Estimation of Financial Inclusion Index for Developing Countries

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Abstract

This research study examines to what extent financial inclusion is achieved in Developing Countries. For this purpose, this study calculates the financial inclusion index on the sample of 75 Developing Countries from 2010-2018. The estimation of the Indexing strategy is based on two stages. The first stage is an estimation of principal component analysis computed for four dimensions' sub-indices of the index. The 24 financial indicators categorized into four dimensions of the financial inclusion index are access, usage of financial services, technology, and infrastructure. The second stage is constructing the normalization of values of each dimension and, finally, estimating an overall index based on given dimensions through Euclidean Formula. This study finds out the National Financial Inclusion Strategy is required for each country to achieve higher financial inclusion. The goal of objectives settled in the National Financial Inclusion Strategy is based on their economic planning. The foremost priority goals set for the National Financial Inclusion Strategy are expanding financial access points, including the branch network, developing the Small and Medium Enterprises sector, and achieving the highest level of financial literacy. The priority of these goals varies from country to country. The countries, including Romania, Serbia, and Mauritius, have a priority goal of achieving financial literacy. On the other side, countries including Pakistan, Costa Rica, Rwanda, and Guinea prioritize developing Small and Medium Enterprises. In contrast, countries that focus on expanding networks are Guatemala, Mauritania, Thailand, and Ukraine.

Keywords: Financial Access, Financial Inclusion, Financial Institution, Developing Countries, Digital Innovation, National Financial Inclusion Strategy

JEL Codes: G21, O1

1. Introduction

The term "Financial Inclusion" defines undercover contents of World Bank Group that describe that consumers and entrepreneurs had unlimited access to use the services of financial products that fulfill their financial needs (daily transactions, financial transfers, loan requirement, and beneficial savings) under the sustainable mechanism. The financial requirement of individuals demands a variety of ways to access financial resources. Therefore, it becomes a challenge for policymakers to provide affordable solutions that offer greater access to every individual, including the poor and residents of underserved areas. Access to financial resources helps individuals in daily transactions and saves in uncertainty (risk and financial shock). The fact states that currently, 69% of adults have financial accounts. Still, 1.7 billion adults have no account. The matter is different for developing countries, the gender gap record 9% point in account ownership. Furthermore, an additional challenge for policymakers is enhancing financial inclusion for women.

Countries with higher financial inclusion have taken many initiatives in their policies, such as the transfer of Government Payments in accounts, mobile financial accounts, new e-commerce business models, and national financial inclusion strategy. National financial inclusion strategies (NFIS) are described as guidelines and patterns of actions at sub-national and national level frameworks in which achievements of pre-defined objectives lead diagnostics, targets & goals, leadership & coordination, strategy formulation, strategy implementation, and monitoring & evaluation. Countries that produce a framework of NFIS are Pakistan, Peru, Paraguay, Ethiopia, Haiti, and Mozambique to promote reforms and financial stability.

Jenik & Zetterli (2020) focuses on three innovation actors: digital banks, Fintech startups, and Platforms. Technological innovation revolutionizes the banking industry in many ways, such as greater scalability & low-cost structures, advanced operational capabilities, and an effective customized financial experience. They highlight three financial inclusion models: fully digital retail banks, banking as a service, and marketplace banks. The study proposed digital banking license financial service providers, which create revenue generation activities from intermediation of retail transactions associated with money transfers and storing. This study covers the perspective of digital banking members and other experts regarding the impact of financial technology. The key characteristics of the fully digital and retail bank are providing the cheap, fast, and convenient facility that transforms traditional banks with the latest technologies. The marketplace bank is taken as One Stop Shop (OSS) to provide financial facilities to offer affordable access to banking financial products. The critical characteristics of marketplace banks have more significant economies of scope than Fintech and E-Commerce competitors. The banking-as-a-services are owned by the technology companies having a bank license to provide banking financial products and other utilities. The key characteristics of their model have cutting-edge technology.

The high poverty level is the major challenge of developing countries. To overcome this challenge, it is mandatory to raise the standards of living of poor people. The problem of poverty will be reduced through the provision of access to finance to poor people. For this purpose, expanding financial access to underserved areas is the main objective for developing countries. This study estimates the Financial Inclusion Index to analyze the struggles of developing countries to achieve financial inclusion targets. Furthermore, this study explores the policy perspectives that help to promote financial inclusion. This research investigates the following essential questions for developing countries are under noted as:

1. What is the status of financial inclusion in Developing Countries?
2. Whether or not current economic policies support financial inclusion in developing countries?

The requirement to construct the Financial Inclusion Index includes multidimensional attributes and appropriate indicators for the validity of the research study. For this purpose, this study expands the criteria of dimensions and their financial indicators as per the requirement of modern needs. This basic theory to select financial indicators is the psychological behavior of people to stay in the process of financial inclusion. Financial inclusion is wrongly considered as a single-oriented process by researchers. This process requires financial consistency, like the constant flow of transactions by people through financial services. On that basis, the significance of this study is to construct the index based on coverage of the transaction flows in the economy.

The rest of the study comprises the following sections: literature review, research methodology, research analysis, suggestions, and conclusion.

2. Literature Review

Camara and Tuesta (2014) had an estimated multidimensional index of financial inclusion. The inclusion includes the dimension of access to financial inclusion, barrier, and usage. The criteria of the index are two stages of principal component analysis. First, it measures the extent of the Demand-Supply Gap. The Dimensional Index is generated for eighty-two less developed and developed countries. The first stage of weight-based principal component analysis of sub-indices and subsequent examines the overall index. The Demand Side of financial inclusion is usage and barrier, which supply-side represent the related indicator of access. The financial Inclusion Index positively correlates with GDP per Capita while negatively correlates with net interest margin and financial stability. Gupte et al. (2012) estimate financial inclusion taken as quasi-public good for India. This study uses the modified method of human development Index as linearized the data in the form of sub-indices. The variables used in this study locations are open Deposit Account, the minimum amount to open Saving Account (% of GDP per capita), minimum amount maintaining in Saving Account (% of GDP per capita), numbers of documents to open checking account (out of 5), numbers of documents to open Saving Account (out of 5), the minimum amount for a mortgage loan (% of GDP), Days to process consumer loan application, Days to process mortgage loan application in ease of application dimension. The outreach dimensions include geographic branch penetration, geographic ATM Penetration Branch, Numbers of accounts per 1000 adults. This study consists of four dimensions, outreach, usage, ease of transaction, and the index to measure the excellent performance of financial inclusion. Yorulmaz (2013) had constructed the Financial Inclusion Index for turkey. The methodology adopts the formation of the human development Index. The variables are the numbers of bank outlets (per 1000 people) and ATM outlets per 1000 people. The distribution of data is Region wise in Turkey. The finding of this study shows that the declining trend is observed in some regions from 2004 to 2010 span of time.

