



Munich Personal RePEc Archive

Nexus between Financial Inclusion, Financial Inequality, Economic Growth and Income Inequality

Bhatta, Siddha Raj

19 August 2024

Online at <https://mpra.ub.uni-muenchen.de/121795/>
MPRA Paper No. 121795, posted 03 Sep 2024 13:07 UTC

Nexus between Financial Inclusion, Financial Inequality, Economic Growth and Income Inequality

Abstract

This article attempts to analyze the nexus between financial inclusion, inequality in the distribution of financial services, economic growth and inequality by using a sample of 112 countries. It estimates financial inclusion index for the countries using a number of access and usage indicators and then investigates the linkages of such index with growth, financial inequality, and income inequality. Results show that even though Nepal has progressed a lot in expanding financial inclusion, it ranks 70 out of the 112 countries included in the study in a cross-country context implying that more need to be done in the future to come in the forefront. In addition, results from the growth and inequality regression demonstrate that in the presence of higher inequality in the distribution of financial services, the gains from financial inclusion might not be realized as expected. This calls for the attention of the policymakers to address the inequality in financial services so that financial inclusion can contribute to higher and equitable growth.

Keywords: Financial inclusion, Growth, Inequality

1. Introduction

The discussion on the relationship between financial access, economic growth and inequality has received considerable attention of the policymakers, academicians, and scholars in the recent years. It has been argued that financial inclusion fosters economic growth and helps in reducing economic inequality by making financial services available to the public at a reasonable cost and increases the gains of individuals from participation in financial markets. Early discussions on this issue show that financial inclusion relaxes the credit constraints for the poor by lowering the borrowing and information costs, enhances growth and reduces inequality (Galor and Zeira, 1993; Aghion and Bolton, 1997). However, recent studies have come up with mixed conclusions. In addition, some studies have focused on the non-linear relationship between financial inclusion and income inequality (Greenwood and Jovanovic, 1990; Townsend and Ueda, 2006). Also, some of the recent studies have emphasized on financial inclusion as a broader concept which includes not only the access to financial services, but also the use of services, ease of accessing the services, quality of the services and inequality in the distribution of such services. These studies argue that in the presence of higher financial inequality, increasing financial access can disproportionately benefit the wealthy agents and thus increases income inequality in the early stages, thereby nullifying the positive effects (Dabla Norris et al., 2015; Sahay et al., 2015).

This article attempts to analyze the nexus between financial inclusion, inequality in the distribution of financial services, economic growth and inequality by using a sample of 112 countries. First, it estimates financial inclusion index for the countries using a number of access

and usage indicators and then investigates the linkages of such index with growth, financial inequality and income inequality. Then, it investigates the financial access and inequality in Nepalese context and draws some policy implications for maximizing the gains from expanding financial access.

The rest of the article is structured as follows: section two constructs financial inclusion index and assesses the status of financial inequality, section three investigates the relationship among the variables under consideration, section four delves into a discussion in Nepalese context and the final section concludes the article with some policy implications.

2. Status of Financial Inclusion and Financial Inequality

The available measures on financial inclusion show that financial inclusion has improved rapidly in all countries over the years but there is still a huge spatial as well gender gap across the globe. The percentage of adults having an account at financial institution has increased to 71 percent in 2021 but at the country level, such share varies from 21 percent to 100 percent (World Bank, 2021), creating large geospatial difference across the countries. In addition, the differences in other aspects of financial inclusion such as the usage of financial services, restrictions at place in accessing the services and the quality of services offered by the financial institutions are even more pronounced (World Bank, 2021).

To evaluate the level of financial inclusion within a cross-country context, a financial inclusion index has been computed by using six financial access indicators and seven usage indicators spanning 112 countries. The list of the indicators used for the computation is provided in Table 1 below. The data are available in the Findex Survey published by the World Bank and Financial Access Survey published by the IMF. The financial inclusion index has been computed as the weighted average of the indicators normalized by using the global mini-max criterion. This method has been used by Sarma (2012), AFI (2016), Park and Mercado (2018), Nguyen (2020) and RBI (2021) to compute such index.

