Nexus between Fiscal Inclusion and Economic Growth of Nepal

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Abstract

This study is aimed to investigate the nexus between financial inclusion and economic growth of Nepal. This study employs descriptive as well as multiple regression model using the data over the period of mid-July 2014 to mid-July 2021 to examine the linkage between financial inclusion and economic growth of Nepal. The empirical results of the study reveal that there is strong association of financial inclusion with economic growth, however, there is no positive and robust impact of financial inclusion on economic growth of Nepal. In contrary, overall analysis of the study shows the strong evidence to support the view that financial inclusion is the backbone of the Nepali economy. This study covers only limited indicators of financial inclusion and limited periods of data which are not enough to evaluate the long-run relations of financial inclusion and growth of Nepal. This study suggests that policies promoting financial deepening and penetration and reforming the financial sectors to bond with the financial inclusion for economic growth of Nepal. In this study, we attempt to assess the significance of financial inclusion in economic growth so that piecemeal efforts can be made to combat Nepal's policy hitches and logjams.

Keywords: economic development, financial access, financial development, regression

Introduction

Financial development and its access in the economy determine the level of economic development. The earlier literature also supports this view." Financial growth in excess of real growth is apparently a common phenomenon around the world over time, for any one country as its income per capita increases, financial assets rise relative to national real wealth" (Gurley and Shaw, 1967, p. 257). A study of 35 countries conducted by Goldsmith (1969) over the period 1860 to 1963 concluded that the level of the financial sector of any country expands relative to the size of its economy as it develops financial sector. McKinnon (1973) also supported that the financial development strategically accelerates the economic growth. Thus, the earlier literatures explicitly expressed the saving and investment mechanism of financial system can positively affect the economic growth (McKinnon, 1973; Shaw, 1973).

Schumpeter (1934) emphasized the banking sector through productive investment promotes economic growth of the nation. Many literatures concluded that there is strong and long-run association of financial institutions (Dhungana, 2014) and banking sectors (Kharel & Pokhrel, 2012) with economy growth of Nepal. Beck, Levine and Loyaza (2000) found that financial intermediaries play a crucial role to grow total factor productivity and thereby overall GDP growth.

Using the ARDL time series model over the period 1965 to 2018, Paudel and Acharya (2020) assessed the relevance of financial sector improvements in Nepali economy and found that financial development leads to economic growth. However, a similar study of Sri Lankan economy revealed there is no strong evidence that the financial development helps economic growth (Perera & Paudel, 2009). Thus, most of the literatures on the financial system and development support the view of its cause to economic growth. So, it can conclude that the financial development and inclusion are the engine to accelerate the growth of any nation.

Financial inclusion is the results of financial development of any nation. Financial inclusion is the process of entering any individual and entrepreneur into the financial market for using financial products. It can be assured where the proliferation of financial institutions, financial products and service, individual and institutional involvement on banking and financing, financial habits, financial deepening, financial transaction, access of financing, domestic credit by financial mechanism, financial penetration, insurance practice, financial liberalization, fiscal federalism, financial education and awareness, etc. are to be assured. To World Bank (2019), poverty alleviation and inclusive growth are dependent on financial inclusion. Access to transaction accounts pave the way for broader financial inclusion, allowing people and businesses to conduct financial transactions more efficiently and safely, gain access to funds, invest for the future, and cope with economic shocks.

The Strategic Plan (2012-2016) of Nepal Rastra Bank (NRB) strategically accepted the financial inclusion is the major pillar of economic development. The Banks and Financial Institutions Act (BAFIA) is the governing legal mechanism of all the activities of banks and financial institution and it helps to advancing financial inclusion (Pant, 2016). Based on the penetration of banks and financial institutions and 'D class' micro-finance institutions, Dhungana and Kumar (2015) examined the state of financial inclusion in Nepal. In Nepal, the status of financial inclusion is weak and unbalanced, according to this study. As a result of the geographical complexity, banks and microfinance penetration in the Far-Western and Midwestern regions are lower than those in other regions.

Sethi and Acharya (2018) study with 31 countries over the period of 2004 to 2010 to investigate the linkage of financial inclusion on economic growth. The study found that financial inclusion and economic growth are positively and long-term related to one another across 31 countries. Moreover, bidirectional causality showed that financial inclusion drives economic

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growth. A study concluded that the financial inclusion can accelerate the growth (Subrahmanyam and Acharya, 2017). The level of financial inclusion is associated with the economic development (Sarma & Paris, 2011). King and Levine (1993b) assessed Schumpeter's view about the financial development as the backbone of economic growth using data of 80 countries covering the data from 1960 to 1989 and concluded that there is strong association of major indicators of financial development with real per capita GDP growth.

