

# Impact of Financial Inclusion on Human Development Index: Special Reference to BRICS Countries

Thakur Dev Pandey<sup>1</sup>

<sup>1</sup> *Marwadi University Rajkot (Gujarat, India)*

Corresponding author: Thakur Dev Pandey (thakurdev009@gmail.com)

---

Academic editor: M. Sheresheva | Received 13 October 2022 | Accepted 31 January 2023 | Published 30 June 2023

**Citation:** Thakur Dev Pandey (2023) Impact of Financial Inclusion on Human Development Index: Special Reference to BRICS Countries. *BRICS Journal of Economics* 4(2) 209–223. <https://doi.org/10.3897/brics-econ.4.e96288>

---

## Abstract

The BRICS countries are frequently referred to as “emerging economies”; they account for a sizable proportion of the global population and face issues such as poverty, income inequality, slow economic growth, gender inequality, and high unemployment rates. Policy measures are currently being considered and implemented in response to these difficulties. Previous studies suggest that greater financial inclusion has a positive effect on such countries’ development, hence its importance as a tool used to deal with the socioeconomic challenges faced by emerging economies. When we talk about “financial inclusion,” we are referring to the ease with which people can access and make use of basic financial services, such as savings accounts, credit cards, and insurance. In this paper, we use data from the Global Findex Database and the World Bank Database to create the Financial Inclusion (Finclusion) Index, which provides a comparative measure of financial access for different nations. The primary purpose of this paper is to evaluate the effect of financial inclusion on HDI in 105 countries; per capita income and gender development are also compared across BRICS countries. The study found that financial inclusion had a significant impact on human development in general and a positive effect on the development of women in particular. The result is valid for the BRICS countries, where financial inclusion has considerably boosted human development and is positively correlated with women empowerment.

## Keywords

HDI, BRICS, Financial Inclusion, Finclusion Index, Gender Development, Human Development.

**JEL:** D14, G5, Z13.

## 1. Introduction

The term BRICs was coined in 2001 by the then-chairman of Goldman Sachs Asset Management, Jim O'Neill, in the work *Building better global economic BRICs*, to address the importance of emerging economies in Asia, Europe, and South America and their impact on the global market (J. O'Neill, 2001). The BRIC group originally consisted of four members, namely Brazil, Russia, India, and China; the fifth, South Africa, was inducted as a permanent member in December 2010 with China's invitation to expand BRICs (Reuters, 2010). The group was renamed BRICS—with the "S" standing for South Africa. The BRICS is an exclusive multilateral organization that promotes economic, political, and cultural cooperation among BRICS nations (BRICS, 2015). BRICS countries are considered the key drivers of the world's economy. As of 2021, the group represented nearly 32 percent of the world's population, and the combined GDP of 24437.61 billion USD is projected to become 39418.9 billion USD by 2027 (A. O'Neill, 2022). However, research literature suggests that the BRICS nations are facing serious socioeconomic challenges, namely poverty, hunger, unemployment, inflation, pollution, political instability, poor medical infrastructure, gender disparity, terrorism, income inequality, and slow economic growth (Javed, 2019; Weisfeld et al., 2012). It is therefore necessary to explore the issues related to these problems in order to find solutions best suited to the economic, political, and social development of all the members of the group. To help the emerging economies address their difficulties and achieve the desirable level of development, the United Nations General Assembly (UNGA) laid down 17 Sustainable Development Goals (SDGs) and 169 targets in 2015, which succeeded the previous Millennium Development Goals (MDGs) of 2000 (SDGF, 2018; UN, 2018). All the member countries and multilateral institutions are guided by the UNGA resolution of 2015 in their attempts to achieve the desired human development goals, at the same time conserving natural resources for future generations. Among the tools for tackling the challenges of emerging nations, financial inclusion was identified as a useful instrument of eliminating the socio-economic problems of poverty, extreme hunger, gender inequality, and low economic growth (Kelkar, 2010; Kuri & Laha, 2011b; Sarma & Pais, 2008; Thakkar, 2014). The UN also recognized financial inclusion as a key enabler of 7 of the 17 Sustainable Development Goals (SDGs) (United Nations, 2015). Financial inclusion is defined as the availability of affordable financial services such as deposits, credit, insurance, and other day-to-day financial transaction facilities to the mass population (Demirgüç-Kunt et al., 2013). The concept of financial inclusion is not a recent development in the field of banking and economics. This concept was first debated in 1873 by the English economist Walter Bagehot in his work *Lombard Street: A Description of the Money Market* (Bagehot, 1873), in which he discussed the importance of financial services was for economic opportunities and development of any nation. Financial inclusion has a significant impact on the growth of human capital, and it influences the quantum of human resources development. This causality, however, is rather complex as we cannot deny that there might be various exogenous factors at work, one reinforcing another. Income inequality and poverty act as

obstacles to human resources development; it has been argued that financial inclusion drastically improves income growth of the poorest quintile, reduces income inequality, and is strongly associated with poverty alleviation, thus positively impacting human development (Beck & Demirguc-Kunt, 2006; Kuri & Laha, 2011a; Pandey et al., 2020). The BRICS nations have implemented measures to increase the coverage of financial services in their region. The systematic approach has led to the penetration of financial services to lower-income groups and the extended coverage has filled the gap of unavailability of financial services in remote locations. (International Monetary Fund & The World Bank, 2013; Jennifer et al., 2016; Pinto et al., 2020; The World Bank, 2013; World Bank Group & The People's Bank of China, 2018).