Table 1

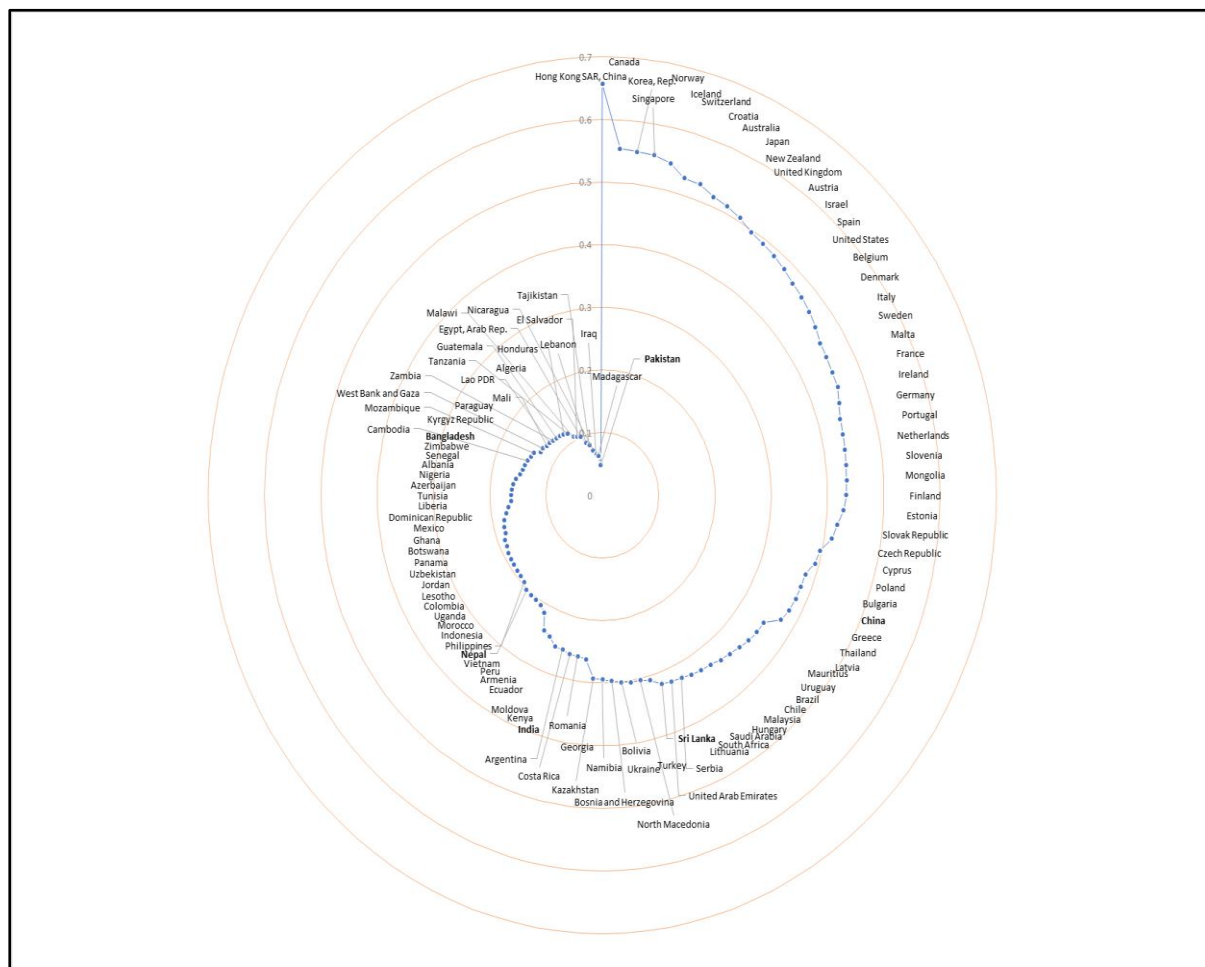
Indicators Used for the Estimation of Financial Inclusion Index

Access Indicators	Usage Indicators
Account (% age 15+)	Used a debit or credit card (% age 15+)
Owns a debit or credit card (% age 15+)	Has an inactive account (% age 15+)
No. of commercial bank branches/1,000 km ²	Saved at a financial institution (% age 15+)
Commercial bank branches/ 100,000 adults	Borrowed any money (% age 15+)
No. of ATMs per 1,000 km ²	Made or received a digital payment (% age 15+)
No. of ATMs/100,000 adults	Deposits of household sector with commercial banks (% of GDP)
	Outstanding loans from commercial banks (% of GDP)

Estimation results show that while Hong Kong, Canada, Korea, Singapore, and Norway are on the top of the financial inclusion frontier as of 2021, Pakistan, Madagascar, Iraq, Tajikistan and Lebanon are on the lower end. Nepal has achieved moderate type of progress in this journey compared to other countries. It ranks 70 out of the 112 countries included in the computation implying that more than half of the countries in the sample are ahead of Nepal. In terms of the individual indicators, Nepal is behind in terms of the percentage of adults that use debit/credit card, the percent of adults who save at financial institutions and the percent of adults who make digital payments. In terms of these three indicators, Nepal's position is far below the average of the 112 countries included in the sample. In the south Asia, Sri Lanka and India are ahead of Nepal while Bangladesh and Pakistan are behind (Chart 1).