Ambarkhane et al. (2016) this study examines the Financial Inclusion Index for India. The variables used in this study are the number of bank branches, numbers of business correspondents. The numbers of financial literacy, mobile users, post offices, microfinance institutions, insurance agents, and micro-insurance channels are part of the supply-side dimension. The demand side dimension variables include Numbers of deposit Account, Numbers of small borrowers account, domestic remittances, and numbers of accounts in microfinance institutions, Numbers of subscribers to the pension scheme, insurance density, and insurance penetration. The infrastructure dimension and its indicators are irrigation, transport, power, literacy, and health. Drag factors are population growth, law and order situation, and corruption. The finding of this study suggests the given index satisfies all axioms of anonymity, monotonicity, proximity, uniformity, signaling. The composite index of the UNDP approach is the multidimensional approach, and the average is used to average three dimensions. Ambarkhane et al. (2016) implement its proposed methodology of Financial Inclusion Index to examine financial inclusion in Indian states. Resultantly, the proposed index ultimately defines financial inclusion in Indian states.

Sethy (2016) estimates the Financial Inclusion Index while examining the relationship between inclusive growth in India. The methodology is based on three dimensions and demand and supply-side indicators. Demand Side indicators are banking penetration, Availability of Banking services, and Usage of the Banking System. Supply-side indicators are access to savings, Access to Insurance proportions of households, and Bank Risks, including the number of loans given to small enterprises. This study covers the demand and supply-side dimensions to convert the data into meaningful interpretation. Okpara (2013) estimates the signal of indicators defined in the Financial Access Survey. This study uses an average ratio Index method and computes Chi-Wins Financial Inclusion Index. This study solely estimates the rural bank in the index. The variables used in this study are GDP, total outstanding, total deposit, rural loans, rural deposits, whole domestic bank branches, and Rural Bank Branches. The findings of this study are the consumption of a more straightforward average method to compute the program. This study estimates the Financial Inclusion Index used by UNDP. The indicators are Numbers of Accounts (per 1000 population), banking services in location, Numbers of ATM/ Commercial Bank per 1000 people, Access to Insurance 1000 square Kilometer. According to the author's findings, the Indian economy is experiencing financial inclusion at the medium level.

Sriram & Sundaram (2015) examine the financial inclusion of four districts of Tamil Nandu, India. This study uses the financial inclusion index and extracts data from a questionnaire sample size of 384. This study finds out the low level of financial inclusion were inadequate income, lack of financial knowledge, complex documentation process, and no guidance regarding financial inclusion are the limitations for financial inclusion. Pineyro (2012) examines financial inclusion in the municipalities of Mexico. This study uses 20 indicators, including access usage, financial literacy, and social consumer protection. The methodology used in this study is the principal component analysis and ward method, while the distance component is measured through the Euclid formula. The contribution of this study is using consumer protection in the Financial Inclusion Index.

Based on previous literature, the dimension of financial inclusion is limited to access to financial services, banking penetration, and usage of financial services. However, some studies focus on some new creative dimensions such as infrastructure, Cost technology, etc. This study concentrated on access points of financial services and chose the appropriate dimensions in constructing the index. Financial Inclusion Index comprises availability of financial services, usage of financial services, communication technology, and infrastructure. The use of financial services includes financial consistency, such as the circulation of debit and credit cards. Furthermore, communication technology provides internet services, mobile subscriptions, and other coverage, etc. The infrastructure dimension includes the appropriate technologies associated with financial access.

3. Research Methodology

3.1. Variables and Data Source

Financial inclusion is the food for thought concern for economic policymakers. This study estimates the extent of financial inclusion of selected Developing Countries. For this purpose, the Financial Inclusion Index comprises dimensions: access, usage of financial resources, Technology, Infrastructure, and provision of financial resources. The financial institution's sufficient provision of financial services and enough availability of access points had not portrayed the true potential of financial inclusion. It is considered that the use of financial services is possible through the given access points of financial inclusion. The access points include ATMs and Branches of Commercial Banks that have physical access, which is used probably only for those who have a dire need to use financial services. These access points have their limitations, and financial resources require financial consistency in their use. The advent of the technology enables the process of financial inclusion to expand rapidly. Communication technology like mobile cellular subscriptions, internet services, and broadband subscriptions introduce the era of digital innovation. On that basis, the estimation of the Financial Inclusion Index is underestimated due to a lack of not including the aspects of digital innovation. The modern requirement of this era is providing the different technologies which enhance the usage of financial services in multipurpose (having multiple accounts) instead of having a single account in the branch. In physical structure, infrastructure quality is the crucial factor for the expansion of financial inclusion. The excellent quality of infrastructure creates the geographic expansion of financial access points (constructions of ATMs and Branches), especially in underserved areas such as rural and unbanked areas, etc. Table 1 shows the construction of the Financial Inclusion Index based on 4 sub-indices and their financial indicators.

Table 1: Construction of Financial inclusion Index and its Sub-indices

S.No.	Sub-Indices	Financial Indicators	Countries
1	Availability of Financial Access	1. Number of commercial bank branches per 100,000 adults. 2. Number of ATMs per 100,000 adults 3. Number of commercial bank branches per 1,000 km2 4. Number of ATMs per 1,000 km2	Afghanistan, Honduras, Mauritius, Seychelles, Albania, Chad, India, Moldova, Solomon Islands, Algeria, China, Indonesia, Montenegro, Angola, Chile, Kazakhstan, Myanmar, South Sudan, Argentina, Colombia, Kenya, Namibia, Sudan, Armenia, Comoros, Kyrgyz, Nicaragua, Sweden, Armenia, Comoros, Kyrgyz, Nicaragua, Sweden, Bangladesh, Costa Rica, Lao, Nigeria, Switzerland, Belize, Djibouti, Latvia, Pakistan, Thailand, Bhutan, Dominican, Lebanon, Paraguay, Timor-Leste, Bolivia, Ecuador, Lesotho, Peru, Turkey, Bosnia & Herzegovina Egypt, Lithuania, Romania, Uganda, Botswana, Georgia, Madagascar, Russian Federation, Ukraine, Brazil, Ghana, Malaysia, Rwanda, Uzbekistan, Bulgaria, Guatemala, Maldives, Samoa, Zambia, Cameroon, Guinea, Mauritania, Serbia and Zimbabwe
2	Usage of Financial Resources	1. Number of deposit accounts with commercial banks per 1,000 adults 2. Number of borrowers from commercial banks per 1,000 adults 3. Outstanding loans from commercial banks 4. Number of loan accounts with commercial banks per 1,000 adults 5. Number of depositors with commercial banks per 1,000 adults 6. Number of credit cards per 1,000 adults 7. Number of debit cards per 1,000 adults 8. Outstanding deposits with commercial banks 9. Domestic credit provided by the financial sector (% of GDP) 10. Gross domestic savings (% of GDP)	
3	Technology	1. Secure Internet servers (per 1 million people) 2. Mobile cellular subscriptions (per 100 people) 3. Fixed broadband subscriptions (per 100 people) 4. Individuals using the Internet (% of the population)	
4	Infrastructure	1. Quality of port infrastructure 2. Logistics performance index 3. Public-private partnerships 4. investment in transport (current US$) 5. Machinery and transport equipment (% of value-added in manufacturing) 6. Railways, goods transported (million ton-km)	

3.2. Methodology

Financial Inclusion Index is measured through related variables financial inclusion mentioned in the form of dimensions in this study. Two critical concerns justified for estimating the index are selection criteria of variables and weight assigned to estimate parameters. The assigning of weight may vary from country to country within each dimension due to a lack of data to estimate the Ideal value of the Financial Inclusion Index. The weight is also assigned to each dimension as the best Index estimation is based on extracting information from all variables but keeping the biases at their minimum level.