According to a time series analysis, the financial sector plays an imperative role in the development of the economic activity (Demetriades & Hussein, 1996). Another study of Pakistani economy by applying ARDL concluded that economic growth and financial inclusion are cointegrated and there is a positive effect of it on economic growth in the short-run (Ali, Fatima & Ahmed, 2019). A panel study of Sub Sharan African (SSA) region (Albiman & Bakar, 2021) and ASEAN (Suidarma, 2019) revealed that financial inclusion helps to promote economic growth. Many studies on different economies revealed that the financial inclusion is positively associated with and accelerated the economic growth and development (Kodan & Chhikara, 2013; Van, Vo, Nguyen, & Vo, 2021; Singh & Stakic; 2021; Kim & Hassan, 2018; Sharma, 2016; Thathsarani, Wei, & Samaraweera, 2021; Cicchiello, Kazemikhasragh, Monferrá, & Girón, 2021).

Most of the reviewed literatures have been employed the different time series and panel data analysis to estimate the nexus between financial inclusion—proxied by financial penetration, domestic credit by bank, branches of banks, etc. and economic growth—proxied by growth of real GDP. After reviewing the relevant literatures, it is found that there are no proper and sufficient studies about Nepali context. This is the motivation of this paper and it has attempted to fill the gap. In this paper, the multiple regression model has been applied to identify any evidence about the view that the financial inclusion can cause economic growth of Nepal. Thus, the purpose the paper is to evaluate the nexus between financial inclusion and economic growth of Nepal. The rest of the paper is well organized with methodology, results and discussion, and conclusion.

Research Methods and Materials

Based on the quantitative method, this study has attempted to objectively know about any cause of financial inclusion on economic growth of Nepal. To examine the relationship between financial inclusion and economy of Nepal, descriptive analysis as well as multiple linear regression model are employed. This study covers only 8 years data from mid-July 2014 to mid-July 2021 and they were adopted from the economic survey of Nepal for the fiscal year 2020/21 published by Ministry of Finance of Nepal and world development indicator (WDI) from the website of World Bank. In this study, economic growth (RGDP) proxied by annual growth rate of real gross domestic product is the explained variable. Branch of bank and finance companies

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(BBF) including branches of commercial banks, development banks and finance companies; number of deposit accounts per 100,000 population (DAs); mobile banking service users (MBU); number of branches per 100,000 population (NOB); and domestic credit to private sector by banks as % of GDP (DCP) are the regressors as proxied to financial inclusion in Nepal. Meanwhile, inflation (INF), that influences the estimated relationship, is taken as the control variable in the model. To investigate the expected relationship between variable of interest, the specified model is

$$RGDP = a_0 + a_1 BBF + a_2 MUB + a_3 DAs + a_4 NOB + a_5 DCP + a_6 INF + \varepsilon$$

Results and Discussion

As increasing the financial deepening in the economy, financial sectors could be the engine of the economic development. It accelerates the economic growth of the economy by optimal utilizing of financial resources. Financial access and uses insight the level of public involvement in financial sectors. Financial inclusion is the results of fiscal federalism and fiscal literacy. The overall summary of the financial indicators of financial access in Nepal present in the Table 1.

Table 1

*Last Five Years Indicators of Financial Access in Nepal*

Indicators of financial access	Mid-July 2017	Mid-July 2018	Mid-July 2019	Mid-July 2020	Mid-July 2021
Number of banks and financial institutions					
Commercial banks	2274	3023	3585	4436	4632
Development banks	769	993	1267	1029	1069
Finance companies	130	186	204	243	256
Population per bank branch	5610	4334	3363	3072	2913
Number of deposit accounts	19677005	23544859	27866505	32454204	35766953
Number of loan accounts	1216091	1301010	1439648	1544059	1651329
Mobile banking service users	1669732	5086069	8347187	11306797	13267947
Internet banking service users	783751	834302	917344	1031227	1131547
Number of ATMs	2081	2791	3316	4106	4294
Number of debit cards	4980958	5544253	6708521	7329202	8402379
Number of credit cards	68966	104721	123146	160297	185628
Number of deposit a/c per lakh population	105790	81701	95400	151768	164832
Number of ATMs per lakh population	11	10	11	19	20

Number of branches per lakh population	17	15	17	14	13
Number of debit cards per lakh population	26779	19239	22966	34277	37722
Number of credit cards per lakh population	371	363	422	750	760

Note. Data are adopted from economic survey of Nepal, 2020/21.

