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Bridging Gaps: Financial inclusion as a spark for MENA's economic development

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***Abstract*---**Financial inclusion is becoming a key component of development strategies for economies all over the world. It encapsulates the idea of providing financial services and goods to all members of society, irrespective of their location or income level. Using annual data from 2000 to 2020 and the PMG estimator, this study provides a comparative examination of the short- and long-term effects of Financial Inclusion (FI) on Economic Growth in Middle Eastern and North African countries. The findings indicated that in the first model, the error correction coefficient was negative and significant (-0.964), whereas in the second model, it was -0.933. This implies that FI and Economic Growth are integrated over the long term. The PMG estimations demonstrated that the financial sectors of the Middle Eastern countries are more dynamic and stable than those in North Africa as a result of the establishment of new loan facilities. Therefore, financial inclusion enhances economic progress in the Middle East. Conversely, the scarcity, lack of use and accessibility of

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banking and financial services are the main reasons behind the grossly distorted economic growth in North Africa.

Keywords---Economic Growth, Financial Inclusion, Middle East and North African countries.

Introduction

In a world where information is not always reliable, it has become evident why common information and transaction costs exist. A significant increase in these costs may prevent some transactions from ever occurring. Thus, the creation of financial intermediaries was a necessary response to facilitate these types of transactions, reduce financial frictions, and lower associated costs and market imperfections. (Emara & El Said, 2021)

In an economy, financial intermediaries act as a bridge between surplus units—those who have extra money—and deficit units—those who lack it. They serve as a link between people who are looking for funding for a variety of reasons, including investment, consumption, or business expansion, and those who have money to save or invest. Within this particular setting, a wide range of organizations are considered financial intermediaries, such as credit unions, banks, insurance firms, microfinance institutions, and non-bank financial institutions.

Furthermore, a lot of individuals around the world do not have access to fundamental financial services like credit, insurance, savings accounts, or payment processing. Regulatory obstacles, a lack of physical infrastructure, and low financial awareness are frequently the causes of this. People and communities cannot fully engage in the economy without access to these services, which can result in financial marginalization, social isolation, and increased poverty. This study aims to investigate the impact of financial inclusion, particularly financial access, on a subset of the Middle East and North Africa (MENA) region, which is known for having limited financial access.

Giving people and companies access to financial services and products is known as financial inclusion. This covers everyone's free or inexpensive use of financial services, as well as access to bank accounts, credit, insurance, and other financial tools. (Ozili, 2021). Therefore, promoting financial inclusion remains a critical policy objective for governments and financial institutions. Where it has become a major tool for economic development policies worldwide (Park, C. Y., & Mercado Jr, R. , 2018) . Over the past 20 years, financial inclusion has drawn the attention of numerous scholars and decision-makers as a possible source of economic advantages. From a research perspective, the study started out in the literature in the early 1990s and found that the supply of generally more efficient financial services had favorable micro- and macroeconomic implications (Barajas & et al, 2020) .Thus, a crucial query that must be answered in this situation:
Does the MENA region's financial inclusion help the region's economy thrive during the period 2000 to 2020?

1. Literature Review

This section defines financial inclusion and examines its potential effects on the economic growth of the Middle East and North Africa (MENA) region, drawing on previous research findings.

1.1. The Concept of Financial Inclusion

Although there have been many proposals for what constitutes financial inclusion, the World Bank defines it as "the capacity of individuals and organizations to obtain pertinent and fairly priced financial products and services that fulfill their requirements - transactions, payments, savings, credit, and insurance - provided in an ethical and sustainable manner." For the authors (Demirgüç-Kunt, A., & Klapper, L. F., 2012) , Is the number of adults who own individual or joint accounts in official financial institutions. (Amidžic, G., Massara, M. A., & Mialou, A. , 2014) defines as "an economic state where individuals and businesses do not deny access to basic financial services based on motives other than efficiency criteria." This is a more thorough explanation." As per (Babajide, A. A., Adegboye, F. B., & Omankhanlen, A. E., 2015) , " A process that marks the improvement of the quantity, quality, and efficiency of financial intermediary services thereby fostering opportunities, fortifying economies, and enhancing living standards". Financial inclusion, according to (Kim, 2016) , is the practice of financially excluded people, primarily those with low incomes, using informal financial services as opposed to using formal ways. According to (Rangarajan, 2008) The process of offering affordable credit and banking services to a sizable portion of the impoverished and low-income populace is known as financial inclusion. Together with facilities for savings, loans, insurance, payments, and remittances, the official financial system also offers financial counseling and advising services. Unrestricted access to public goods and services is a hallmark of any prosperous and open society. Since banking and payment services are comparable to public goods, financial inclusion should be interpreted as the equitable distribution of these services to all members of society.