Chart 1

Financial Inclusion Index and Relative Position of Countries



Source: Author's Estimation from Findex, World Bank (2021) and FAS, IMF (2021)

Note: Outer circle represents higher financial inclusion.

In the context of financial inclusion, one of the recently focused issues is the inequality in the distribution of financial services. Literature shows that in the initial stage, inequality in the access to financial services worsens as access to financial services increases and after a certain

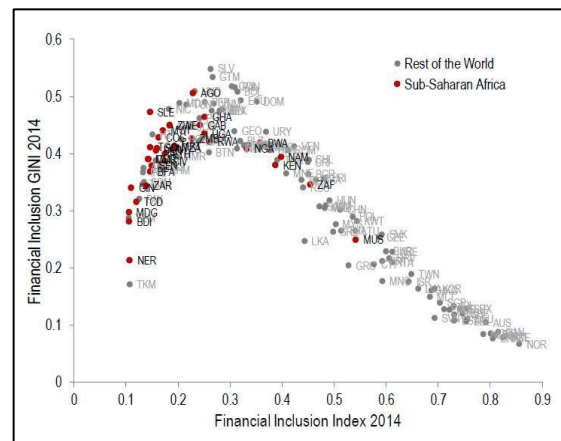
level of financial access, such inequality declines (Aslan et al., 2017). This effect is referred to Kuznets-type relationship followed by financial inequality. Aslan et al. (2017) show that more than half of the countries in the world have moderate to high level of financial inequality as reflected by a Gini coefficient of 0.30 or higher (Chart 2), which has created corresponding adverse impact on income inequality in the countries. While very few high-income countries have the issue of such inequality, majority of the lower middle-income countries and upper middle-income countries included in the sample have higher financial inequality (Table 2).

Table 2
Financial Inequality by Income Groups

Income Groups	Lower Gini (up to 0.30)	Higher Gini (>0.30)	Total
High income	37	4	41
Low income	3	3	6
Lower middle income	7	25	32
Upper middle income	6	27	33
Grand Total	53	59	112

Source: Author's Estimation based on Aslan et al. (2017) estimation of financial Gini Coefficients

Chart 2
Financial Inclusion and Financial Inequality



Source: Aslan et al., (2017)

3. Relationship between Financial Inclusion, Growth and Inequality

There exists a strong theoretical argument in favor of the positive relationship between financial inclusion and economic growth. The most important channel argued behind this mechanism is the greater gains achieved from expanding participation in financial markets, removal of credit constraints and reduced cost of financial services. Majority of empirical literature support this argument and conclude a positive association between financial inclusion and growth. Some of the studies in this line include Estrada et al. (2010), Kpodar and Andrianaivo (2011), Camara and Tuesta (2014), Lenka and Sharma (2017), Le et al. (2019), Vo and Nguyen (2019), Ifediora, et al. (2022), and Abdallah et al. (2023). On the other hand, some studies document a low or even negative impact of financial inclusion on economic growth (Gómez Rodríguez et al., 2021).

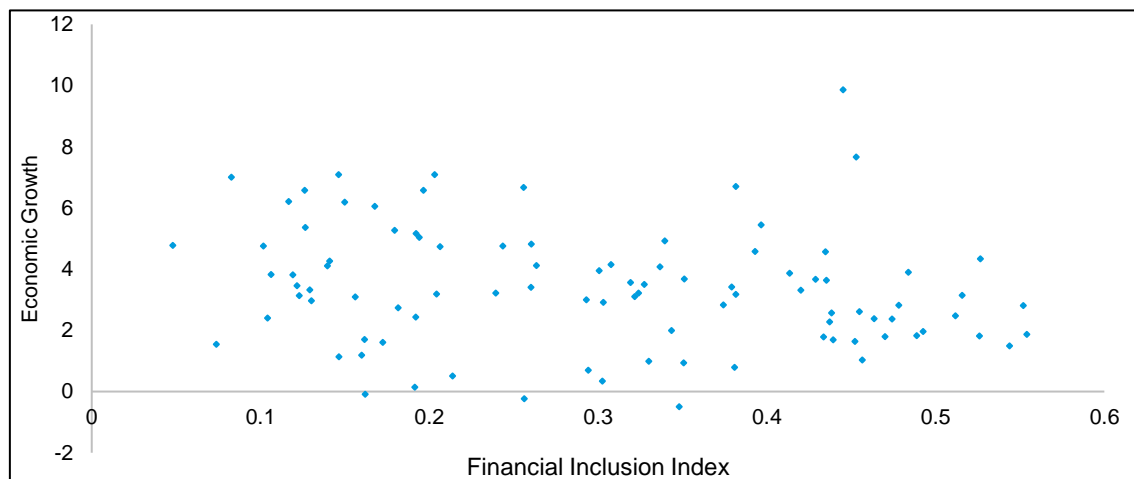
Chart 3 plots the financial inclusion index from the sample countries against economic growth achieved by the countries during 2015-2019. It shows that the association between financial inclusion and economic growth appears to be weak.