As shown in the table, number of the branches of banks and financial institutions have been increasing trend till the data. In contrary, population per bank branch is gradually diminished. Table also shows that the number of deposit accounts and number of loan accounts are increasing year by year. Meanwhile, mobile banking and internet banking service users are also increasing. The observation of data of last five fiscal years fiscal access reveals that that there is increasing trend of number of ATM, debit cards and credit cards in Nepal. It is also clear from the above table that the number of deposit account per lakh population and number of ATMs per lakh population are in fluctuating trend but later on it is in the increasing trend. Number of branches per lakh population are falling in the resent years. However, the number of debit and credit cards per lakh population are increasing in the Nepali economy. The table shows that the financial deepening, access, penetration, and thus financial inclusion are increasing trend in Nepal.

The following figures show the trend of the chief indicators of the fiscal inclusion under the study. As shown in figure, BBF, MBU and DCP are in upward trending and RGDP, NOB, DAS, and INF are in fluctuating. It is clearly exhibited in the Figure 1.

Figure 1

Graph of the Variables of Interest under the Study
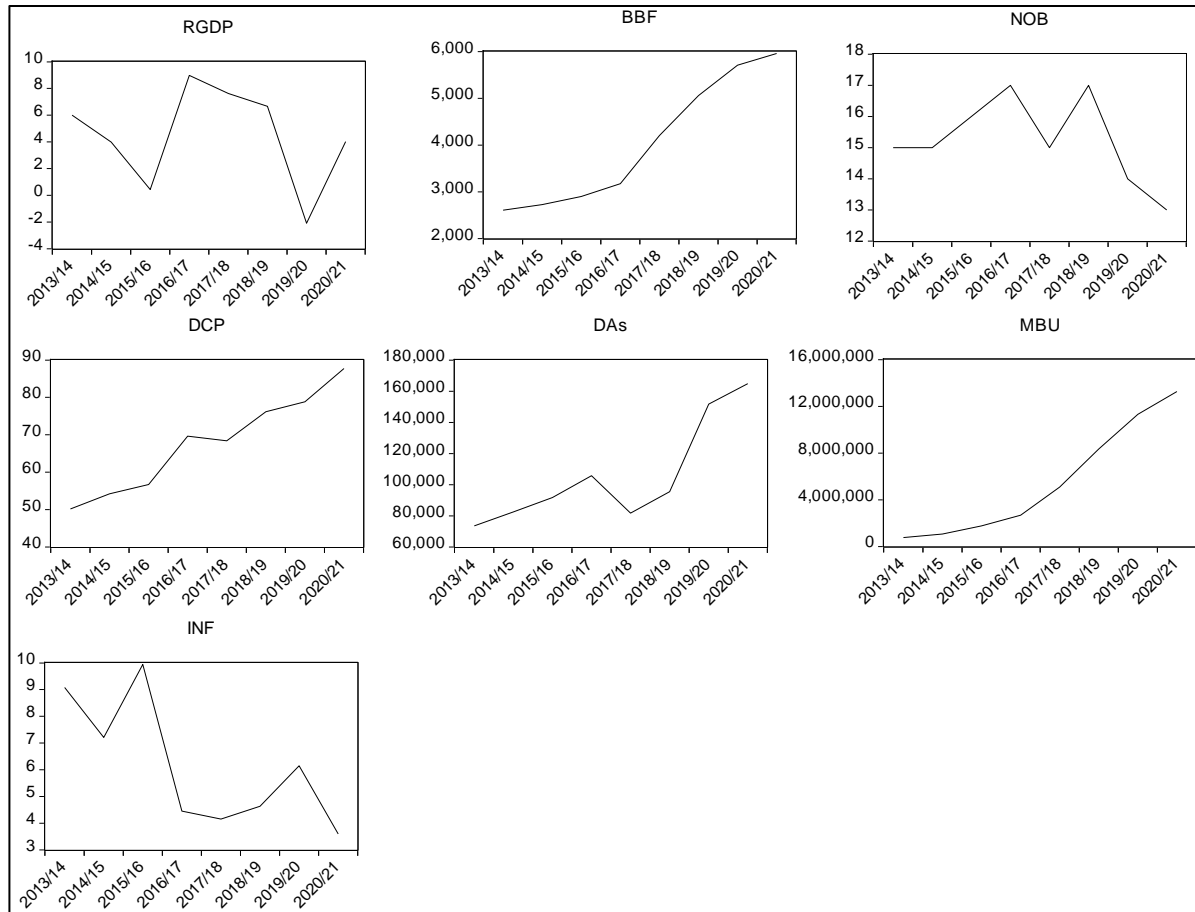
Note. INF = Inflation, RGDP = Real GDP growth, BBF = Branch of Bank and Finance Companies = Commercial Banks + Development Banks + Finance Companies, DAs = Number of Deposit Accounts per 100,000 Population, MBU = Mobile Banking Service Users, NOB = Number of branches per 100,000 population, DCP = Domestic Credit to Private Sector by Banks (% of GDP)