Figure 1: Financial inclusion
Source: Adapted from (Rangarajan, 2008)

Empirical Review

One of the most crucial topics is the financial inclusion issue. But there is still a dearth of research on this subject to properly understand all facets of it, especially when it comes to how financial inclusion affects economic growth in MENA nations. Consequently, more study is required to examine the effects of the factors influencing financial inclusion. (Ozili, P. K., Lay, S. H., & Syed, A. A., 2023) Researchers looked at how financial inclusion affected economic growth in both secular and religious nations in this report.Using the methodology of least squares regression estimate, data from 2006 to 2020 . The study's findings indicated that expanding bank branches and boosting Internet usage are two ways to increase financial inclusion, which will help secular nations' economies flourish. The researchers also discovered that the opening of more bank branches and the reduction of poverty both considerably boost economic growth in nations with strong religious traditions. (Adedokun & et al, 2022)Using the Arellano–Bover/Blundell–Bond GMM and Granger causality, this study looked at the link between financial inclusion and economic growth in 41 Sub-Saharan African nations in the SSA region from 2004 to 2019. The study found that financial inclusion has a favorable impact on SSA's economic growth and suggests changing the financial system's laws and practices to promote sustainability and economic progress. (Ezzahid, E., & Elouaourti, Z. , 2022); This study uses a panel data regression on a database made up of 33 African nations from 2004 to 2019 to examine how financial inclusion affects investment and economic growth. The findings demonstrated that financial inclusion has a long-term, considerable positive influence on investment and economic growth in Africa. (Chinoda, T., & Mashamba, T., 2021), This study intends to investigate the relationship among bank competitiveness, financial inclusion, and economic growth in Africa. The PMG/ARDL model was used in this study between 2004 and 2018. for twenty nations in Africa. The study discovered a strong correlation between long-term economic growth and financial inclusion. However, economic expansion dramatically decreases financial inclusion in the short term. Additionally, it is discovered that over time, bank competition diminishes financial inclusion. According to (Erlando, A., Riyanto, F. D., & Masakazu, S. , 2020), This study uses empirical analysis to examine how financial inclusion affects income inequality, poverty reduction, and economic growth in Eastern Indonesia. Using the VAR model with Toda-Yamamoto causation. They discovered a negative correlation between poverty and inequality and a positive correlation between financial inclusion and economic growth. (Huang, Y., & Zhang, Y. , 2020) Using province-level balanced panel data from China covering the years 1985–2013, this research investigates the short- and long-term effects of financial inclusion on the income inequality between urban and rural areas using panel cointegration techniques. The findings provided solid evidence that, although it widens the income gap in the short term, financial inclusion reduces urban–rural income inequality over the long term. Curiously, we find that financial availability and accessibility reduce urban-rural income inequality over time but increase it in the short term in the tests that follow for each sub-IFI indicator. The researcher (Khandare, 2019), Using the financial inclusion index, this study attempts to quantify the financial inclusion of the BRICS nations between 2005 and 2014. The Financial Services Usage Index (FSUI), which has four factors, and the Financial Services Availability Index (FSAI), which has six variables, are used to measure the Index