**1.1. Brazil:** The Banking Correspondents (BCs) Model, which had its origins in the 1970s but saw renewed attention in the 2000s as a result of amendments that broadened the scope of BCs' services and eliminated various restrictions to increase the availability of banking throughout the country, had been instrumental in promoting branchless banking. Therefore, the number of people with bank accounts more than doubled, from 63.7 million in 2000 to 125 million in 2008.

**1.2. Russian Federation:** Nearly a third of the population is underbanked, unbanked, or unserved in the Russian Federation, according to the Alliance for Financial Inclusion (2011). This is explained by unequal access to financial services and low financial literacy. The high cost of banking services and the low profits to be made by opening branches in rural areas were the main factors of this exclusion. Long-term funding from AFI allowed the Ministry of Finance, the Central Bank of Russia, and the Russian Microfinance Center to launch a program in September 2010 in order to promote innovative regulation and monitoring of banking agents and improve access to financial services throughout the country, solving the problem of financial exclusion (AFI, 2012). As a result, the number of financially excluded people in the country had dropped dramatically between 2012 and 2017. (Central Bank of Russia, 2018).

**1.3. India:** In the early 2000s, the Reserve Bank of India (RBI) recognized the issue of financial exclusion. The Reserve Bank of India (RBI) and the Government of India (GOI) have been working to increase banking penetration in their country and to remove obstacles to FI (Gupta, 2011; Joshi, 2011). The Reserve Bank of India has streamlined many banking-related policies to increase financial inclusion. These include Zero Balance Accounts and Overdraft Facility; Oversimplification of Know Your Customer (KYC) and Account Opening Norm; Financial Literacy; Simplification of Branch Authorization; General Credit Cards; Kisan Credit Cards (KCCs); Implementation of Business Facilitators (BFs) and Business Correspondents (BCs); and Expansion of Bancassurance.

**1.4. China:** A disparity in access to banking services between rural and urban areas was noted by the China Banking Regulatory Commission in 2006. While 3,302 villages in China had no bank branches at all, 8,231 villages had only one. This meant that the rural population lived in a financial desert. China's microfinance program "has been implemented as part of the Chinese government's initiative for financial inclusion of low-income and rural people" (Xiaoshan, 2006). This and other initiatives

made financial services accessible to its citizens providing bank services for farmers, their families and small businesses, implementing rural credit cooperative reforms and introducing new microfinance vehicles (Gong & Zhou, 2009).

**1.5. South Africa:** The high cost of banking had been considered a major cause of South Africa’s high rate of financial exclusion. That is why six million Mzansi accounts were opened in the country of 32 million people after the Central Bank of Africa had urged five major banks to offer the no-frills “Mazansi Accounts” to its customers with five free transactions a month (2009 reported by the non-profit FinMark Trust).

**2. Data and Research Methodology**

**2.1. Data Source:** The present study is based on secondary data from Global Findex Database 2021, Women Business and Law Index 2021, World Bank, and reports from RBI during the period 2018-2021. Availability of data for key observations in the Global Findex Database 2021 report allowed the authors to select for the analysis a total of 105 countries including the BRICS countries.<sup>1</sup>

**2.1.1. Variables:** For Human Development, Human Development Index (HDI) 2021 was selected; for Women’s/ Gender Development, Gender Development Index (GDI) 2021; for national income, Per Capita Gross National Income (PGNI) 2021; for financial inclusion, Finclusion Index is constructed using Global Findex Database 2021. The study also used Women Business and Law (Index 2021, total literacy rate, GDP per capita PPP (at 2017 US\$), and Human Capital Index (HCI) 2021.

**2.2. Objectives:**

- To assess the impact of National Income, Financial Inclusion, and Gender Empowerment on Human Development for selected 105 countries and BRICS.
- To assess the impact of Financial Inclusion, National Income, and Human Development on Gender Empowerment for selected 105 countries and BRICS.

**2.3. Financial Inclusion (Finclusion) Index Construction method:** A Finclusion Index is constructed using Human Development Report (HDR) 2010 methodology (Klugman et al., 2011).