In estimating the Indexing strategy, the choice of using sub-indices is used to check whether or not the variables within each dimension are correlated. Thus, the first stage is an estimation of principal component analysis computed for each dimension. The second stage is practicing the normalization of values of each dimension and, finally, the estimation of an overall index based on given dimensions.

After the estimation of dimensions from the Principal Component Analysis Approach, next is using the estimation method for the normalization of values is written as:

$$D_i = \frac{Actual\ Value_i - Minimum\ Value_i}{Maximum\ Value_i - Minimum\ Value_i} \quad (1)$$

The above formula creates the range (0< D_i < 1) for dimensional Index. The formula for estimation of the overall index is written as:

$$FII = 1 - \frac{\sqrt{(1-D_1)^2+(1-D_2)^2+(1-D_3)^2+(1-D_4)^2}}{\sqrt{n}} \quad (2)$$

The two-point dimensions' range is defined in value 0 (worst) to 1 (best). The above formula computes the inverse normalized value for the estimation of the overall index of financial inclusion.

3.2.1. First Stage: Estimation of Principal Component Analysis for Dimensions

The step is an estimation of dimension for obtaining the new four endogenous variables associated with each dimension of the index, and parameters of the equation are under noted as:

$$D_i^A = \theta_1 ATM_{km2i} + \theta_2 Branch_{km2i} + \theta_3 ATM_{Popi} + \theta_4 Branch_{Popi} + \in_i \quad (3)$$

$$D_i^U = \gamma_1 Deposit\ Account_i + \gamma_2 Borrowers_i + \gamma_3 Outstanding\ Loan_i + \gamma_4 Loan\ Account_i + \gamma_5 Depositors_i + \gamma_6 Credit\ Cards_i + \gamma_7 Debit\ Cards_i + \gamma_8 Outstanding\ Deposits_i + \gamma_9 Domestic\ Credit_i + \gamma_{10} Gross\ Saving_i + \upsilon_i \quad (4)$$

$$D_i^T = \eta_1 Server_i + \eta_2 Mobile\ Cellular_i + \eta_3 Broadband_i + \eta_4 Internet\ Users_i + \Psi_i \quad (5)$$

$$D_i^I = \lambda_1 Quality_i + \lambda_2 Logistics_i + \lambda_3 Air_i + \lambda_4 Inv_i + \lambda_5 Transport_i + \lambda_5 Railway_i + \Omega_i \quad (6)$$

Let $M_Q(Q * Q)$ refers to the correlation matrix for indicators associated with each dimension. The symbol $\varphi(k = 1 \ldots \ldots . . q)$ taken as K^{th} eigenvalue script K refers to the number of Principal Component, and the number of indicators (Sub-indices) is the eigenvalue of the correlation matrix. On that basis of the assumption $\varphi_1 > \varphi_2 > \varphi_3 \ldots \ldots \ldots \ldots . \varphi_q$ and refer as $R_N = (N = 1 \ldots \ldots . q)$ the q^{th} Principal Component. The weighted average of an estimator of a single dimension is understated as:

$$D_i^u = \frac{\sum_{K,n=1}^{Q} \varphi_k^U R_{ni}^U}{\sum_{K,n=1}^{Q} \varphi_k^U} \tag{7}$$

$$D_i^A = \frac{\sum_{K,n=1}^{Q} \varphi_k^A R_{ni}^A}{\sum_{K,n=1}^{Q} \varphi_k^A} \tag{8}$$

$$D_i^T = \frac{\sum_{K,n=1}^{Q} \varphi_k^T R_{ni}^T}{\sum_{K,n=1}^{Q} \varphi_k^T} \tag{9}$$

$$D_i^I = \frac{\sum_{K,n=1}^{Q} \varphi_k^I R_{ni}^I}{\sum_{K,n=1}^{Q} \varphi_k^I} \tag{10}$$

Where $R_{ni} = \nu\varphi_k$ $\varphi_k$denote as a variance of n^{th} Principal Component (weight), ν is the indicators matrix. The Component's weight decreases are due to thoroughly explaining the significant variation in the first Principal Component in the q dimensional dataset of correlated variables. The first Principal Components presents extensive information from initial data. The dataset is preparing a set of dimensions to gains the first Principal Components.

3.2.2. Second Stage: Euclidian Distance formula for estimation of Financial Inclusion Index

In this study, four dimensions are estimated for developing the overall index. The formula for normalization of values is written as:

$$D_i^{[A,U,T,I]} = \frac{Actual_{[A,U,T,I]} - Min_{[A,U,T,I]}}{Max_{[A,U,T,I]} - Min_{[A,U,T,I]}} \tag{11}$$

ere "i" denotes a country while ($D_i^A, D_i^U, D_i^T$and D_i^I) refers to access, usage of financial services, technology, and infrastructure. Therefore, the Normalized Inverse Euclidian Distance is estimated as:

$$FII = 1 - \frac{\sqrt{(1-D_i^A)^2+(1-D_i^U)^2+(1-D_i^T)^2+(1-D_i^I)^2}}{\sqrt{n}} \tag{12}$$

Financial Inclusion Index is divided into three categories as under:

1. Range 0 - 0.3 value of index represent Low Financial Inclusion (LFI)
2. Range 0.4 – 0.7 value of index represent Medium Financial Inclusion (MFI)
3. Range 0.7 – 1 importance of index represent High Financial Inclusion (HFI)

4. Research Analysis

In this section, the research analysis is divided into three categories: countries with low financial inclusion, countries that progress towards medium-term financial inclusion, and the last category is countries progressing towards High financial inclusion. Table 2 shows the trend from 2010 to 2018 in which countries according to the range of financial inclusion index are categorized.

The information extracted from the financial inclusion index from 2010 to 2018 is that Kazakhstan is the first country to achieve medium financial inclusion while the rest of the countries in the low financial inclusion category for the year 2010. The implementation of this plan is not progressive, and the country ended up with low financial inclusion in 2018. In the following year, Bosnia & Herzegovina and Honduras are placed in medium inclusion in 2014 and upcoming years. The progress is the same as Honduras National financial inclusion strategy because the farmer group suffers the most from financial exclusion. Further discussion regarding the reason for financial inclusion is categorized as the progress of achieving financial inclusion.

4.1. Countries having Low Financial Inclusion

The poor condition in financial inclusion in the **Belize** economy is due to the lack of reliable information, non-interpretable ATMs, and point of sale networks. The Central Bank of Belize is trying to construct disaggregated data to excel more opportunities (A^2ii, 2020). The higher inclusion gap in **Chile** is the absence of appropriate financial tools to use in business by entrepreneurship. The opening of business accounts in Chile required higher fees and long-listed documents, which created a barrier to access to finance for entrepreneurs. People like to use their savings informally because of a lack of financial literacy (Punatar, 2019). The financial inclusion in **Lithuania** in its initial phase, despite the number of Fintech Companies, established their business over a while. Currently, a regulatory framework is introduced regarding these Fintech Companies to progress to the higher level of financial inclusion (OECD, 2019).