To estimate the effect of financial inclusion on economic growth, the growth regression has been estimated for the low and medium-income countries with the widely used control variables in the literature. The regression results of the growth equation show that despite the expected positive sign of financial inclusion index and expected negative sign of financial

inequality, structural features as proxied by the share of agriculture in total output and traditional factors of production matter more for economic growth. This might be because of the structural rigidities present in the countries as measured by the share of agricultural sector in total output which constraints financial inclusion as a lubricant of economic growth.

Chart 3

Scatterplot of Financial Inclusion Index and Economic Growth



Source: World Bank (2021), IMF (2021) and Author's Estimation

Table 3

Regression Results for the Growth Equation

Growth	Coef.	St.Err.	t-value	p-value	[95% Conf Interval]	Sig
lnindex	.01	.456	0.02	.983	-.903 .922	
Inf	-.046	.031	-1.47	.147	-.109 .017	
Lncf	1.67	.789	2.12	.039	.09 3.25	**
Lntrade	.277	.641	0.43	.667	-1.006 1.56	
Lnagri	1.321	.33	4.01	0	.661 1.981	***
Lnpop	.341	.176	1.93	.058	-.012 .694	*
Ineq	-.275	.519	-0.53	.598	-1.315 .765	
Constant	-10.929	5.491	-1.99	.051	-21.925 .067	*
Mean dependent var.		3.748	SD dependent var.		2.022	
R-squared		0.425	Number of obs.		65	
F-test		6.015	Prob > F		0.000	
Akaike crit. (AIC)		255.034	Bayesian crit. (BIC)		272.429	

*** $p < .01$, ** $p < .05$, * $p < .1$

Source: Authors Estimation from World Bank Data

Note: lnindex=Log of financial inclusion index, inf=Inflation, lncf=log of capital formation, lntrade=log of trade GDP ratio, lnagri=log of share of agriculture in GDP, lnpop=log of population, ineq=dummy for financial inequality (high=1).

Data refer to 2019. Earlier data used because of COVID crisis and subsequent disturbances in the world economy.

Regarding the relationship between financial inclusion and income inequality too, the available empirical literature is not conclusive. Some studies find that financial inclusion leads to a reduction in income inequality implying that the authorities need to pay more attention to financial inclusion to effectively reduce income inequality. These studies argue that financial

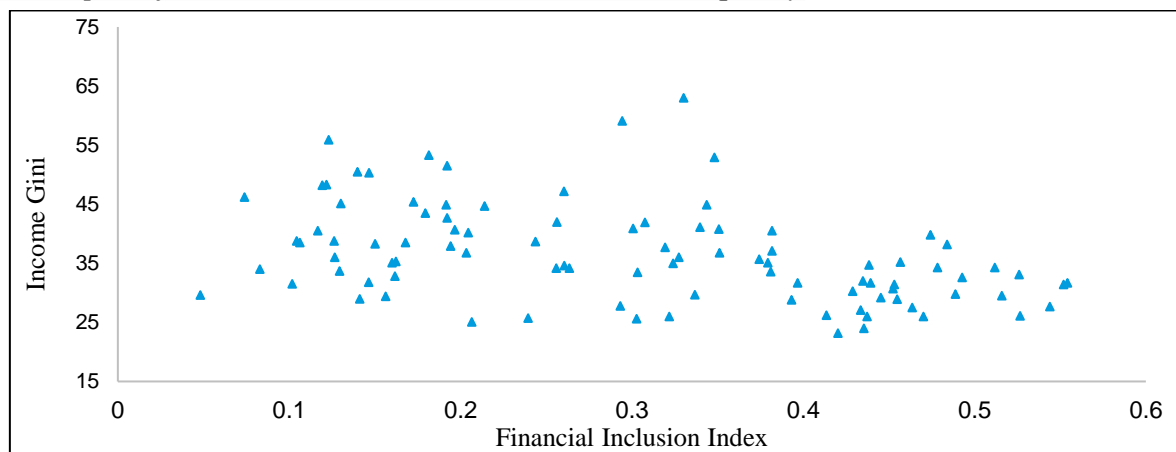
inclusion create opportunities for the poor and the disadvantaged thereby creating positive income effect (Omar and Inaba, 2020; Dabla-Norris et al., 2015; García-Herrer and Turégano, 2015; Salazar-Cantú et al., 2015; Sahay et al., 2015). On the other strand, other studies including Honohan (2007), Park and Mercado (2015) and Park and Mercado (2018) find little econometric evidence on the argument that financial inclusion lowers income inequality. They argue that financial inclusion could benefit those who already have access to financial inclusion and disproportionately benefit the rich.