Each dimension  $D_{ij}$  contains n number of subdimension  $\delta_{i,j}$ .

$$D_i = (\delta_{1,j}, \delta_{2,j}, \delta_{3,j}, \dots, \delta_{n,j})$$

We standardize each dimension  $\delta_{ij}$  so that each dimension’s value lies between 0 and 1 as:

$$\delta_{ij} = \frac{Observed - Minimum}{Maximum - Minimum}$$

---

<sup>1</sup> The data underpinning the analysis reported in this paper are deposited at “Finclusion Index\_105 Countries” Mendeley Data, doi:10.17632/j7cjs4kx3.1

where,

i = dimension number

$$j = \text{sub-dimension number } D_i = \frac{\sum_{i,j=1}^n \delta_{i,j}}{n}$$

The selection of Finclusion Index dimensions is determined by measuring the intensity of financial inclusion in accordance with the fundamental definition of financial inclusion, i.e. providing easy access to banking services such as saving and deposit bank accounts, credit facilities, insurance, and other credit related services to the mass population. Financial inclusion for a particular nation can be quantified using the following: percentage of the population (above 15 years of age) having active bank accounts; the frequency of using a bank account or banking services that include credit cards, debit cards, mobile banking, or any other banking-related service such as unified payment system and internet banking; and, finally, how easily one can use banking services.

### 2.3.1. Dimension 1:

**Active Bank Account:** Percentage of the population having an active bank account with a financial institution. The following observations were taken from the Global Findex Report 2021:

a. Financial institution account (% age 15+).

$\delta_1$ : Having an active bank account.

$$D_1 = \delta_1$$

### 2.3.2. Dimension 2:

**Frequency of using Bank Accounts:** Percentage of the population using banking services such as ATMs, debit cards, credit cards, and mobile banking. The following observations were taken from the Global Findex Report 2021: -

a. Used a credit card (% age 15+)

b. Used a debit card (% age 15+)

c. Used a mobile phone or the internet to make payments, buy things, send or receive money using a financial institution account (% with a financial institution account, age 15+); made a deposit (% with a financial institution account, age 15+), (withdrew money from a financial institution account two or more times a month (% age 15+).

$\delta_{2,1}$ : Using a credit card.

$\delta_{2,2}$ : Using a debit card.

$\delta_{2,3}$ : Mobile banking

$\delta_{2,4}$ : Other banking services

$$D_2 = \frac{\sum_{j=1}^4 \delta_{2,j}}{4}$$

**2.3.3. Dimension 3:**

**Ease of opening a bank account:** D3 measures the difficulty of opening a bank account and using banking services. The following observations were taken from the Global Findex Report 2021:

- a. No account because financial institutions are too far away (% without an account, age 15+)
- b. No account because financial services are too expensive (% age 15+)
- c. No account because of insufficient funds (% age 15+)
- d. No account because of a lack of necessary documentation (% age 15+)
- e. No account because of a lack of trust in financial institutions (% age 15+); No account because of religious reasons (% age 15+); No account because someone in the family has one (% age 15+).

e<sub>3.1</sub>: Not having a bank account because banks are far away

e<sub>3.2</sub>: Not having a bank account because banking services are expensive

e<sub>3.3</sub>: Not having a bank account because of no funds

e<sub>3.4</sub>: Not having a bank account because of no documents

e<sub>3.5</sub>: Not having a bank account because of other reasons

e<sub>3.j</sub> is a negative subdimension relative to financial inclusion as a higher value of e<sub>3.j</sub> shows a higher degree of financial exclusion, so we standardize the sub-variable e<sub>3.j</sub> as

$$y_3 = \frac{\sum_{j=1}^5 \epsilon_{3j}}{5}$$

$$D_3 = 1 - y_3$$

**2.3.4. Finclusion Index:** Finclusion Index is constructed as a geometric mean of three dimensions, namely D<sub>1</sub> (Active bank account), D<sub>2</sub> (Frequency of using bank account), and D<sub>3</sub> (Ease of opening bank account). The higher value of the Finclusion Index shows a higher degree of financial inclusion, and the lower value shows a lower degree of financial inclusion in the region.

$$\text{Finclusion Index} = \sqrt[3]{(D_1 D_2 D_3)}$$

Where, D<sub>1</sub> = Active Bank Account; D<sub>2</sub> = Frequency using Bank Account; D<sub>3</sub> = Ease of opening bank account

**2.4. Econometric Model:** To assess the impact of financial inclusion on the Human Development index a Limited Information Maximum Likelihood (LIML) Instrumental Variable Method was used (Anderson and Rubin, 1949) due to the presence of a high correlation between the exogenous and endogenous variable. The reason behind the selection of LIML over the popular Two Stage Least Square (2SLS) IV Model (Theil, H. 1953a; Theil, H. 1953b; Theil, H. 1961) is that LIML finds the best fit for both equations considered simultaneously (Wansbeek and Park, 2017).