of Financial Inclusion (IFI). The study found that, with the exception of China, the BRICS countries' financial inclusion is not very noteworthy. . (Sethi, D., & Acharya, D., 2018) investigated the effect of financial inclusion on the economic growth of 31 developed and developing nations. The empirical results show that financial inclusion and economic growth have a long-term link and are causally related in both directions. (Sharma, 2016), examines the relationship between the several facets of financial inclusion and economic expansion in India, a developing market, from 2004 to 2013. The focus is on three primary aspects of financial inclusion: the penetration of banks, the accessibility of banking services, and the utilization of banking services (deposits). The study discovers a favorable relationship between many aspects of financial inclusion and economic growth. Based on Granger causality analysis, the empirical findings demonstrate that there is a unidirectional causal relationship between GDP and the number of deposit/loan accounts, and a bidirectional causal relationship between geographic outreach and economic development. (Nkwede, 2015), Analysis was done using data on financial inclusion that was extrapolated from Nigeria and covered the years 1981–2013 in order to investigate the relationship between financial inclusion and the expansion of the African economy. To determine the variables' respective contributions, multiple regression models utilizing the ordinary least squares method were used. The findings indicate that, across the examined period, financial inclusion significantly hampered the expansion of the Nigerian economy, is greatly distorted by the lack of banking and financial services, their accessibility issues, and the country's underutilization of these services.

2- Data and Methodology

2.1- Data

The model for the study is therefore defined in order to account for the impacts of the role of financial inclusion in economic growth in the Middle East and North African nations (MENA):

$$GDP_{it} = \beta_0 + \beta_1 ATM_{it} + \beta_2 CBB_{it} + \beta_3 DCB_{it} + \beta_4 BCB_{it} + \varepsilon_{it} \ldots\ldots (1)$$

Where β0 is the intercept. β1, β2, …… β4 respectively are the estimation coefficients to be estimated. It is the error term. Subscripts i and t denote country and year (i = 1, 2,3; t = 1, 2,..., 21). The definitions of variables are presented in Table.

Table 1: Definitions and data sources

Variable	Symbol	Measurement	Source
Economic Growth	GDP	GDP growth (annual %)	WDI
Automated Teller Machines	ATM	Automated teller machines (per 1000 adults)	WDI
Commercial Bank Branches	CBB	No. of Bank Branches (per 1000 adults)	WDI
Depositors with Commercial Banks	DCB	Domestic deposit (as % of GDP)	FRED
Borrowers from Commercial Banks	BCB	Private Credit by Deposit Money Banks and Other Financial	FRED

		Institutions (as % of GDP)	

2.2 Model Specification

To investigate the relationship between Determinants Financial Inclusion and Economic Growth, this study employs 2 Models of Panel data for 10 from MENA countries. Divided into two parts, the first group includes five countries from North Africa (Algeria DZA, Morocco MAR, Egypt EGY, Libya LYB, Tunisia TUN), and the second group includes five countries from the Middle East (Qatar QAT, Saudi Arabia SAU, Kuwait KWT, United Arab Emirates ARE and Turkey TUR) over the 2000–2020 period. Data are collected from the World Bank (2023) and (FRED) Federal Reserve Bank (2023). The figure below shows the impact of financial inclusion in the MENA countries on economic growth:

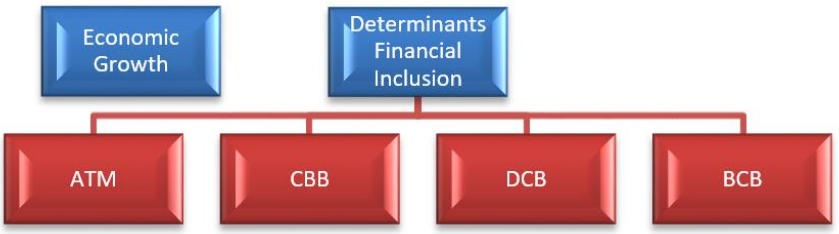

Figure.2: The impact of financial inclusion on economic growth

The impact of the determinants of financial inclusion on economic growth is examined in this paper using a variety of pertinent methodologies. The estimation techniques used include the IPS test for stationarity, the PMG and MG estimators for long-run estimates and short-run parameters, and the Hausman Test for comparing the various estimators.

3- Empirical Results and Discussion

3.1 Preliminary Analysis

3.1.1. Descriptive Analysis of Variables

The variables' descriptive statistics for two models covering the years 2000–2020 are shown below.

