beta_0 + \beta_1 GDP_{it} + \beta_2 Credit_{it} + \beta_3 LR_{it} + \beta_4 Population_{it} + \beta_5 Employment_{it} + \varepsilon_{it}$$

Firstly, we applied the Hausman test to check the appropriateness of the model.

H_0: The random effect model is preferred.

Table 4: Hausman Test result

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	P-value
Cross-section random	87.69031	5	0.000

Source: Compiled by author

The Hausman test shows that the p-value is less than 0.05, so we are not able to accept H0 and, therefore, the fixed-effect model is applied.

Table 5: Regression results

Variable	Coeffi.	S. E.	t-Statistic	P-value
C	2.270	0.692	3.282	0.002
GDP	-0.567	0.241	-2.350	0.022
CREDIT	-0.007	0.001	-5.337	0.000
LR	0.008	0.003	2.767	0.008
EMPLOYMENT	0.003	0.001	2.074	0.043
POPULATION	-0.004	0.010	-0.403	0.689
Effects Specification				
R^2		0.913		
Adjusted R^2		0.897		
F-statistic		57.470		
P-value		0.000		

Source: Compiled by author

Table 5 summarizes the regression results of the determinants of the index of financial inclusion in 6 SARC countries for the period 2010-2020. As shown in Table 5, four variables significantly affect IFI at a statistical significance of 0.05: GDP, credit, literacy rate, and employment rate. GDP and credit have a significant but negative effect on IFI, whereas, LR, and employment, have positive and significant effects

on IFI. Access to credit is a vital component of financial inclusion but shows that credit is negatively and significantly related to financial inclusion. The possible reason may be that bank demands security to provide credit and maybe all people are not able to fulfil this condition. Further, the LR has a positive and significant effect on financial inclusion, which means that financial inclusion increases with the increase in the level of literacy rate (Shihadeh, 2018). And also population have a negative effect but is not significant. The Adjusted R-squared is 0.897 which means independent variables explain 89.7% variation in financial inclusion. Inclusion in the financial system has a positive impact on a number of important metrics, including the GDP per capita, employment rates, human development, internet usage, and the credibility of governments (Shaban *et al*., 2020). Financial inclusion alleviates poverty and promotes economic growth. The study observed that being male, highly educated, richer, and aged enhanced financial inclusion with a higher effect on income and education (Zins and Weil, 2016). Chikalipah (2016) observed that illiteracy is a key barrier to FI in SSA. GDP growth and GNP per capita have a positive effect on financial inclusion, but the population has no effect.

5. Conclusion

Easy access to financial products and services is considered to be a crucial element of both economic and societal growth. Inclusion in the financial system is one of the most important elements that must be developed in order for a nation to make the kind of progress that is essential for its continued success. People who are not a part of the formal financial system are at risk for a number of negative outcomes, including fewer opportunities to succeed in business and increased social exclusion. People, especially women, gain considerable financial and social inclusion when they have access to money because this significantly boosts empowerment. The reduction of poverty and the growth of the economy are both benefits of financial inclusion. According to Sha'ban et al.'s research from 2020, the presence of financial inclusion has a favourable impact on GDP per capita, bank competitiveness, employment, human development, internet use, and the integrity of government. According to the findings, India, Bangladesh, and Pakistan have a relatively low degree of financial inclusion, whereas Bhutan, Nepal, and the Maldives have a relatively high level of financial inclusion. Further, GDP and credit have a significant but negative effect on IFI, whereas, LR, and employment, have positive and significant effects on IFI. Credit should be equally distributed to all sections of society at the lowest cost and the government should increase literacy and generate employment opportunities.

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Appendix A

IFI value and respective ranking for the years 2010-2020

	2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020	
Countries	Di	Rank	Di	Rank	Di	Rank	Di	Rank	Di	Rank	Di	Rank	Di	Rank	Di	Rank	Di	Rank	Di	Rank	Di	Rank
Bangladesh	0.579	4	0.600	4	0.594	5	0.560	4	0.564	4	0.578	5	0.615	5	0.633	5	0.666	5	0.681	6	0.646	5
Bhutan	0.350	2	0.156	1	0.391	3	0.295	1	0.281	1	0.291	1	0.294	1	0.296	1	0.318	1	0.149	1	0.338	1

India	0.4077	3	0.4377	3	0.3336	1	0.3642	2	0.3255	2	0.3211	2	0.3211	2	0.3582	2	0.4092	2	0.3503	3	0.4054	4
Maldives	0.3111	1	0.3682	2	0.3556	2	0.4464	3	0.4563	3	0.4703	3	0.4583	3	0.4555	3	0.5084	4	0.4033	4	0.4011	3
Nepal	0.5866	5	0.6400	5	0.5766	4	0.5682	5	0.5655	5	0.5500	4	0.5404	4	0.5082	4	0.4433	3	0.2299	2	0.3522	2
Pakistan	0.7900	6	0.6400	6	0.7966	6	0.8022	6	0.7846	6	0.7866	6	0.7746	6	0.7866	6	0.7888	6	0.6444	5	0.7944	6
MEAN	0.5047		0.4748		0.5086		0.5066		0.4966		0.4999		0.5000		0.5066		0.5222		0.4089		0.4889	
SD	0.1655		0.1755		0.1644		0.1655		0.1688		0.1677		0.1677		0.1655		0.1559		0.1997		0.1700	