$$HDI = \hat{\beta}_0 + \hat{\beta}_1 I_{PGNI} + \hat{\beta}_2 I_{FI} + \hat{\beta}_3 I + \hat{u}_i \quad (i)$$

*Instrumented: I\_PGNI, I\_FI*

*Instruments: I\_GDP\_PPP, I\_T\_Lit, GDI*

$$GDI = \hat{\beta}_0 + \hat{\beta}_1 I_{PGNI} + \hat{\beta}_2 I_{FI} + \hat{\beta}_3 HDI + \hat{u}_i \quad (ii)$$

*Instrumented: I\_PGNI, I\_FI*

*Instruments: I\_GDP\_PPP, I\_T\_Lit, HCI*

Where,

HDI = Human Development Index

I\_PGDP = log of Per capita Gross Domestic Product

I\_FI = log of Finclusion Index

I\_WBL\_Index = log Women Business and Law Index

GDI = Gender Development Index

I\_T\_Lit = log Total Literacy Rate

I\_GDP\_PPP = log Per Capita Gross Domestic Product (PPP 2017 US\$),

HCI = Human Capital Index

### 3.1. Results and Discussion

As expected, developed countries had a higher reported value of the Finclusion Index (FI), which measures the extent to which financial services are available to the population, than did less developed economies. Table 1a displays [supplementary] the results of the Finclusion Index for 105 different countries.

The Gender Development Index, Human Development Index, Per Capita Gross National Income, Women Business, and Law Index, Human Capital Index, and Finclusion Index rankings and values for the BRICS nations are displayed in Table 1. The results showed that among the BRICS countries, Russia had the best values for all indices, while India had the lowest. Descriptive statistics for the values of indices comparing BRICS with 105 selected countries are presented in Table 2.

Table 2 shows that, apart from HCI, HDI, and WBLI, the BRICS countries have higher mean values than the rest of the selected 105 countries.

When compared to the FI, GDI, and PGNI, the correlation between HDI and their respective values was strong, while the GDI reported only a moderate correlation with all other variables. Table 3 correlation matrix presents the relationships between the HDI, GDI, PGNI, FI, WBLI, and HCI for 105 countries and BRICS.

Figure 1 shows the XY scatter plot between HDI and PGNI, Finclusion Index, WBL Index, and HCI. Figure 2 shows XY scatter plot between GDI and PGNI, Finclusion Index, HCI, and WBL Index. Figure 3 shows the XY scatter plot between Finclusion Index and total literacy rate, and PGNI.

**Table 1.** Ranking and score of BRICS countries in GDI, HDI, PGNI, WBL, HCI and FI

BRICS Rank	Country	GDI 2021	HDI 2021	HDI RANK	Finclusion Index	FI Rank	PGNI USD	T Lit	F Lit	GDPPC PPP 2017 USD	WBL Index	HCI 2021
1	Russian Federation	1.007	0.82	52	0.786	37	26666.9	99.71	99.73	25926.443	73.125	0.681
2	China	0.957	0.76	85	0.784	38	15970.2	96.35	95.16	14243.533	75.625	0.653
3	Brazil	0.993	0.762	84	0.717	47	14327.3	92.58	93.43	14524.614	81.875	0.551
4	South Africa	0.986	0.707	114	0.718	45	12171.2	94.59	94.53	13860.270	88.125	0.425
5	India	0.82	0.636	131	0.442	72	6516.4	72.22	65.79	6182.922	68.75	0.493

Source: UNHDR 2019, Global Findex Database 2021, Women Business and Law, World Bank 2021, Authors Calculations.

**Table 2.** Descriptive Statistics of BRICS Nation and World

Variable	Mean		Median		S.D.		Min		Max	
	105 countries	BRICS	105 countries	BRICS	105 countries	BRICS	105 countries	BRICS	105 countries	BRICS
GDI	0.950	0.953	0.968	0.986	0.0577	0.0763	0.745	0.820	1.04	1.01
HDI	0.757	0.737	0.776	0.760	0.145	0.0692	0.430	0.636	0.954	0.820
Fin. I.	0.615	0.689	0.654	0.718	0.257	0.142	0.162	0.442	0.982	0.786
PGNI	15130	23308	14327	4670	7372	20136	6516	1037	26667	87404
WBLI.	79.3	77.5	82.5	75.6	16.7	7.60	26.9	68.8	100.	88.1
HCI	0.595	0.561	0.599	0.551	0.139	0.107	0.318	0.425	0.879	0.681

Source: Authors Calculations.