Malaysia has its own success story to achieve the path for financial inclusion. The master plan (2001-2010) established the performance of financial inclusion and was successfully implemented in 2010-2015 with prosperous growth in financial inclusion. However, the population of this country includes a higher proportion of foreign workers who are excluded from financial inclusion due to the status of non-residents. These workers sent money to their homes instead of using savings accounts. Mauritius is good at achieving financial inclusion, but the financial consistency of using financial services is relatively low. 11% of the population have low levels of financial knowledge, while 21 % have minimal ability to keep accounts active. The worst financial inclusion scenario is 52 % or fails to maintain balances in their account or barely keep it below 5% of their budget. The reasons for lower levels of financial inclusion are lack of financial literacy, social exclusion, and language barriers (Luna-Martinez, 2017). The central bank of **Moldova** arranges a financial education program to promote the significance of financial inclusion (Molosag, 2016).

The Community based Microcredit Program in Nigeria helps boost the financial access to poor people of society as 46.3 percent of the population is financially excluded. The Central Bank of **Nigeria** required systematic based actions to promote financial inclusion. Romania faces many economic challenges, and financial inclusion is one of its significant challenges. 35.7 % of the people are reaching the poverty level, and 40% of poor people have no financial account in Romania. Furthermore, People did not prefer the users of financial services through electronic modes of payment. The firms are less likely to take bank loans as 11.8% of funds avail of loans from the banking sector (Kama & Adigun, 2013). In **Serbia,** the poorest 40% face low financial, educational attainment. Therefore, the use of digital services is relatively more minor as compared to other countries. Furthermore, the people use their utility bills through Serbian Post (Golicin & Nenadović, 2015).

The advent of fintech companies in **Sweden** forces financial institutions to progress towards financial institutions in the economy. The financial institutions recognize the significance of fintech companies and acknowledge their weakness in their system with the help of fintech companies (Arun & Kamath, 2015). In **Switzerland**, there are fewer proportions of the employed domestic labor force working in the banking sector. The financial sector is a 25% market share of offshore private banking (Swisscontact, 2020). The financial inclusion statistics in **Uganda** represent that 43% have mobile registered money accounts, 11% have formal bank accounts, and 7% of NBFI Accounts. In 2017, 6% of adults had mobile money accounts. The low financial inclusion is due to a lack of savings and more borrowing than other Regions. The adults have 60.7% registered accounts; the challenges faced by Ukraine for developments of Fintech are the absence of a regulatory framework for Fintech Development, lack of long-term investment, issue in electronic payments, and identifications of residents. The policies are prepared to enhance the preference of natives. Financial Constraints and high-cost fees are significant challenges for financial inclusion for **Zimbabwe**. The bank needs coordination with cell phone operators to promote financial inclusion as the preparation of framework and structure of high financial products (Laurine & Patrick, 2012).

4.2. Countries progress towards Medium Financial Inclusion

Approximately 85% of the population lies under unbanked areas in **Afghanistan,** while 50% live under the poverty line (Ghafori, 2019). The **Albanian** bank contributes 95% of GDP, of which 85% are Foreign Ownership based banks despite advance rankings after saving rate and credit growth is relatively low. The reasons for the Credit Gap are high informality, low income, and institutional constraints (including recovering collateral and enforcing contracts) (Mexhuani & Ribaj, 2018). The strategy to promote financial inclusion in **Algeria** has focused on the development of the Microfinance Sector. For this purpose, Microfinance Lending Policy has been introduced for financial companies, low-income customers for Retail Banks, and cooperative financial networks (Douma et al., 2019). In **Angola**, financial literacy is increasing in adults through various campaigns with the help of financial institutions, including the launch of new products and services and their benefits of usage. In 2012, only 20% of the population had formal bank accounts, which gradually enhanced by improving customer service quality (Deloitte, 2013).

In **Armenia,** Financial Capability Assessment Project (FCAP) is desired to bolster the financial stability program and National Strategy of Financial Education (NSFE) by providing the roadmap of actions including threshold, strategies, and priority to evaluate the effectiveness of strategy consistently (Nurbekyan & Hovanessian, 2018). Women and adults play a significant role in expanding financial inclusion in Bhutan because of their willingness to adopt the new technology more than males. Bhutan National Bank Limited had 25 banking branches to serve the rural areas for loan purposes. This scheme provides loans without any Collateral requirement for poor people to overcome their financial issues, but it will not be successful due to the exclusion of extremely poor people (Niang et al., 2013)

. The **Bolivian** economy has direct access to credit policy is sufficient to promote financial inclusion. The transaction cost in saving products is relatively low, while lending issues still face problems due to asymmetric information (Roa et al., 2019). The fact reported that 40%

of adults had no formal accounts in **Bosnia and Herzegovina**. In 2014, this country contained 963 Bank branches, reflecting branch banking as the main channel for financial inclusion. The use of internet banking is not adequate as the robust banking sector covering 87% of total assets represents the strong financial system (IMF, 2015). The **Botswana** Government used the Grameen Bank model of Bangladesh to reduce its poverty level, which indirectly enhanced the financial inclusion of this economy. As a sector-wise distribution, this economy has a lack of diversification which makes the condition of this state more vulnerable regarding their prominent sector is the Mining Sector (Madigele, & Mogomotsi, 2016). **Brazil** achieved the progress of financial inclusion through the implementation of the regulatory framework. Prudent measures to stabilize the banking sector enable more than 150,000 banking agents with regulatory environments (GPFI, 2011). The reason behind financial inclusion progress in **Bulgaria** is focused on unparalleled levels of financial literacy. Improvement in financial literacy can happen through financial literacy surveys, financial education, dispute resolution, professional competence, disclosure of information, and consumer awareness (Filipova-**Rivers**, 2016). Financial inclusion barriers in **Central Africa** are family ownership, trust in financial institutions, documentation process for account opening, distant location of financial institutions, and higher cost of account opening (Muhoza & Muriu, 2018). The financial inclusion era in **Chad** started in 2009. The banking sector in Chad has a significant improvement in capital variability and focus on bank risks (Djimoudjiel, 2018). The Central Bank of **Costa Rica** estimates around 90% of the population using internet banking executed a true contactless card system. The SME sector does not play a significant role in financial inclusion in the presence of frequent insurance plans and saving schemes (Sunel, 2020). The national financial inclusion strategy was established to increase access to financial goals and provide credit through electronic payment in **Dominica**. For this purpose, the Dominican Republic payment and settlement system was introduced in 2009 for poor people as the access ratio has reached 40% of the population (Villarreal, 2017).

The conditional cash transfer policy in **Ecuador** is contributing to the promotion of financial inclusion in rural areas. The option card allows the transfer of funds through an ATM without any cost. 75% of the beneficiaries own a card or are provided with a card to facilitate electronic payment for poor people (Samaniego & Tejerina, 2010). Financial knowledge of the **Georgian** population is at entry-level, and the decision-making process of intelligent financial behavior includes the use of financial products, Savings, and expenditure planning. Financial products used in general transactions are bank loans, small shop loans, current accounts, and installments, considered as the financial preferences which people related to their finances. Nearly 41% of the population does not have any financial goals (Babych et al., 2018). The wide variety of financial access has revolutionized the choice and pattern of consumption and saving. The informal financial intermediaries play their role in increasing financial access to poor people living in rural and urban areas under significant branch network growth in **Ghana** (Belnye, 2011).