Recently, focus has been given to the inequality in financial services while examining the effect of financial inclusion in growth as well as income inequality. In this context, Aslan et al. (2017) investigate the links between financial inclusion, gender, and income inequality and argue that inequality in financial access is significantly related to income inequality. Dabla Norris et al. (2015) argue that financial inclusion can help reduce income inequality only if it increases the access of the poor thereby reducing the financial inequality. Otherwise, such inclusion can disproportionately benefit the wealthy agents and increase income inequality.

Chart 4 presents the scatterplot between financial inclusion index and income inequality in the sample countries. It shows that there is likely to be negative association between financial inclusion and income inequality, however, after controlling for the other variables in the inequality regression, the relationship appears to be weak as shown by the regression results in Table 4.

Chart 4

Scatterplot of Financial Inclusion Index and Income Inequality



Source: World Bank (2021), IMF (2021) and Author's Estimates

The regression results show that economic growth and trade openness help improve income inequality while the inequality in financial services worsens it. This implies that in the presence of high inequality of financial services, progress in financial access does not create its intended impact on income inequality. These results are consistent with the findings of Aslan et al. (2017).

Table 4*Regression Results for the Inequality Equation*

Lngini	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Lnindex	-.073	.047	-1.56	.123	-.167	.02	
Inf	.001	.003	0.27	.79	-.006	.008	
Lntrade	-.093	.044	-2.13	.036	-.18	-.006	**
Ineq	.114	.052	2.21	.03	.011	.217	**
Growth	-.023	.011	-2.09	.039	-.045	-.001	**
constant	3.896	.211	18.50	0	3.478	4.315	***
Mean dependent var		3.567	SD dependent var			0.218	
R-squared		0.315	Number of obs			90	
F-test		7.726	Prob > F			0.000	
Akaike crit. (AIC)		-42.045	Bayesian crit. (BIC)			-27.046	

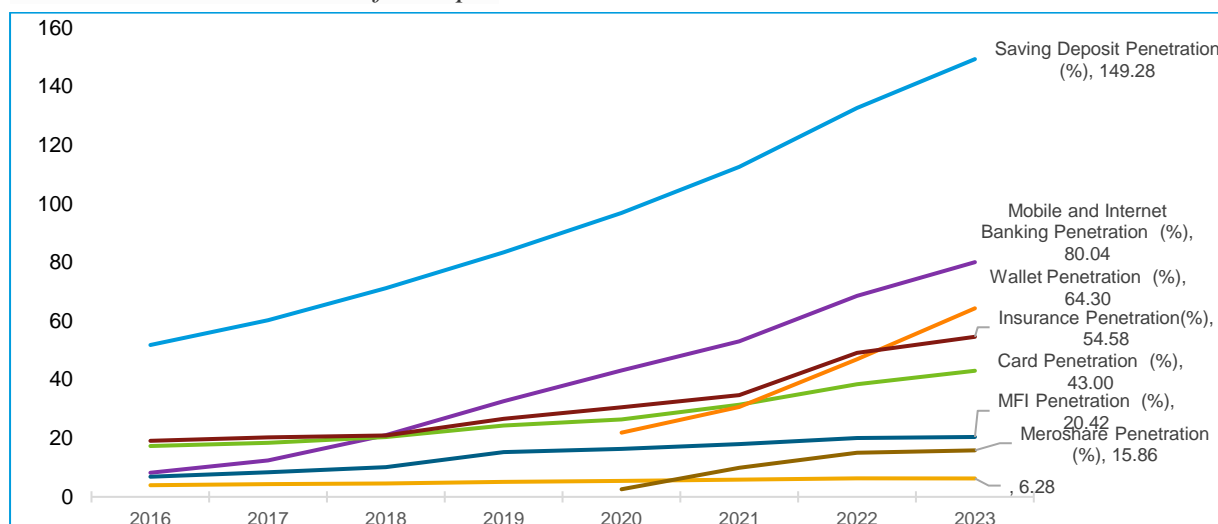
*** $p < .01$, ** $p < .05$, * $p < .1$

Lngini=Log of Gini coefficient, inf=Inflation, Lntrade=log of trade GDP ratio, ineq=dummy for financial inequality (high=1), growth=economic growth rate.

Note: Data refer to 2019. Earlier data used because of COVID crisis and subsequent disturbances in the world economy.