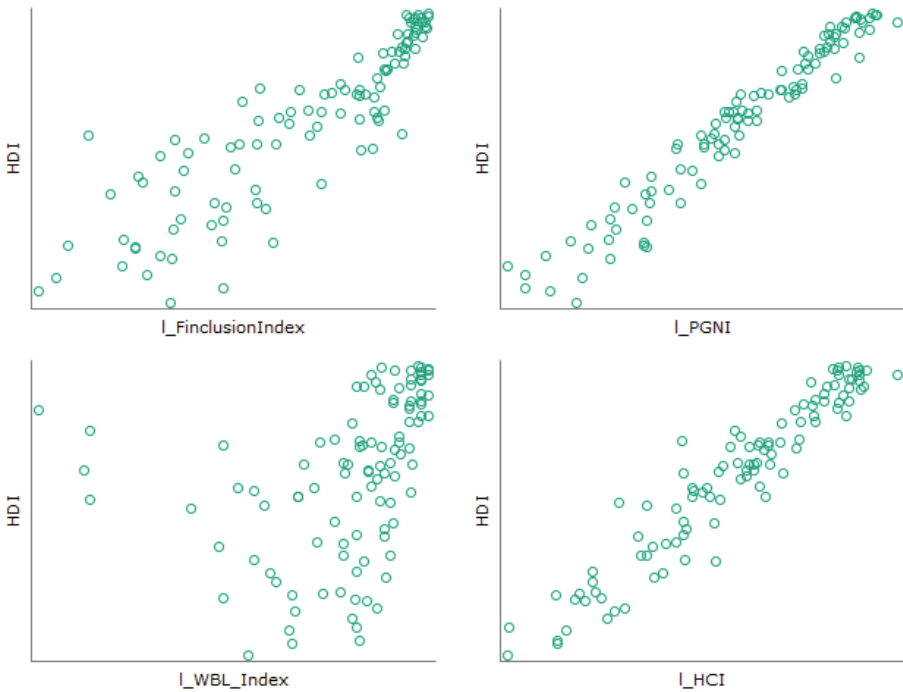


**Table 3.** Correlation coefficients for 105 countries and BRICS

GDI	HDI	FI	PGNI	WBL Index	HCI	
1.000	0.626 (0.852)	0.607 (0.932)	0.432 (0.729)	0.570 (0.622)	0.590 (0.335)	GDI
	1.000	0.889 (0.888)	0.865 (0.939)	0.464 (0.127)	0.948 (0.766)	HDI
		1.000	0.824 (0.766)	0.500 (0.459)	0.900 (0.538)	Finclusion Index
			1.000	0.405 (-0.051)	0.863 (0.776)	PGNI
				1.000	0.505 (-0.487)	WBL Index
					1.000	HCI

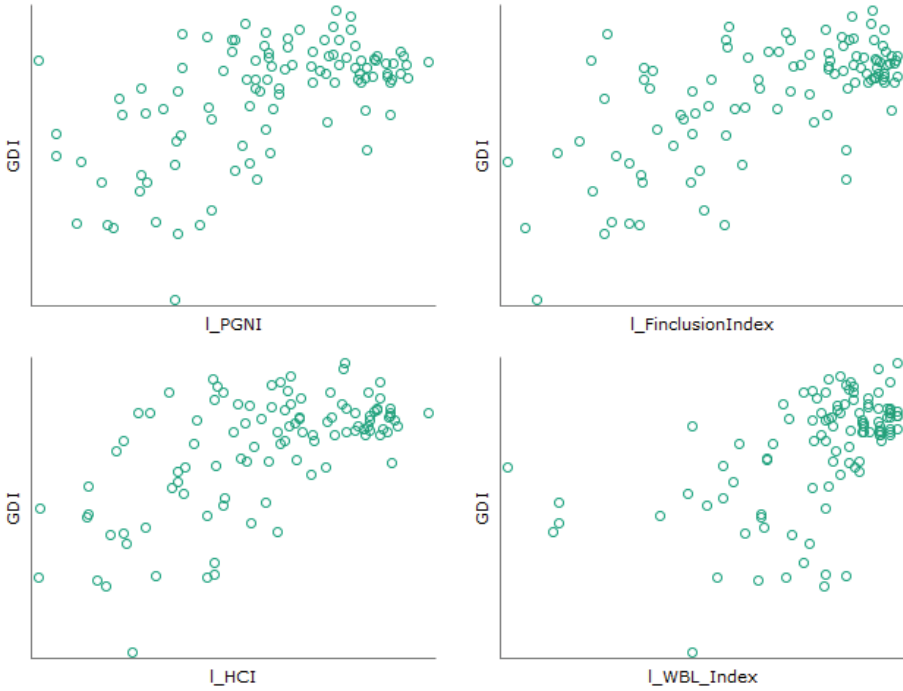
Source: Authors Calculation

Note: For BRICS values are in parenthesis.