In **Guatemala,** 56% of adults did not have an account in 2017, 27% of adults do their digital financial transactions, and 16% only receive payments. The National Financial Inclusion Strategy focuses on integrating international practices in the financial system (Pereda, 2019). According to the **Honduras** National financial inclusion strategy, the farmer group suffers the most from financial exclusion. The unpredictable nature of their income is also a barrier to financial inclusion. After reviving from the effects of the financial crisis in 2008, the **Kazakhstan** economy focused on promoting financial inclusion. For this purpose, the Government introduces the "Concept for the financial sector development of the Republic of Kazakhstan until 2030 (2030 concept)". The level of financial inclusion requires continuous progress through promoting financial education programs at all state levels. The broadcasting media is the best source of financial awareness (Kapparov, 2018). The financial inclusion in **Kenya** is showing its outstanding performance in digital innovation. The non-bank financial institution is dominant to promote financial inclusion through MPesa mobile money system, increasing the financial system's expansion. Like other countries, Kyrgyz also focuses on financial literacy to develop financial inclusion (GPFI, 2011). The Central Bank of **Kyrgyz** introduced prudential measures to supervise the banking irregularities, which has resulted from the mobilization of saving and structured financial markets. Still, the vulnerabilities, political instability, poor institutions, and higher poverty rates overwhelmed the progress towards financial inclusion (Hasanova, 2018). Financial literacy is a vital link to promote financial inclusion as a person having financial knowledge tends to save more and utilize their funds in the formal institutions in **Lao**. On the other hand, the rural people mostly keep informally because of poor knowledge and poor access to resources (Morgan & Long, 2020).

The financial structure of **Latvia** is limited just enough to fulfill local demand rather than global demand. The banking sector has a 90% share of the financial system. The strong regulatory environment is monitored through the Consumer Rights and Protection Centre (OECD, 2016). Financial intermediation in **Lebanon** is at its peak considered an offshore center. The progress of financial inclusion has not seemed satisfied in the decision-making process for the design framework of the National Financial Inclusion Strategy due to political instability (Clark & Iradian, 2016). Mobile money services are the major project for financial inclusion in **Lesotho**. Policymakers focus on the prosperous growth of mobile money in the business environment.

The economy of **Madagascar** has a financial mechanism of mobile money and a microcredit system to promote financial inclusion. The provisions of the best mobile network are Telma, Orange, and Airtel operating in the country. Three payment models are mobile banking, mobile money transfer, and mobile payments in the country, while microcredit offers insurance, deposit, and loans (Rakoto, 2018). The preference of household credit for investment in education implies denser integration, higher living standards, and food security in **Mauritania** (Amendola et al., 2016). The bank in **Montenegro** is an international bank subsidiary, and prudential measures are weakening. The Financial Sector Assessment Program (FSAP) has been established to stabilize the financial sector in Montenegro (Jaeger et al., 2016). The National Financial Inclusion Strategy in **Myanmar** has an objective in poverty reduction from 26% to 16%. Therefore, eight development tasks are initiated, including credit saving, cooperative tasks, and credit enterprises. The financial inclusion in Myanmar faces challenges of the higher informal sector, restricted to finance, limited infrastructure, financial constraints, poor regulations, and other economic challenges such as the traditional monetary system, weak institutions, and absence of rural-based models (UNDP, 2016). The financial structure in **Namibia** is well developed compared to other South African Countries. 60% of the population had formal bank accounts. However, the access to finance at the enterprise level is limited as compared to individual households. The reason for lower access to finance is the lack of collateral for small and medium enterprises (Popovic, 2016). The assessment of financial structure in **Nicaragua** has remained low. In 2010, many microfinance institutions are failed due to bankruptcy, and after that period, the initiatives were taken for microfinancing programs in rural areas. Approximately 73% of rural farmers have been granted loans for the expansion of their agriculture business.

Currently, **Pakistan** has initiated an action plan for the prosperous growth of financial inclusion. The significance of financial inclusion is concerned due to the positive relationship between financial exclusion and poverty level. Pakistan National Financial Inclusion Strategy was developed in 2015 to promote financial inclusion. The slow progress is the shrinking of the private sector, poor business environment, gender inequality, and approximately 75 informal economies in 2009, which will reduce to 30 % in 2019. The unbanked population has declined by 0.3 million people due to the implementation of the inclusion strategy, but the gap is almost double between the rural and urban sectors (Ali et al., 2012). The banking sector is concerned about the growth of the MSME sector to invest in the agriculture sector. Like other countries, banks are a significant contribution to financial inclusion in **Russia**. However, the low-quality financial product did not satisfy the demands of people. Long-term saving is required for digital financial innovation in the economy (Gorshkov, 2017). The financial sector in **Samoa** is based on 30 licensed financial enterprises, and the insurance sector is still underdeveloped. The credit supply has reported a perpetual growth of 11% per year. The several factors are the absence of the financial sector. The financial exclusion is 65% of the adults (ADB, 2019). The financial structure of **Southern Sudan** has 28 banks and ten microfinance institutions. The financial sector is well developed for the significant growth of financial inclusion in the economy. Still, this country requires NFIS to accelerate financial inclusion for the vulnerable sector of society (Bank of South Sudan, 2013).

The financial inclusion policy of **Sudan** focuses on youth financial inclusion policy reforms to create employment opportunities for its youth. Youth has suffered from a lack of access to necessities due to internal and external conflicts (Jamie, 2012). In **Thailand,** the economy started to achieve sustainable growth in 2019 (Ariyapruchya et al., 2019). The new technologies revolutionize the financial services, which help to provide more coverage of the population. In **Uzbekistan**, 88% population is Muslims, and there is no existence of the Islamic Banking System as people avoid using conventional products instead of Islamic Products. The common barriers of financial inclusion are religious reasons, lack of trust, expensive financial products, distant locations, single accounts represent all households, and less frequent mobile money usage. Religious issues are significant because of strong cultural beliefs (Ahunov, 2018).

4.3. Countries progress towards High Financial Inclusion

In **Argentina**, the financial system is required with Institutional Diversity, greater access, reduction of unitary cost, and accountability in financial institutions (**Repetto & Denes**, 2010). Financial inclusion is a concerning issue for **Bangladesh** through achieving its progress in financial inclusion with the success story of Grameen Bank to serve the poor sector. The coverage of financial access to a more significant proportion is the objective of financial inclusion. In contrast, the common financial barriers are high fee costs, accessibility to the formal market, and lack of financial literacy (Akter, 2016). Mobile money banking in **Cameroon** is the result of progress in financial inclusion. Financial resilience is essential for sustainable financial development. The reduction in the cost of mobile can create significant improvement on the mobile money banking influence on the choice of financial resilience (Mafossa, 2019). The financial development of **China** is the renaissance of the financial industry through significant progress in microenterprises. The advanced development of digital innovation and integration of financial technology revolutionizes society with new reforms (Yang & Zhang, 2020). In Colombia, the Financial Inclusion Inter Sector Commission **Colombia** is the reason for achieving significant progress. The Colombian Congress has introduced Law 1735 regarding financial inclusion regulation and its public policies. The individual preferences for internet banking are increasing due to the provision of greater access for mobile money-driven financial inclusion (Thoene & Turriago-Hoyos, 2017). The economic condition of **Comoros** is represented as a politically unstable country that creates many economic challenges in the country. The poor supervision of the banking sector is the barrier to financial inclusion. The policy objective is to promote financial inclusion by geographically supporting youth and women entrepreneurship (Dabysing, 2019). In **Djibouti**, the economy has a high potential for entrepreneurship because of demographic transition, as the significant population is less than 35 years old. For this purpose, policymakers should focus on entrepreneurship in Djibouti (Vakil, 2018). The remarkable performance of **Egypt** in the financial system is represented by the provision of 0.13 million mobile money agents and 39 banks. 56.3% of adults use mobile banking in this country. All banks are offering internet banking access in this country. The Government initiated debit and credit cards technology and automated clearinghouse for fast and reliable transfer of electronic payments to promote financial inclusion. Furthermore, the Central Bank of Egypt introduces several customers due to diligence measures to prevent anti-money laundering (Nasr et al., 2018). The economic challenges in **Guinea** are the existence of structural gaps for infrastructure development, weak financial structure, and limited private sector. The progress in financial inclusion is the constant development of the microfinance sector, but the monitoring and evaluation for their sector are entirely negligible. The significance of the microfinance sector portrays poverty reduction and more gender equality as 22% of women are members of Parliament (ADF, 2017).