4. Nepalese Context

Financial services has expanded rapidly in Nepal during the past one decade along with the expansion of bank branches and adoption of Fintech in financial service delivery. It has been reflected in the increase in the number of savings accounts, use of debit cards, wallets, mobile banking as well as internet banking for payments. Chart 5 shows the growth of various indicators of financial inclusion over the last seven years.

Chart 5*Financial Access Indicators for Nepal*

Source: Author's Estimation from NRB and CBS Data¹

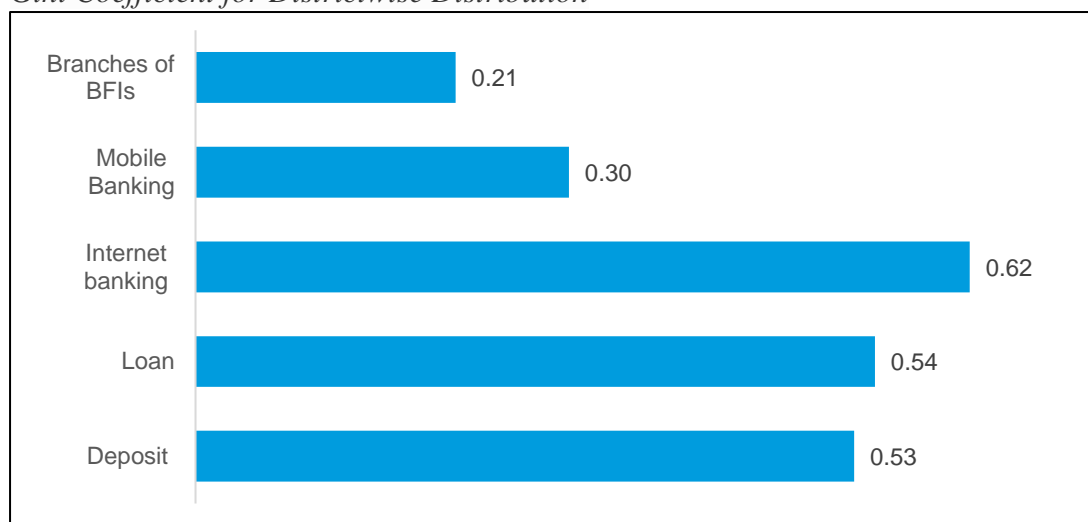
¹ Penetration ratios have been calculated by dividing the number of accounts/ number of cards/number of insurance policies/number of members by population and multiplied by 100.

As presented in Chart 5, most of the financial inclusion indicators have shown rapid progress. Saving account penetration ratio has increased from 83 percent in 2019 to 149 percent in 2023, mobile and internet banking penetration has increased from 32 percent to 80 percent and card penetration has increased from 24 percent to 43 percent during the period. After the COVID-19, wallet penetration has also increased rapidly from 22 percent in 2020 to 64 percent in 2023. The only indicator that grew slowly over the years is the loan penetration ratio implying a slower progress in access to loans provided by the banks and financial institutions.

Despite the significant progress achieved in expanding the access to financial services, inequality in the distribution of financial services is still higher which might have reduced the benefits of financial inclusion. Chart 6 shows the Gini coefficients for the district wise distribution of deposits, loans, internet, and mobile banking as well as the distribution of the branches of the BFIs. In particular, the Gini coefficient for loan, and deposits are still above 0.50 indicating the need of more pro-equal policies for ensuring a fair and equitable distribution of financial services.

Chart 6

Gini Coefficient for Districtwise Distribution



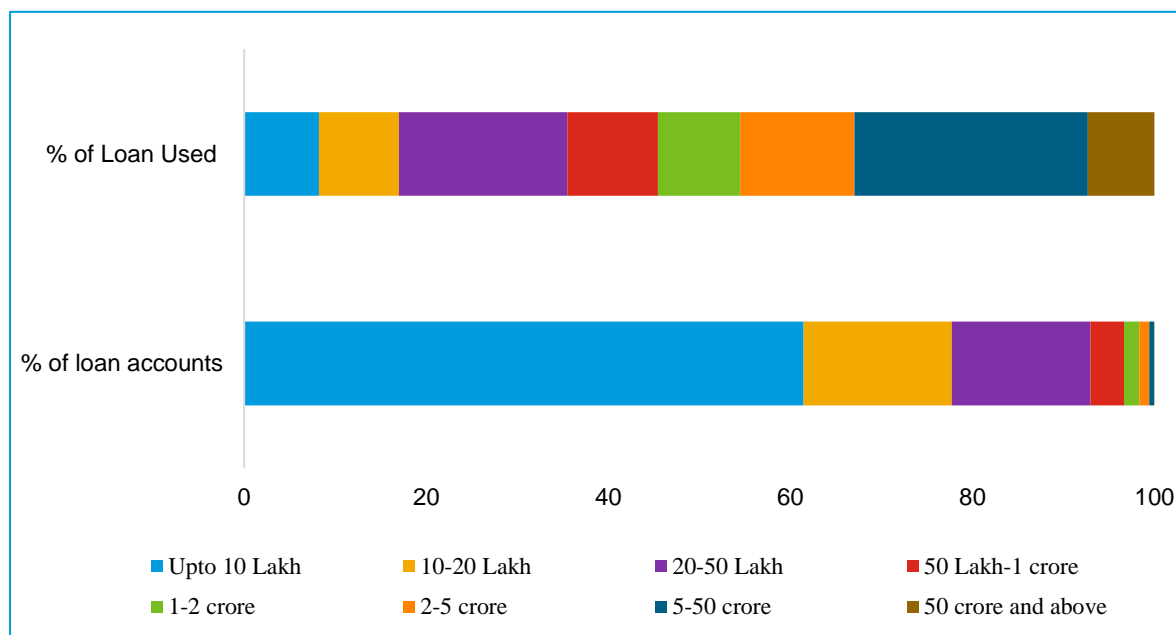
Source: Author's Estimation from NRB and CBS Data