Table 2. Descriptive Statistics

Model (01)						Model (02)				
Var	Obs	Mean	Std, Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
GDP	105	3.08	11.49	-50.33	86.82	104	4.60	5.82	-8.85	26.170
ATM	83	13.01	9.25	1.27	33.85	85	55.96	14.77	18.29	83.95
CBB	83	11.65	7.03	3.8	24.89	84	13.143	3.728	7.19	21.49
DCB	104	64.15	32.07	18.89	242.09	99	53.90	22.074	16.13	110.00
BCB	104	43.40	26.75	5.94	97.73	100	56.70	22.32	14.01	136.56

Source: Authors' calculations

From the above table that the first model's highest average value, which includes North African countries, belongs to depositors with commercial banks (DCB) at 64.15, while the highest value of the average in the second model, which includes Middle Eastern countries, belongs to Borrowers from Commercial Banks (BCB) at 56.70. This is due to the presence of greater economic diversification and there are multiple investment and business opportunities that require financing with credit facilities granted by banks in Middle Eastern countries. Also, the average of ATMs in the first model, 13.01, is very low compared to the second model, 55.96. This is due to the development of the financial infrastructure that has contributed to individuals' access to financial services easily.

3.1.2. Analysis of Correlation

In the following, we present Analysis of Correlation of the variables for two models over the period 2000-2020.

Table 03. Correlation matrix

Model (01)					
VAR	GDP	ATM	CBB	DCB	BCB
GDP	1.0000				
ATM	-0.0755	1.0000			
CBB	-0.0555	0.7898	1.0000		
DCB	-0.1207	0.0515	0.2125	1.0000	
BCB	-0.0960	0.8104	0.8457	0.3040	1.0000
Model (02)					
VAR	GDP	ATM	CBB	DCB	BCB
GDP	1.0000				
ATM	-0.2448	1.0000			
CBB	0.3597	0.1428	1.0000		
DCB	-0.3375	0.2362	0.0761	1.0000	
BCB	-0.5588	0.4069	-0.1941	0.7562	1.0000

Source: Authors' calculations

According to the results of the table, we found a strong and positive relationship between Commercial Bank Branches (CBB) and Borrowers from Commercial Banks (BCB) in which the correlation coefficient estimated at (0.7898), Also (CBB) and Automated teller machines (ATM), in which the correlation coefficient was estimated at (0.7898), for the first model. And in the second model we found a strong and positive relationship between Depositors with Commercial Banks (DCB) and (BCB) in which the correlation coefficient estimated at (0.7562).

3.1.3 Results of Unit Root Test

We used IPS test to investigate into the stationary and figure out the integration level of the chosen variables.

H0: Panel data has unit root

H1: Panel data has not unit root

The testing findings shown in Table 4 indicate that, in both models, other variables are stationary at first difference, but only GDP (1%) is stationary at level form.

Table. 4: Unit root test

At Level (Model 01)					
	VAR	**GDP**	**ATM**	**CBB**	**DCB** **BCB**
Trend	*prob.*	(0.000)	(0.716)	(0.837)	(0.012) (0.483)
Demean	*prob.*	(0.000)	(0.788)	(0.736)	(0.440) (0.542)
At First Difference					
Trend	*prob.*	/	(0.000)	(0.000)	(0.000) (0.000)
Demean	*prob.*	/	(0.000)	(0.003)	(0.000) (0.000)
Order of integration		I(0)	I(1)	I(1)	I(1) I(1)
At Level (Model 02)					
	VAR	**GDP**	**ATM**	**CBB**	**DCB** **BCB**
Trend	*prob.*	(0.001)	(0.974)	(0.803)	(0.077) (0.412)
Demean	*prob.*	(0.000)	(0.406)	(0.082)	(0.393) (0.999)
At First Difference					
Trend	*prob.*	/	(0.001)	(0.000)	(0.000) (0.001)
Demean	*prob.*	/	(0.000)	(0.000)	(0.000) (0.012)
Order of integration		I(0)	I(1)	I(1)	I(1) I(1)

Source: Authors' calculations

3.2 Estimation Results

3.2.1 PMG and MG estimators

We will estimate the Mean Group (MG), which was introduced in 1995, and the Pooled Mean Group (PMG), which was introduced in 1999, in order to examine the connection between financial inclusion and economic growth. (Masih & Majid, 2013)**.**