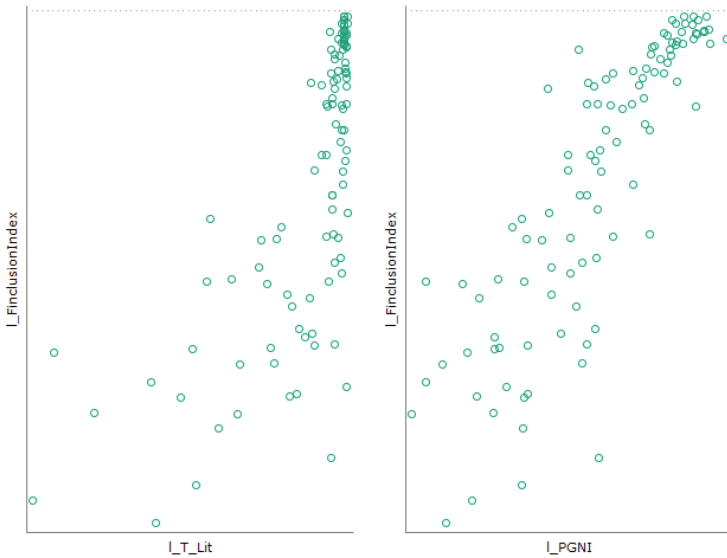


**Figure 1.** HDI and PGNI, Finclusion Index, and Women Business and Law Index and HCI. Source: Data, World Bank 2021, Made by Author.

### 3.2. Econometric Model Fitting



**Figure 2.** XY scatter plot between GDI and PGNI, Finclusion Index, HCI and Women Business and Law Index. *Source:* Data, World Bank 2021, Made by Author.



**Figure 3.** XY scatter plot between Finclusion Index and total literacy rate, PGNI. *Source:* Data, World Bank 2021, Authors Calculations.

Table 4 shows the output of Model-1 with the Human Development Index as the dependent variable and the per capita Gross National Income, Finclusion Index, and WBL Index as independent variables with GDP per capita at PPP, total literacy rate, and GDI as instruments.

**Table 4.** Model 1, LIML, Dependent variable: HDI. *Instrumented:* l\_PGNI, l\_FI. *Instruments:* const, l\_GDP\_PPP, l\_T\_Lit, l\_WBL\_I, GDI

	Using observations 1-104 (105-Countries- Dropping 1 variable)			Using observations 1-5 (BRICS -Countries)		
	Coefficient	z	p-value	Coefficient	z	p-value
const	0.705 (0.577)	1.221	0.222	-5.87641e+09 (2.31149e+09)	-2.542	0.0110
l_PGNI	0.032 (0.039)	0.814	0.415	0.108 (8126.21)	1.340e-005	1.0000
l_FI	0.253** (0.106)	2.380	0.017	0.238 (9353.77)	2.545e-005	1.0000
l_WBL_I	-0.024 (0.037)	-0.663	0.506	1.35200e+09** (6.32306e+08)	2.138	0.0325
Chi-square(3)	1158.86	p-value	6.2e-251	Chi-square(3)	p-value	1.50e-34
Smallest eigenvalue = 1.03328	LR over-identification test: Chi-square(1) = 3.40446 [0.00]		Smallest eigenvalue = 1.5479e+023	LR over-identification test: Chi-square(1) = 266.982 [0.0000]		

**Test for normality of residual -**  
Null hypothesis: error is normally distributed.  
Test statistic: Chi-square(2) = 9.6481  
with p-value = 0.008

**Pesaran-Taylor test for heteroskedasticity -**  
Null hypothesis: heteroskedasticity not present.  
Asymptotic test statistic: z = 3.21883  
with p-value = 0.001

Source: Author's Calculation.

In Model 1, the test for normality and heteroskedasticity gives consistent results. The output of model 1 for 105 countries reports a significant impact of financial inclusion on human development. However, the model did not show any significant impact of the PGNI and WBL index on HDI. The model for BRICS countries reports a significant impact of the WBL Index on HDI, while the PGNI and FI did not have any significant impact on HDI.

Table 5 shows the output of Model 2 with GDI as the dependent variable and per capita Gross National Income, Finclusion Index, and Human Capital Index as independent variables with GDP per capita at PPP and total literacy and HDI as instruments.