Pearson Correlation

To know the degree of relationship between RGDP and each of other regressors, the Pearson correlation was employed. The results of correlation between variables of interest over the period of 2013/14 to 2020/21 have presented in the correlation matrix below.

Table 2

Pearson Correlation Matrix

	RGDP	INF	BBF	MBU	DAs	NOB	DCP
RGDP	1	-0.441	-0.276	-0.310	-0.462	0.466	-0.083
INF	-0.441	1	-0.660	-0.630	-0.457	0.106	-0.802
BBF	-0.276	-0.660	1	0.992	0.817	-0.472	0.939
MBU	-0.310	-0.630	0.992	1	0.875	-0.530	0.941
DAs	-0.462	-0.457	0.817	0.875	1	-0.603	0.839
NOB	0.466	0.106	-0.472	-0.530	-0.603	1	-0.324
DCP	-0.083	-.0802	0.939	0.941	0.839	-0.324	1

The table reveals that there is positive relationship between RGDP and NOB. It indicates that any rise in number of branches per 100,000 population (NOB) causes to raise the real gross domestic product (RGDP). However, all other variables—BBF, INF, MBU, DAs, DCP have inverse relationship between RGDP. This implies the opposite relationship of those variables with RGDP. The table thus elucidates that there is strong and significant relationship between all the variables of interest except DCP with RGDP that confirms the financial penetration is not satisfactory in Nepal.

Multiple Regression

To fulfil the objective of the paper that the dependability of variables of fiscal inclusion and predicted variable, RGDP, the multiple regression was employed. It is used under the study to investigate the relationship of predictors on RGDP. To estimate the linear regression under the study, all requested variables were entered. The summary of regression result is presented in the Table 3.

Table 3

Regression Results

Variables	Unstandardized coefficients (beta)	Std. error	t	Sig.
(Constant)	50.796	39.776	1.277	0.423
BBF	-0.014	0.010	-1.355	0.405
MBU	0.000004	0.000	1.060	0.482
DAs	0.000	0.000	-1.171	0.450
NOB	0.195	1.896	0.103	0.935
DCP	0.163	0.852	0.192	0.880
INF	-1.379	1.609	-0.857	0.549
R^2	0.933			
Adjusted R^2	0.528			

F-statistic (ANOVA)	2.306
P-value	0.465

The results of regression shows that the relationship between six different independent variables—BBF, MBU, DAs, NOB, INF, and DCP each of with single dependent variable—RGDP. Generally, unstandardized coefficients (Beta) confirm the relationship between predictor and predicted variable. Table also reveals that there is no significant relationship between the independent variables of fiscal inclusion with RGDP. As shown in the table, the results of multiple regression can be fitted in the following regression model as follows:

$RGDP = 50.796 - 0.014BBF + 0.000004MBU + 0DAs + 0.195NOB + 0.163DCP - 1.379INF$

As stated in the regression equation, the regression coefficient of BBF -0.014 suggests that one unit change in BBF results to 0.014 percent inversely change in RGDP. The regression coefficient of MBU, NOB, and DCP are 0.000004, 0.195, and 0.163 that implies one unit change in each of those variables leads to 0.000004 percent, 0.195 percent, and 0.163 percent positively change in RGDP. Likewise, the coefficient of DAs 0.000 does not cause any change in RGDP. On the other hand, the regression coefficient of INF -1.379 shows the one unit increase in INF leads to 1.379 percent decrease in RGDP. It also influences the other variables then the overall relationship of variables of interest we have considered.