Table. 5: PMG and MG Estimators

dependent variable: GDP **N= 10 (05 countries of each model)** **T= 2000-2020**							
Model(01)				**Model (02)**			
PMG Estimator		**MG Estimator**		**PMG Estimator**		**MG Estimator**	
Var	**coef**	**Var**	**coef**	**Var**	**coef**	**Var**	**coef**
long run		**long run**		**long run**		**long run**	
ATM	-0.20**	**ATM**	21.80	**ATM**	-0.03	**ATM**	-0.59
CBB	-0.26	**CBB**	-3.72	**CBB**	1.21*	**CBB**	7.55
DCB	0.05	**DCB**	-0.12	**DCB**	0.18**	**DCB**	-0.009
BCB	0.02	**BCB**	-0.23	**BCB**	-0.27*	**BCB**	-0.34*
short run		**short run**		**short run**		**short run**	
EC	-0.964*	**EC**	-1.09*	**EC**	-0.933*	**EC**	-1.13*
ATM	27.06	**ATM**	-7.35	**ATM**	-0.32	**ATM**	0.24
CBB	1.63	**CBB**	4.21**	**CBB**	-2.27	**CBB**	-4.70
DCB	-0.18	**DCB**	0.10	**DCB**	-0.49*	**DCB**	-0.52
BCB	-0.37	**BCB**	-0.38	**BCB**	0.38*	**BCB**	0.45
_cons	3.44***	**_cons**	-83.93	**_cons**	-1.87	**_cons**	-39.06

*,**,*** The statistical value of t-statistic, meaning that the parameter is significant, whether at the level of 1%, 5%, or 10%, respectively.
Source: Authors' calculations

For the first model, the MG (-1.09) and PMG (-0.96) error correction coefficients are both negative and statistically significant at 1% for all nations. Additionally, the estimators MG (-1.13) and PMG (-0.93) in the second model show that the dependent variable and the independent variables have a co-integration relationship.

3.2.2 Hausman test

In order to make the comparison, we will use the 1978 Hausman test (Chu & Sek, 2014). As a result, for this test, the alternative hypothesis and the null hypothesis have the following format:

H0: PMG is the appropriate model;
H1: The MG model is the appropriate model.

Table. 6: Hausman test

Hausman test	
Model (01)	**Model (02)**
Prob>chi2 = 0.2248	Prob>chi2 = 0.467

Source: Authors' calculations

The probability is greater than 5% and 10% significance level. This means accepting the null hypothesis (the PMG estimator is the appropriate model).

3.2.3 PMG estimator for each country (short run regression)

The long-run parameter estimates and the averaged short-run parameter estimates are the default outcomes of the PMG option. Furthermore A two-equation model comprising the normalized cointegrating vector and the short-run dynamic coefficients presents the PMG estimations. (Edward & W, 2007)

Table. 7: PMG estimator for each country (short run regression)

Model (01)					
Var	**DZA**	**LYB**	**EGY**	**MAR**	**TUN**
EC	-0.47**	-1.14*	-0.82*	-1.34*	-1.02*
ATM	3.00*	130.19*	1.80*	-0.17	0.48
CBB	-5.51	7.19	1.71*	-0.144	4.94*
DCB	-0.39	-0.13	0-.16**	-0.72*	0.50
BCB	-0.106	-1.32**	0.201	0.027	-0.65*
_cons	-0.16	2.07	0.68	11.29*	3.31
Model (02)					
Var	ARE	QAT	SAU	TUR	KWT
EC	-0.98*	0.92*	-1.21*	-0.52*	-1.01*
ATM	-0.15***	0.72	0.10	-0.18	0.62**
CBB	0.47	0.31	-8.36	-3.09***	-0.61
DCB	-0.20**	0.19	-0.43	-0.83***	-0.79*
BCB	0.09	0.19	0.20	0.76*	0.66*
_cons	-1.67	2.44	7.26	-5.04	-7.45