Looking from another spectrum, use of loans from the banking sector shows that the distribution is not even-handed. In terms of the size of the loans, about 77.7 percent of the loan accounts have a loan size of Rs. 20 lakhs or less while 61.5 percent of the loan accounts have a loan amount of Rs.10 lakhs or less. These 77 percent of the loan accounts use only about 17 percent of the loan amount from the banking system. On the other hand, there are less than one percent of loan accounts that use a loan of more than Rs. 5 crores and use about 33 percent of the total loan amount. Top one percent of the loan accounts use 39 percent while the top five percent use about 60 percent of the loan amount (Chart 7). Though, this result is not surprising given the structural characteristics of the economy and large portion of lending being provided against the back-up of fixed assets, further facilitation and initiatives from the government and

regulators are required to create an even-handed distribution of resources from the financial system in the long run.

Chart 7

Distribution of Loans by Loan Accounts and Amount (%)



Source: Author's Estimation from NRB Data

These inequality indicators are consistent with the findings of Aslan et al. (2017) for Nepal indicating that the inequality in the distribution of financial services is still higher which may be one of the causes of weak performance of the economy in terms of growth and reduction in income equality. These call for additional efforts in reducing financial inequality to leverage from the expansion in financial services.

In terms of the loans used by economic sectors, most of the sectors have unequal distribution of loan amount except Agriculture and consumption loan. And in terms of the loan product, longer term loans including the working capital loans has more uneven distribution among the borrowers.

Nepal Rastra Bank has taken a number of initiatives to expand financial access and ensure an equal access to affordable financial services. Some of the policy initiatives are:

- Financial Inclusion Road map (2017-22)
- Subsidized Loan program
- Policy of expanding bank branches in local levels
- Digital lending guidelines
- Focus on digital payments
- Grievance redressal mechanisms
- Project based lending practices
- Deposit guarantee scheme
- Deprived sector lending

- Minimum lending requirements to micro, small and medium sized industries.
- Collateralless lending under microfinance models

These initiatives have resulted into accelerated progress in financial inclusion over the years but the inequality in the financial services has not improved noticeably. It demands future efforts of the government as well as NRB to improve the quality of access to financial services and ensure that everyone has such access at easier and affordable terms. These initiatives could include a lending approach based on the credit history of the borrowers rather than the current fixed asset backed lending practices, easier terms of lending for the start-ups, use of digital channels to reduce the cost of financial services, enhancing financial literacy and strengthening financial consumer protection.

5. Conclusion and Policy Implications

Financial inclusion can work as a vehicle for economic growth and reduction in income inequality. However, in the presence of higher inequality in the distribution of financial services, the gains from inclusion might not be realized as expected. This calls the attention of the policymakers to consider the equality issue so that growth can be achieved with more equal distribution of the gains. In case of Nepal, financial access has been expanded rapidly in the recent years which is expected to augment the growth rate, but financial inequality is still higher which might be one of the major causes of slow progress in the reduction in income inequality. This implies that policy efforts should be focused to ensure a more equitable access to financial services.

Secondly, Nepal needs to move further in terms of deepening financial inclusion as its relative position is weaker compared to more than half of the economies. This can be done by further promoting digital financial services while encompassing the unbanked population in the financial inclusion spectrum.

Thirdly, to reap full benefits from financial inclusion, structural issues in the economy should be addressed first, so that financial inclusion can be used as a modern vehicle of growth and equality.