The **Indian** economy lacks access to vulnerable groups of society as a barrier to economic progress. Approximately 35% of adults have formal accounts in India. The fact that 2% credit card holders and 18% debit cardholders. The standard financial products are No-Frill accounts, Kisan Credit Cards, general-purpose credit cards, and saving accounts with an overdraft facility. The Indian economy put more focus on the financial service to ease the access of the services through low cost and efficient techniques. The successful concept "Made in India" is based on self-made manufacturing goods instead of imported goods (Garg & Agarwal, 2014). There is a lack of regulatory framework in **Indonesia** to overcome the barrier of financial inclusion in Indonesia. The Indonesian economy is considered the best Global leader in the microfinance sector, but without regulation, this economy is facing a credit crunch (Rosengard & Prasetyantoko, 2011). The business environment in India is progressing and focuses on domestic self-reliance products rather than imported products. Fintech revolutionizes the **Maldives** by breaking the blockage of access to finance in geographically dispersed countries. The countrywide telecommunication technology and high penetrations transition from cash in hand to electronic payments. There are remarkable changes seen in the mobile wallet by increasing their volume of transactions through RTGS (WBG, 2019).

The reason behind the success of **Paraguay** in achieving financial inclusion is progress in mobile financial services. In 2008, E-wallet was introduced as a source of electronic money transfer to achieve maximum coverage of financial services users. Paraguay earns third-best in the regulatory framework and 7th best in the supervision of electronic payments. Telecommunication companies in the banking sector provide 11,250 electronic payment entries through 1400 countrywide ATMs (Espinoza, April 16). The Ministry of Development and social inclusion (MIDIS) introduced social programs to promote social inclusion in **Peru**. Currently, government transfers are distributed through electronic informal payment accounts, formal accounts rather than cash in hand in Peru (Gertler et al., 2016). 20.5% of the population has formal bank accounts. **Rwanda** has the focus to achieve 90% of financial inclusion in the country. The fact represented that 26% of formal accounts and 89% of financial inclusion were acquired in 2016. The Government should support the microfinance sector and provide quality banking services for extensive coverage of the population (Bigirimana, & Hongyi, 2018). The reforming of the financial sector started in 2008. **Seychelles** Electronic Fund Transfer (SEFT) has an efficient system of electronic fund transfer from which the Government has initiated the electronic payment gateway. The challenges of financial inclusion are the poor structure of SMEs, insufficient local market, lack of technical entrepreneurship skills, and lack of financial capability. Consumer protection is the supporting instrument of financial inclusion policies. **Solomon Island** has coverage 50% of the rural area to achieve the objective of financial inclusion. The critical challenges of financial inclusion are lack of technology-based infrastructure, language barriers, agent network liquidity constraints, and high coverage access has covered 80% of the population have access to the alternate delivery channel. The **South African** economy created a financial sector charter to promote financial inclusion. The charter targets to fulfill specific financial access targets in the banking sector. The Government focuses more on financial inclusion beyond the Financial Charter (GPFI, 2011). **Timor-Leste** had taken initiatives by presenting a report on financial inclusion in 2016. The bank has played a significant role in the expansion of access points in financial services. In 2009, 45 financial access points raised approximately 164 access points, while ATM access points reached from 16 to 64 access points (Sousa, 2017). Financial inclusion in **Turkey** has achieved its significant status due to well-developed small and medium enterprises. Financial inclusion challenges are supervision of regulatory framework, ineffective measures, favorable business environment, and financial capability. The microfinance sector helps to create employment opportunities and build the financial strength of the economy. However, the growth of the SME sector is at stake due to credit constraints. Another program, the "Angel Investment Scheme," is initiated for technical and financial assistance to support the SME sector (Terzi, 2015). The SME sector plays a significant role in boosting the SME Sector. The financial inclusion process in **Zambia** is still selecting its way to achieve prosperous growth (Chileshe, 2019). There are the following strategies given priority to Zambia Financial System.

i. Development of efficient Insurance Sector
ii. Design a framework and implementation an action plan regarding the rural framework
iii. Ensuring Regulatory Framework.
iv. Enhancing Macroeconomic Stability

Table 2: Trends of Financial Inclusion in Developing Countries

The measure of Financial Inclusion in years	Countries having Low Financial Inclusion	Countries progress towards Medium Financial Inclusion	Countries progress towards High Financial Inclusion
2010	Afghanistan, Honduras, Mauritius, Seychelles, Albania, Chad, India, Moldova, Solomon Islands, Algeria, China, Indonesia, Montenegro, Angola, Chile, Myanmar, South Sudan, Argentina, Colombia, Kenya, Namibia, Sudan, Armenia, Comoros, Kyrgyz, Nicaragua, Sweden, Bangladesh, Costa Rica, Lao, Nigeria, Switzerland, Belize, Djibouti, Latvia, Pakistan, Thailand, Bhutan, Dominican, Lebanon, Paraguay, Timor-Leste, Bolivia, Ecuador, Lesotho, Peru, Turkey, Bosnia & Herzegovina Egypt, Lithuania, Romania, Uganda, Botswana, Georgia, Madagascar, Russian Federation, Ukraine, Brazil, Ghana, Malaysia, Rwanda, Uzbekistan, Bulgaria, Guatemala, Maldives, Samoa, Zambia, Cameroon, Guinea, Mauritania, Serbia & Zimbabwe	Kazakhstan	-
2011	Afghanistan, Mauritius, Seychelles, Albania, Chad, India, Moldova, Solomon Islands, Algeria, China, Indonesia, Montenegro, Angola, Chile, Myanmar, South Sudan, Argentina, Colombia, Kenya, Namibia, Sudan, Armenia, Comoros, Kyrgyz, Nicaragua, Sweden, Bangladesh, Costa Rica, Lao, Nigeria, Switzerland, Belize, Djibouti, Latvia, Pakistan, Thailand, Bhutan, Dominican, Lebanon, Paraguay, Timor-Leste, Bolivia, Ecuador, Lesotho, Peru, Turkey, Bosnia & Herzegovina Egypt, Lithuania, Romania, Uganda, Botswana, Georgia, Madagascar, Russian Federation, Ukraine, Brazil, Ghana, Rwanda, Uzbekistan, Bulgaria, Guatemala, Maldives, Samoa, Zambia, Cameroon, Guinea, Mauritania, Serbia	Honduras, Kazakhstan, and Malaysia	-