*, **, *** The statistical value of t-statistic, meaning that the parameter is significant, whether At the level of 1%, 5%, or 10%, respectively.
Source: Authors' calculations

3.3 Discussion

To investigates the link between financial inclusion and economic growth in the Middle East and North African countries. Five countries from North Africa (Algeria, Morocco, Egypt, Libya, and Tunisia) and five countries from the Middle East (Qatar, Saudi Arabia, Kuwait, United Arab Emirates, and Turkey) were

selected for the study using panel data from 2000-2020. The empirical findings of the study can be summed up as follows:

Automated Teller Machine (ATM) ratios for Algeria, EGYPT, and Kuwait indicate positive coefficients of 3, 0.826, and 0.62, respectively. This suggests that enhancing financial inclusion may greatly benefit from financial institutions' capacity to offer online, mobile, and ATM banking services to their clientele.

Commercial Bank Branches (CBB) and the real gross domestic product growth rate have a strong positive correlation. The real gross domestic product of Egypt will rise by 1.711 percent and that of Tunisia by 4.944 percent on average for every one percent growth in Commercial Bank Branches to the real gross domestic product. We discovered that the effect of CBB on Economic Growth is 1.21 in Middle Eastern countries. Thus, the more bank branches there are, particularly in rural regions, the more bankable adults there will be to contribute to the economy monetarily.

The actual gross domestic product (GDP) is significantly impacted negatively by the ratio of borrowers to commercial banks (BCB). For Libya and Tunisia, a one percent rise in the ratio of borrowers to commercial banks results in a real GDP drop of approximately 1.32 percent and 0.653 percent, respectively. These results are consistent with research demonstrating that, as a result of a deficient financial system and limited access to financial services, financial inclusion has a negative or minimal impact on growth. In the meanwhile, to stimulate growth at the national and societal levels, governments should support financial services being accessible to a large portion of the population. On the other hand, we discovered a positive effect for the Middle Eastern countries, with 0.76 percent for Kuwait and 0.66 percent for Turkey.

The regression results show that deposits of branches (Deposit Money Banks) (DCB) have a significant negative impact on the gross domestic product (GDP) of Algeria (-0.396), Morocco (-0.728), United Arab Emirates (-0.20), Kuwait (-0.79), and Turkey (-0.83) in the short run. This means that the financial exclusion of a large proportion of adult citizens in rural areas in terms of availability and usage of financial services through deposit money bank branches has a significant negative impact on economic growth. However, in the long run, we found a positive effect of DCB on GDP, with a value of 0.18 for Middle Eastern countries.

Conclusion

Financial inclusion is a vital first step toward financial development since it provides financial services to the great majority of society's members. As societal financial inclusion rises, more people have access to financial services and integrate into the financial system, which is seen as the cornerstone of modern economies.

Estimates suggest that in terms of economic development, Middle Eastern economies gain more from financial inclusion than North African ones. This is primarily due to the Middle East's availability of more recent loan facilities. in addition to a more vibrant and steady banking industry.

Unfortunately, it's challenging for the MENA region as a whole to achieve full financial inclusion and link it to economic growth due to problems like the digital divide and insufficient support for small and medium-sized enterprises and underprivileged communities. Governments, financial institutions, and civil society must work together to enhance the financial infrastructure, enact legislation that support inclusive finance, and broaden financial inclusion. This will promote economic growth and sustainable development in the region.