Table 3 also shows the value of R^2 is 0.933. It indicates that 93.3% of RGDP variation is explained by the regressors—BBF, MBU, DAs, NOB, INF, and DCP. Similarly, 0.528 value of adjusted R^2 concludes that the fiscal inclusions indicators explain 52.8% of the change in real GDP. The p-value of one-way ANOVA coefficient (F = 2.306) is less than 5% level of significant reveals that there is no significant relationship between explanatory and dependent variables.

Conclusion

The purpose of this study is to evaluate the nexus between financial inclusion and economic growth of Nepal by using data only from mid-July 2014 to mid-July 2021. In this study, economic growth (RGDP) proxied by annual growth rate of real GDP is the dependent variable, whereas branch of BBF; DAs; MBU; NOB; DCP are taken as the explanatory variables as proxied to financial inclusion in Nepal. INF, that influences the anticipated relationship, is taken as the control variable in this model.

The study elucidates that the financial deepening and inclusion indicators—the number of deposit accounts; number of loan accounts; mobile banking and internet banking service users; number of ATMs, debit cards, and credit cards; the number of debit and credit cards per lakh population; the number of the branches of banks and financial institution are increasing year by year. The number of deposit account per lakh population and number of ATMs per lakh

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population are in the increasing trend in recent years. However, number of branches per lakh population and population per bank branch are falling in the resent years. The study concludes that the financial deepening, access, penetration, and thus financial inclusion are increasing trend in Nepal.

The study reveals that there is positive relationship between RGDP and number of branches per lakh population (NOB). However, all other variables—BBF, INF, MBU, DAs, DCP have inverse relationship between RGDP. The study, thus, elucidates that there is strong association between all the variables of interest except DCP with RGDP that confirms the financial penetration is not satisfactory in Nepal. The study also concurs that there is no significant relationship between the independent variables of fiscal inclusion with RGDP. This study also demonstrates the MBU, NOB, and DCP have positive impact on RGDP but not remarkable. Conversely, branch of banks and financial institution has negative impact on RGDP. On the other hand, DAs cannot cause any change in RGDP. It is also shown that INF also negatively impact on RGDP. Thus, the overall analysis of this study concludes that there is no positively significant impact of financial inclusion on economic growth of Nepal. But there is strong evidence to support the view that financial inclusion is the backbone of the Nepali economy. Subsequently, the policy makers and government of Nepal should have needed huge policy endeavor to increase financial access, financial penetration, widening the productive financial services, and financial literacy to accelerator economic growth of Nepal.

References

Albiman, M. M., & Bakar, H. O. (2021). The role of financial inclusion on economic growth in Sub Saharan African (SSA) region. *Athens Journal of Business and Economics, 8,* 1-21. https://doi.org/10.30958/ajbe.X-Y-Z

Ali, N., Fatima, K., & Ahmed, J. (2019). Impact of financial inclusion on economic growth in Pakistan. *Journal of Managerial Sciences, 13*(3), 166-174. https://www.qurtuba.edu.pk/jms/default_files/JMS/13_3/18.pdf

Beck, T., Levine, R., & Loyaza, N. (2000). Finance and the sources of growth. *Journal of Financial Economics, 58*(1-2), 261-300, https://doi.org/10.1016/S0304-405X(00)00072-6.

Cicchiello, A. F., Kazemikhasragh, A., Monferrá, S., & Girón, A. (2021). Financial inclusion and development in the least developed countries in Asia and Africa. *Journal of Innovation and Entrepreneurship, 10*(1), 1-13. https://doi.org/10.1186/s13731-021-00190-4

Demetriades, P. O., & Hussein, K. A. (1996). Does financial development cause economic growth? Timeseries evidence from 16 countries. *Journal of Development Economics, 51*(2), 387-411. https://doi.org/10.1016/S0304-3878(96)00421-X

Dhungana, B. R. (2014). Does financial institution support for economic growth? A case of Nepal. *Economic Literature, XII*, 56-68. https://doi.org/10.3126/el.v12i0.14888

Dhungana, B. R., & Kumar, P. (2015). The status of financial inclusion in Nepal. *Pacific Business Review International, 7*(8), 51-59. http://www.pbr.co.in/2015/2015_month/February/7.pdf

Goldsmith, R. W. (1969). *Financial structure and development.* Yale University Press.