**Table 5.** Model-2, LIML, Dependent variable: GDI. *Instrumented:* l\_PGNI, l\_FI, HCI. *Instruments:* const, l\_GDP\_PPP, l\_T\_Lit, HDI

	using observations 1-104 (105-Countries- Dropping 1 variable)			using observations 1-5 (BRICS -Countries)		
	Coefficient	z	p-value	Coefficient	z	p-value
const	2.529*** (0.943)	2.680	0.0074	5.79998e+06** (2.46206e+06)	2.356	0.018
l_PGNI	-0.081 (0.053)	-1.524	0.1275	-0.120 (64.237)	-0.0018	0.998
l_FI	0.528* (0.287)	1.836	0.0663	0.126 (107.606)	0.0011	0.999
HCI	-0.816 (0.688)	-1.186	0.2356	-0.338 (-)	-	-
Chi-square(3)	13.088	p-value	0.004	Chi-square(3)	p-value	7.97e-38
				175.57		
Smallest eigenvalue = 1	Equation is just identified			Smallest eigenvalue = 2.35695e+022	LR over-identification test: Chi-square(1) = 247.19 [0.0000]	

**Test for normality of residual -**

Null hypothesis: error is normally distributed.  
 Test statistic: Chi-square(2) = 7.546  
 with p-value = 0.022

**Pesaran-Taylor test for heteroskedasticity -**

Null hypothesis: heteroskedasticity not present.  
 Asymptotic test statistic: z = 3.07  
 with p-value = 0.002

Source: Author's Calculation.

In Model 2, the test for normality and heteroskedasticity gives consistent results. The output of model 2 for 105 countries reports a significant impact of financial inclusion on the Gender Development Index. However, the model did not reveal any significant impact of PGNI and the Human Capital index on GDI. For BRICS countries the model reported that any of the exogenous variables did not have any significant impact on GDI, which may be a limitation attributed to the small size of the sample.

Therefore, from the output of Model 1 and Model 2, we can accept that financial inclusion does have effective significance for human development but in the case of BRICS countries, women's development has a more significant impact on human development. It is possible to conclude that financial inclusion also has a significant impact on women's development, but there have been no relevant observations for the BRICS countries and this issue may thus provide a scope for further research.

## 4. Conclusion

The primary purpose of the study was to compare per capita incomes and gender development indices across the BRICS countries and to analyze the impact of financial inclusion on the Human Development Index and Gender Development Index. The research used data from the Global Findex Database 2021 to develop a Finclusion Index and ranked 105 countries showing that across the board Russia performed best among the BRICS countries, while India performed lowest. Performance on the GDI and FI were both above average for the BRICS, while HDI and PGNI were both below average (2017 PPP USD). According to the results of the econometric model fitting, financial inclusion was found to have a far greater effect on human development than either per capita income or women's development. It was also found that financial inclusion and per capita income are positively correlated with gender development, suggesting that these metrics can be used when checking on progress toward human development since high-level human development can be achieved by prioritizing the advancement of both sexes and working to create a banking system that is accessible to all. The study also revealed the fact that India's low results dragged down the BRICS average performance, showing that the other BRICS countries could work to help the weaker links improve in the areas of capacity building, policy recommendation, and monitoring in order to maximize the bloc's overall performance. Also, it should be remembered that the BRICS organization has been around for nearly two decades: it may be time for the BRICS countries to expand their membership to other emerging economies, such as South Korea, Indonesia, Iran, Mexico, Saudi Arabia, and Turkey. This would be beneficial for both the current and the new members as the expanded BRICS could serve as a platform for its members, giving them the chance to maximize their economic potential.

## References

- AFI. (2012). *Financial access in Russia : challenges and constraints* (Vol. 2012).
- Anderson, T., Rubin, H. (1949). Estimator of the parameters of a single equation in a complete system of stochastic equations. *Annals of Mathematical Statistics* 20, 46–63.
- Anderson, T. and Rubin, H. (1950). The asymptotic properties of estimates of the parameters of a single equation in a complete system of stochastic equations. *Annals of Mathematical Statistics* 21, 570–82.
- Bagehot, W. (1873). *Lombard Street: A Description of the Money Market*. 173. <https://doi.org/10.2307/2551414>
- Basman, R. (1957). A generalized classical method of linear estimation of coefficients in a structural equation. *Econometrica* 25, 77–83.
- Beck, T., & Demirguc-Kunt, A. (2006). Small and medium-size enterprises: Access to finance as a growth constraint. *Journal of Banking and Finance*, 30(11), 2931–2943. <https://doi.org/10.1016/j.jbankfin.2006.05.009>