Bibliography

1. Adedokun, M. W., & et al. (2022). An Investigation of the Impact of Financial Inclusion on Economic Growth: Evidence from African Countries. *Asian Economic and Financial Review, 12*(10), 864-885.
2. Amidžic, G., Massara, M. A., & Mialou, A. . (2014). Assessing countries' financial inclusion standing-A new composite index. *International Monetary Fund*.
3. Babajide, A. A., Adegboye, F. B., & Omankhanlen, A. E. (2015). Financial inclusion and economic growth in Nigeria. *International Journal of economics and financial issues, 5*(3), 629-637.
4. Barajas, A., & et al. (2020). Financial Inclusion: What Have We Learned So Far? What Do We Have to Learn? *International Monetary Fund, 2020*(157).
5. Chinoda, T., & Mashamba, T. (2021). Financial inclusion, bank competition and economic growth in Africa. *Journal of Economic and Financial Sciences, 14*(1).
6. Chu, & Sek. (2014). Investigating "the Relationship between Inflation and Growth: Evidence From Panel ARDL Model. *AIP Publishing*.
7. Demirgüç-Kunt, A., & Klapper, L. F. (2012). Measuring financial inclusion: The global findex database. *World bank policy research working paper*.
8. Dumitrescu, E. I., & Hurlin, C. (2012). Testing for Granger non-causality in heterogeneous panels. *Economic modelling, 29*(4), 1450-1460.
9. Edward, F., & W, M. (2007). *Estimation of nonstationary heterogeneous panels*. The Stata Journal 7.
10. Emara, N., & El Said, A. (2021). Financial Inclusion and Economic Growth: The Role of Governance in Selected MENA Countries. *International Review of Economics & Finance, 75*.
11. Erlando, A., Riyanto, F. D., & Masakazu, S. . (2020). Financial inclusion, economic growth, and poverty alleviation: evidence from eastern Indonesia. *Heliyon, 6*(10).
12. Ezzahid, E., & Elouaourti, Z. . (2022). Financial inclusion, financial frictions, and economic growth: Evidence from Africa. *Journal of African Business, 23*(03), 731-756.
13. Huang, Y., & Zhang, Y. . (2020). Financial inclusion and urban–rural income inequality: Long-run and short-run relationships. *Emerging Markets Finance and Trade,, 56*(02), 457-471.
14. Khandare, V. B. (2019). Financial Inclusion: Empirical study of brics countries. *International Journal of Social Science and Economic Research, , 4*(5), 3319-3334.
15. Kim, J. H. (2016). A study on the effect of financial inclusion on the relationship between income inequality and economic growth. *Emerging Markets Finance and Trade, 52*(2), 498-512.

16. Masih, & Majid, A. (2013). Stock Price and Industrial Production in Developing Countries: A Dynamic Heterogeneous Panel Analysis. *Munich Personal repec Archive*.
17. Nizam, R., Karim, Z. A., Rahman, A. A., & Sarmidi, T. (2020). Financial inclusiveness and economic growth: New evidence using a threshold regression analysis. *Economic research-Ekonomska istraživanja, 33*(1), 1465-1484.
18. Nkwede, F. (2015). Financial inclusion and economic growth in Africa: Insight from Nigeria. *European journal of business and management, 7*(35), 71-80.
19. Ozili, P. K. (2021). Financial inclusion research around the world: A review. *In Forum for social economics, 50*(4), pp. 457-479.
20. Ozili, P. K., Lay, S. H., & Syed, A. A. (2023). . Impact of financial inclusion on economic growth in secular and religious countries. . *Journal of Financial Regulation and Compliance.*, 1-43.
21. Park, C. Y., & Mercado Jr, R. . (2018). Financial inclusion, poverty, and income inequality. *The Singapore Economic Review, 63*(01), 185-206.
22. Rangarajan, C. (2008). *Report of the committee on financial inclusion.* Ministry of Finance, Government of India,.
23. Sethi, D., & Acharya, D. (2018). Financial inclusion and economic growth linkage: Some cross country evidence. *Journal of Financial Economic Policy, 10*(3), 369–385.
24. Sethi, D., & Sethy, S. K. (2018). Financial inclusion matters for economic growth in India: Some evidence from cointegration analysis. *International Journal of Social Economics, 46*(1), 132–151.
25. Sharma, D. (2016). Nexus between financial inclusion and economic growth: Evidence from the emerging Indian economy. *Journal of financial economic policy*, 13-36.
26. Singh, B. P., Kumari, A., Sharma, T., & Malhotra, A. . (2021). Financial inclusion, Pradhan Mantri Jan Dhan Yojna scheme and economic growth: evidence from Indian states. *Economic Notes, 50*(3), 1-14.
27. Van, L. T. H., Vo, A. T., Nguyen, N. T., & Vo, D. H. . (2021). Financial inclusion and economic growth: An international evidence. . *Emerging Markets Finance and Trade, 57*(01), 239-263.