References

- Abdallah, A., Becha, H., Kalai, M., & Helalim, K. (2023). Does digital financial inclusion affect economic growth? New insights from MENA Region. *8th International Conference, ICDEc 2023 Braga, Portugal, May 2–4, 2023 Proceedings*.
- Aghion, P., & Bolton, P. (1997). A theory of trickle-down growth and development. *The review of economic studies*, 64(2), 151-172.
- Alliance for Financial Inclusion (AFI). (2016). *Alliance for Financial Inclusion Policy Model: AFI Core Set of Financial Inclusion Indicators*.
- Andrianaivo, M., & Kpodar, K. (2011). ICT, financial inclusion, and growth: Evidence from African countries.
- Aslan, G., Delechat, C., Newiak, M., & Yang, F. (2017). Inequality in financial inclusion, gender gaps, and income inequality. *IMF Working Paper*.
- Camara, N., & Tuesta, D. (2014). Measuring financial inclusion: A multidimensional index. *BBVA Research*.
- Dabla-Norris, M. E., Kochhar, M. K., Suphaphiphat, M. N., Ricka, M. F., & Tsounta, M. E. (2015). *Causes and consequences of income inequality: A global perspective*. International Monetary Fund.
- Estrada, G. B., Park, D., & Ramayandi, A. (2010). Financial development and economic growth in developing Asia. *Asian Development Bank Economics Working Paper*, (233).
- Galor, O., & Zeira, J. (1993). Income distribution and macroeconomics. *The review of economic studies*, 60(1), 35-52.
- García-Herrer A. & Turégano D.M. (2015). Financial inclusion, rather than size, is the key to tackling income inequality. *BBVA Research Working Paper 15/05*. Madrid, Spain.
- Gómez Rodríguez, T., Ríos Bolívar, H., & Zambrano Reyes, A. (2021). Interaction between economic growth, stability and financial inclusion: International empirical evidence. *Contaduría y administración*, 66(1).
- Greenwood, J., & Jovanovic, B. (1990). Financial development, growth, and the distribution of income. *Journal of political Economy*, 98(5, Part 1), 1076-1107.
- Honohan, P., & Beck, T. (2007). *Making finance work for Africa*. World Bank Publications.
- Ifediora, C., Offor, K. O., Eze, E. F., Takon, S. M., Ageme, A. E., Ibe, G. I., & Onwumere, J. U. (2022). Financial inclusion and its impact on economic growth: Empirical evidence from sub-Saharan Africa. *Cogent Economics & Finance*, 10(1), 2060551.
- IMF (2021). Financial access survey (2021)
- Le, Q., Ho, H., & Mai, N. (2019). The impact of financial inclusion on income inequality in transition economies. *Management Science Letters*, 9(5), 661-672.
- Lenka, S. K., & Sharma, R. (2017). Does financial inclusion spur economic growth in India? *The Journal of Developing Areas*, 51(3), 215-228.

- Nguyen, T. T. H. (2020). Measuring financial inclusion: a composite FI index for the developing countries. *Journal of Economics and Development*, 23(1), 77-99.
- Omar, M. A., & Inaba, K. (2020). Does financial inclusion reduce poverty and income inequality in developing countries? A panel data analysis. *Journal of economic structures*, 9(1), 37.
- Park, C. Y., & Mercado, R. (2018). Financial inclusion, poverty, and income inequality. *The Singapore Economic Review*, 63(01), 185-206.
- Park, C. Y., & Mercado, R. (2015). Financial inclusion, poverty, and income inequality in developing Asia. *Asian Development Bank Economics Working Paper Series*, (426).
- Reserve Bank of India. (2021). Financial inclusion index for India. *RBI Bulletin*. Reserve Bank of India.
- Sahay, M. R., Cihak, M., N'Diaye, M. P., Barajas, M. A., Mitra, M. S., Kyobe, M. A., ... & Yousefi, M. R. (2015). *Financial inclusion: can it meet multiple macroeconomic goals?* International Monetary Fund.
- Salazar-Cantú, J., Jaramillo-Garza, J., & Álvarez-De la Rosa, B. (2015). Financial inclusion and income inequality in Mexican municipalities. *Open Journal of Social Sciences*, 3(12), 29-43.
- Sarma, M. (2012). Index of Financial Inclusion—A measure of financial sector inclusiveness. *Centre for International Trade and Development, School of International Studies Working Paper Jawaharlal Nehru University. Delhi, India*.
- Townsend, R. M., & Ueda, K. (2006). Financial deepening, inequality, and growth: a model-based quantitative evaluation. *The Review of Economic Studies*, 73(1), 251-293.
- Turegano, D. M., & Herrero, A. G. (2018). Financial inclusion, rather than size, is the key to tackling income inequality. *The Singapore Economic Review*, 63(01), 167-184.
- World Bank (2021). Findex survey (2021).