	& Zimbabwe		
2012	Afghanistan, Argentina, Bangladesh, Belize, Bhutan, Bolivia, Botswana, Bulgaria, Cameroon, Chad, China, Chile, Djibouti, Lebanon, Paraguay, Egypt, Georgia, Ghana, Guinea, India, Indonesia, Kenya, Lao, Lesotho, Lithuania, Maldives, Madagascar, Mauritania, Myanmar, Namibia, Nicaragua, Samoa, Serbia, Solomon Islands, South Sudan, Sweden, Switzerland, Turkey, Uganda, Uzbekistan Brazil, Colombia, Comoros, Costa Rica, Dominican, Ecuador, Guatemala, Kyrgyz, Latvia, Lebanon, Montenegro, Nigeria, Pakistan, Peru, Romania, Russian Federation, Rwanda, Seychelles, Ukraine, Thailand, Timor-Leste, and Zambia,	Albania, Algeria, Angola, Armenia, Bosnia & Herzegovina, Honduras, Kazakhstan, Malaysia, Mauritius, Moldova, Sudan, and Zimbabwe	-
2013	Afghanistan, Angola, Bangladesh, Belize, Bhutan, Bulgaria, Cameroon, Chad, China, Chile, Djibouti, Egypt, Georgia, Ghana, Guinea, India, Indonesia, Kenya, Lao, Lesotho, Lithuania, Madagascar, Maldives, Mauritania, Myanmar, Namibia, Nicaragua, Paraguay, Samoa, Serbia, Solomon Islands, South Africa, South Sudan, Sudan, Sweden, Switzerland, Turkey, Uganda, Uzbekistan, and Zambia	Albania, Algeria, Argentina, Armenia, Bolivia, Botswana, Brazil, Colombia, Comoros, Costa Rica, Dominican, Ecuador, Guatemala, Honduras, Kazakhstan, Kyrgyz Rep., Latvia, Lebanon, Malaysia, Mauritius, Moldova, Montenegro, Nigeria, Pakistan, Peru, Romania, Russian Federation, Rwanda, Seychelles, Thailand, Timor-Leste, Ukraine, Zimbabwe	Bosnia & Herzegovina

2014	Afghanistan, Belize, Bolivia, Botswana, Cameroon, Chad, China, Djibouti, Egypt, Georgia, Ghana, Guinea, Lebanon, Lesotho, Lithuania, Maldives, Mauritania, Mauritius, Myanmar, Paraguay, Samoa, Serbia, Sudan, Sweden, Switzerland, and Uganda	Albania, Algeria, Angola, Argentina, Armenia, Bangladesh, Bhutan, Brazil, Bulgaria, Chile, Colombia, Comoros, Costa Rica, Dominican Rep., Ecuador, Guatemala, Honduras, India Indonesia, Kazakhstan, Kenya, Kyrgyz Rep., Lao, Latvia, Madagascar, Malaysia, Moldova, Montenegro, Namibia, Nicaragua, Nigeria, Pakistan, Peru, Romania, Russian Federation, Rwanda, Seychelles, Solomon Islands, South Sudan, Thailand, Timor-Leste, Turkey, Ukraine, Uzbekistan, Zambia, and Zimbabwe	Bosnia & Herzegovina
2015	Afghanistan, Belize, Bhutan, Chad, China, Egypt, Georgia, Ghana, Guinea, Indonesia, Kazakhstan, Lebanon, Lesotho, Lithuania, Malaysia, Maldives, Moldova, Nicaragua, Paraguay, Serbia, Sudan, Switzerland, Turkey, Uganda, Uzbekistan, and Zimbabwe	Algeria, Angola, Argentina, Bangladesh, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Cameroon, Chile, Colombia, Costa Rica, Djibouti, Dominican Rep., Ecuador, Guatemala, Honduras, India, Kenya, Kyrgyz Rep., Lao, Latvia, Madagascar, Mauritania, Mauritius, Montenegro, Myanmar, Namibia, Nigeria, Peru, Romania, Russian Federation, Samoa, Solomon Islands, South Sudan, Sweden, Thailand, Ukraine, and Zambia	Albania, Armenia, Comoros, Pakistan, Rwanda, Seychelles, South Africa, and Timor-Leste
2016	Belize, Botswana, Bulgaria, Guinea, Lebanon, Lesotho, Lithuania, Malaysia, Moldova, Paraguay, Serbia, Sudan, Uganda, Uzbekistan, and Zimbabwe	Afghanistan, Algeria, Angola, Argentina, Bhutan, Bolivia, Bosnia and Herzegovina, Brazil, Chad, China, Chile, Colombia, Costa Rica, Djibouti, Dominican Rep., Ecuador, Egypt, Georgia, Ghana, Guatemala, Honduras, India, Indonesia, Kazakhstan, Kenya, Kyrgyz Rep., Lao, Latvia, Madagascar, Maldives, Mauritania, Mauritius, Montenegro, Nicaragua, Nigeria, Pakistan, Romania, Russian Federation, Samoa, South Sudan, Sweden, Switzerland, Thailand, Turkey, Ukraine, and Zambia	Albania, Armenia, Bangladesh, Cameroon, Comoros, Myanmar, Namibia, Peru, Rwanda, Seychelles, Solomon Islands, South Africa, and Timor-Leste

2017	Belize, Costa Rica, Lebanon, Malaysia, Moldova, Nigeria, Serbia, Sweden, Uganda, and Zimbabwe	Afghanistan, Albania, Algeria, Angola, Armenia, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Chad, China, Chile, Dominican Rep., Ecuador, Georgia, Ghana, Guatemala, Honduras, Indonesia, Kazakhstan, Kenya, Kyrgyz Rep., Lao, Latvia, Lesotho, Lithuania, Madagascar, Mauritania, Mauritius, Montenegro, Namibia, Paraguay, Romania, Russian Federation, Samoa, Seychelles, South Sudan, Sudan, Switzerland, Thailand, Ukraine, and Uzbekistan	Argentina, Bangladesh, Cameroon, Colombia, Comoros, Djibouti, Egypt, Guinea, India, Maldives, Myanmar, Nicaragua, Pakistan, Peru, Rwanda, Solomon Islands, South Africa, Timor-Leste, Turkey, and Zambia
2018	Albania, Belize, Chile, Kazakhstan, Lithuania, Malaysia, Mauritius, Moldova, Nigeria, Romania, Serbia, Sweden, Switzerland, Uganda, Ukraine, and Zimbabwe	Afghanistan, Algeria, Angola, Armenia, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Chad, Costa Rica, Dominican Rep., Ecuador, Georgia, Ghana, Guatemala, Honduras, Kenya, Kyrgyz Rep., Lao, Latvia, Lebanon, Lesotho, Madagascar, Mauritania, Montenegro, Myanmar, Namibia, Nicaragua, Pakistan, Russian Federation, Samoa, South Africa, South Sudan, Sudan, Thailand, and Uzbekistan	Argentina, Bangladesh, Cameroon, China, Colombia, Comoros, Djibouti, Egypt, Guinea, India, Indonesia, Maldives, Paraguay, Peru, Rwanda, Seychelles, Solomon Islands, Timor-Leste, Turkey, and Zambia

v.