Government of Nepal. (2021). *Economic survey 2020/2021.* https://mof.gov.np/site/publication-detail/3105

Gurley, J. G., & Shaw, E. S. (1967). Financial structure and economic development. *Economic Development and Cultural Change, 15*(3), 257-268. www.jstor.org/stable/1152277

Kharel, R. S., & Pokhrel, D. R. (2012). Does Nepal's financial structure matter for economic growth? *Economic Review, 24*(2), 31-46. https://www.nrb.org.np/contents/uploads/2019/12/NRB_Economic_Review-Vol_24-2_October_20123_Does_Nepals_Financial_Structure_Matter_for_Economic_GrowthRam_Sharan_Kharel_Ph.D._and_Dilli_Ram_Pokhrel_Ph.D.pdf

Kim, D. W., Yu, J. S., & Hassan, M. K. (2018). Financial inclusion and economic growth in OIC countries. *Research in International Business and Finance, 43*, 1-14. https://doi.org/10.1016/j.ribaf.2017.07.178

King, R. G., & Levine, R. (1993b). Finance and growth: Schumpeter might be right. *The Quarterly Journal of Economics, 108*(3), 717-737. https://doi.org/10.2307/2118406

Kodan, A. S., & Chhikara, K. S. (2013). A theoretical and quantitative analysis of financial inclusion and economic growth. *Management and Labour Studies, 38*(1&2), 103–133. https://doi.org/10.1177/0258042X13498009

McKinnon, R. I. (1973). *Money and capital in economic development.* Brookings Institution.

Pant, B. (2016). Financial inclusion in Nepal: Policy review and prescriptions. *NRB Economic Review, 28*(2), 1-18. https://www.nrb.org.np/contents/uploads/2019/12/2-1.pdf

Paudel, R. C., & Acharya, C. P. (2020). Financial development and economic growth: Evidence from Nepal. *NRB Economic Review, 32*(1), 15-36. https://www.nrb.org.np/contents/uploads/2020/07/Financial-Development-and-Economic-Growth-Evidence-from-Nepal.pdf

Perera, N., & Paudel, R. (2009). Financial development and economic growth in Sri Lanka. *Applied Econometrics and International Development, 9*(1), 157-164. https://www.usc.es/economet/journals1/aeid/aeid9114.pdf

Sarma, M., & Pais, J. (2011). Financial inclusion and development. *Journal of International Development, 23*(5), 613-628. https://doi.org/10.1002/jid.1698

Schumpeter, J. A. (1934). *The theory of economic development-An inquiry into profits, capital, credit, interest, and the business cycle* (R. Opie, Trans.). Harvard University Press.

Sethi, D., & Acharya, D. (2018). Financial inclusion and economic growth linkage: Some cross country evidence. *Journal of Financial Economic Policy, 10*(3), 369-385. https://doi.org/10.1108/JFEP-11-2016-0073

Sharma, D. (2016). Nexus between financial inclusion and economic growth: Evidence from the emerging Indian economy. *Journal of Financial Economic Policy, 8*(1), 13-36. https://doi.org/10.1108/JFEP-01-2015-0004

Shaw, E. (1973). *Financial deepening in economic development.* Oxford University Press.

Singh, D., & Stakic, N. (2021). Financial inclusion and economic growth nexus: Evidence from SAARC countries. *South Asia Research, 41*(2), 238-258. https://doi.org/10.1177/0262728020964605

Subrahmanyam, G., & Acharya, D. (2017). Financial inclusion fosters growth: Simple multiplier and 'AK' growth model analysis. *Universal Journal of Accounting and Finance, 5*(3), 55-59. https://doi.org/10.13189/ujaf.2017.050301.

Suidarma, I. (2019). The nexus between financial inclusion and economic growth in ASEAN. *Journal of Economics and Policy, 12*(2), 267-281. https://doi.orG/10.15294/jejak.v12i2.18747

Thathsarani, U., Wei, J., & Samaraweera, G. (2021). Financial inclusion's role in economic growth and human capital in South Asia: An econometric approach. *Sustainability, 13*(8), 4303. https://doi.org/10.3390/su13084303

Van, L. T. H., Vo, A. T., Nguyen, N. T., & Vo, D. H. (2021). Financial inclusion and economic growth: International evidence. *Emerging Markets Finance and Trade, 57*(1), 239-263. https://doi.org/10.1080/1540496X.2019.1697672

World Bank (2019). Financial inclusion global initiative (FIGI). https://www.worldbank.org/en/topic/financialinclusion/brief/figi