4.4. Analysis

The information extracted from the development of financial inclusion in respective developing countries is that the **National Financial Inclusion Strategy** is the design framework to promote financial inclusion for countries. However, the objective of Financial Inclusion varies from country to country. For example, Malaysia has established the Master Plan 2001-2010 for prosperous growth in financial inclusion, and Kazakhstan proposed "Concept for the financial sector development of the Republic of Kazakhstan until 2030 (2030 concept)" to enhance financial inclusion. The components of financial inclusion strategy are as under:

- The implementation of NFIS requires **Policies and Plans** through which the people get higher access to financial services such as financial awareness campaigns in Moldova, microcredit programs in Nigeria, and the Grameen Bank Model of Bangladesh, etc. these plans are part of financial inclusion.

- **Digital innovation** is essential for financial inclusion. The basic step for digital innovation is using communication technology such as the provision of mobile banking, internet banking, and electronic payment transfer system and card system. The countries, including Ukraine, Serbia, are the lack of technology with electronic payment transfers. The Mobile Banking technologies such as MPesa (Kenya), Easypaisa (Pakistan), Telma & Orange Airtel (Madagascar) are part of digital innovation introduced in developing economies. The economic opportunities and robust business environment for **Fintech Companies** create a significant impact on financial inclusion. Lithuania has established its initial phase in its financial system.

- A strong **Regulatory Framework** is a key success to achieve the highest level of financial inclusion. Countries having higher financial inclusion has strong regulatory framework including Judiciary regulations, property rights, consumer protection, and legal issues. The strong regulatory environment is monitor through Consumer Rights and Protection Centre in Latvia.

- The **expansion of financial access** points is the basic objective of financial inclusion. Belize is doing struggle with the expansion of access points. Approximately 85% of the population in Afghanistan had lived in unbanked areas, while 50% population was in poverty. The core objective of the strategy of Guatemala country is the expansion of access points and financial products. Policymakers in Mauritania focus on significant growth in the expansion of financial structure in unbanked areas. The new technologies in Thailand have revolutionized the financial services to help provide access to more coverage of the population. The access points of sale terminals are rising while ATM users are slightly declining in 2013-2017 in Ukraine. The proportion of using cashless transactions has been increasing per year. Solomon Island has coverage of 50% of the rural area to achieve the objective of financial inclusion.

- The significance of **Small and Medium Enterprises (SME)** leads to promoting financial inclusion. Some countries, including Pakistan, Costa Rica, Algeria, Guinea, and Turkey, focus on developing the SME sector's financial inclusion policy and strategy.

4.4.1. Barriers of Financial Inclusion

On the basis of information extracted from research analysis and different resources, the barriers of financial inclusion are as under:

- The **low employment opportunities for domestic employees** are the indirect barrier to financial inclusion. Malaysia and Switzerland are the countries where foreign workers in greater proportionate. This barrier is observed in those countries where the foreign workforce is more than domestic laborers as the domestic laborers sent their money to homes instead of opening saving accounts.

- The major constraint of financial inclusion is the **lack of financial knowledge**. The achievement of financial literacy is the key objective of financial inclusion. The countries, including Mauritius, Moldova, Georgia, are still behind the race of financial inclusion.

- The **diversification in financial products** has enhanced the people's choice to stay in the process of financial inclusion. In Sweden, limited financial products are the reason for slow financial inclusion. The **social and cultural barriers** in Samoa, Uzbekistan, and other Muslim countries are barriers to financial inclusion because of the non-availability of financial inclusion of Islamic financial products.

- The barrier to financial inclusion is **financial constraints**. The economy of Indonesia had higher growth and a strong financial structure, but the constraints in access to credit dampen the positive aspects of financial inclusion.

- **Higher cost** in financial products is another barrier to financial inclusion. The higher cost and fee charges are the major restraint for people to open an account and keep people save informally. Chile, Central Africa, and Zimbabwe had charged higher fees for opening an account.

- Gender inequality also exists as a sign of financial exclusion. The female has low financial opportunities as compared to the male. For that purpose, some countries, including Bhutan, are adopting the strategy to **enhance financial inclusion in females and youth**. In rural areas of Bhutan, women save money from their limited monthly budgets and prefer their savings to invest in financial products, but still, the share of females is low in using formal accounts.

5. Suggestions

The suggestions required to support the financial inclusion is undernoted as:

- **Agent Banking:** In agent banking, the bank has agents to perform general stores. The agents must be adept in POS banking. The agents also provide awareness of financial products to people. Therefore, agent banking is very cost-effective as compared to branches.

- **Significance of Informal Sector:** The informal sector provides opportunities to people to express their problems and requirements of financial need for better participation in national issues. Social enterprises and associates offer business opportunities to support the economy.

- **Role of Government:** Government should promote financial inclusion through investment in communication technologies, services, and infrastructure. Furthermore, establishing regulatory authorities resolved the bank-related issues to restore consumer protection and build their trust. For this purpose, the Government needs to enhance the transparency and accountability of the court system.

- **Effective Regulatory and Supervisory Framework:** The Regulatory Authorities are required to be concerned about the Legal and Regulatory Framework for Consumer Protection Rights. The effective strategies and efficient implementation enhance the accountability and transparency in access to finance for the provision of quality services to the vulnerable sector of society.

- **Reduction in Cost/ Charges/ fees:** The critical success for financial institutions to stay in business is the provision of high-quality products with low transaction costs—the reduction in charges, commissions, and other fees, etc., on the electronic payment system.

- **Financial Literacy:** Media is the fourth pillar of the state. The effective use of the power of Media to promote financial awareness influences people's preference in the usage of financial services.

6. Conclusion

The research study constructs the index of financial inclusion for developing countries. The financial index evaluates the extent of financial inclusion for developing countries. For this purpose, this study uses Principal Component Analysis to estimate the sub-indices of the financial inclusion index while the overall index is estimated through Euclidean Formula. The financial inclusion index is based on four dimensions: access, usage of financial services, technology, and infrastructure.

This study finds out the National Financial Inclusion Strategy is required for each country to achieve higher financial inclusion. The goals of objectives settled in the National Financial Inclusion Strategy are based on their economic planning. The foremost priority goals set for the National Financial Inclusion Strategy are expanding financial access points, including the branch network, developing the Small and Medium Enterprises sector, and achieving the highest level of financial literacy. The priority of these goals varies from country to country. The countries, including Romania, Serbia, and Mauritius, have a priority goal of achieving financial literacy. On the other side, countries including Pakistan, Costa Rica, Rwanda and Guinea are given priority in developing Small and Medium Enterprises.

In contrast, countries that focus on expanding networks are Guatemala, Mauritania, Thailand, and Ukraine. Countries with low financial inclusion lack financial literacy, lack of financial inclusion strategy, financial constraints, preference for the usage of financial services, and ignorance of digital innovation. The reason behind countries having medium financial inclusion not progressing towards high financial inclusion is the lack of technological innovation and limited prudential measures.

The limitation of this study is the unavailability of data to form dimensions. To overcome this challenge, equal weight is assigned as per available indicators for the construction of sub-indices. In addition, the concept of consistency in the usage of financial service is needed to explain from a broader perspective but due to unavailability in the volume of retail transactions of financial instruments.

The further development in this research study is the comparison of developed and developing countries to examine whether or not the technologies of Developed Countries influence the process of digital innovation for Developing Countries.

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