- BRICS. (2015). *History of BRICS*. <https://infobrics.org/page/history-of-brics/>
- Central Bank of Russia. (2018). *Report on financial inclusion in the russian federation 2017*.
- Demirgüç-Kunt, A., Klapper, L., & Singer, D. (2013). Financial inclusion and legal discrimination against women: Evidence from developing countries. In *World Bank Policy Research Working Paper* (Issue April). <http://dx.doi.org/10.1596/1813-9450-6416>
- Gong, Y., & Zhou, Z. (2009). Combating Financial Exclusion in China: A Banking Regulatory Perspective. *The Milken Institute Series on Financial Innovation and Economic Growth*, 495–520. [https://doi.org/10.1007/978-0-387-93769-4\\_16](https://doi.org/10.1007/978-0-387-93769-4_16)
- International Monetary Fund, & The World Bank. (2013). *Financial Inclusion in Brazil: Building on Success* (83140). <https://openknowledge.worldbank.org/handle/10986/16739?show=full>
- Javed, A. (2019, November 20). Potential challenges for BRICS. *READERS' BLOG*. <https://timesofindia.indiatimes.com/readersblog/psychologicalcousins/potential-challenges-for-brics-9062/>
- Jennifer, C., Mai, N., Matthias, T., & Marco, T. (2016). *Financial Sector Assessment Program Russian Federation Technical Note Financial Inclusion*. 20, 1–10.
- Kelkar, V. (2010). Financial inclusion for inclusive growth. *ASCI Journal of Management*, 39(1), 55–68. [https://asci.org.in/journal/Vol.39\(2009-10\)/39\\_1\\_Vijay Kelkar.pdf](https://asci.org.in/journal/Vol.39(2009-10)/39_1_Vijay Kelkar.pdf)
- Klugman, J., Francisco, R., & Hyung-Jin, C. (2011). The HDI 2010: new controversies, old critiques. *The Journal of Economic Inequality*, 9(2), 249–288.
- Kuri, P. K., & Laha, A. (2011a). Financial inclusion and human development in India: an inter-state analysis. *Indian Journal of Human Development*, 5(1), 61–77.
- Kuri, P. K., & Laha, A. (2011b). Financial Inclusion and Human Development in India: An Inter-State Analysis. *Indian Journal of Human Development*, 5(1), 61–77. <https://doi.org/10.1177/0973703020110103>
- O'Neill, A. (2022). *Gross domestic product of the BRICS countries from 2000 to 2027*. <https://www.statista.com/statistics/254281/gdp-of-the-bric-countries/>
- O'Neill, J. (2001). *Building Better Global Economic BRICs*. Goldman Sachs.
- Pandey, Thakur Dev, Jalal, R. S., & Bisht, N. S. (2020). Financial Inclusion and Human Development Index in Uttarakhand. *Global Development Review*, 4(1), 1–10.
- Pandey, Thakur Dev (2023), "Finclusion Index\_105 Countries", Mendeley Data, V1, <https://doi.org/10.17632/j7cjs4kyx3.1>
- Pinto, A. R., Arora, A., & Roy, S. (2020). *Self-Help Group Members as Banking Agents for Deepening Financial Inclusion* (Issue March). <http://documents.worldbank.org/curated/en/662851590658776125/Self-Help-Group-Members-as-Banking-Agents-for-Deepening-Financial-Inclusion>
- Reuters. (2010, December 24). China invites South Africa to join BRIC: Xinhua. *REUTERS*. <https://www.reuters.com/article/us-bric-safrica-idUSTRE6BN1DZ20101224>
- Sargan, J. (1958). Estimation of economic relationships using instrumental variables. *Econometrica* 67, 557–86.
- Sarma, M., & Pais, J. (2008). *Financial Inclusion and Development: A Cross Country Analysis*. Indian Council for Research on International Economic Relations.
- SDGF. (2018). *History of the Funds: from MDGs to SDGs*. Youtube. [https://www.youtube.com/watch?v=PQO1sNgSjsM&ab\\_channel=SustainableDevelopmentGoalsFund](https://www.youtube.com/watch?v=PQO1sNgSjsM&ab_channel=SustainableDevelopmentGoalsFund)

- Thakkar, K. (2014). A Comparative Analysis of Financial Inclusion in Emerging Economies. *VSRD International Journal of Business and Management Research*, 4(6).
- The World Bank. (2013). *South Africa Economic Update: Focus on Financial Inclusion*. 4, 1–54. <http://www.worldbank.org/content/dam/Worldbank/document/Africa/South Africa/Report/south-Africa-economic-update-2013.05.pdf>
- Theil, H. (1953a). Repeated least-squares applied to a complete equation systems. Mimeo. The Hague: Central Planning Bureau.
- Theil, H. (1953b). Estimation and simultaneous correlation in complete equation systems. Mimeo. The Hague: Central Planning Bureau.
- Theil, H. (1961). *Economic Forecasts and Policy*, 2nd edn. Amsterdam: North-Holland.
- T.W. Anderson (2005). Origins of the limited information maximum likelihood and two-stage least squares estimators. , 127(1), 1–16. doi:10.1016/j.jeconom.2004.09.012
- UN. (2018). *From MDGs to SDGs*. Sustainable Development Goals Fund. <https://www.sdgfund.org/mdgs-sdgs#:~:text=Building upon the experience and, it's integrated and multidimensional joint>
- United Nations. (2015). *Transforming our world: the 2030 Agenda for Sustainable Development*. General Assembly. <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N15/291/89/PDF/N1529189.pdf?OpenElement>
- Wansbeek, Tom and Prak, Dennis (2017) LIML in the static linear panel data model, *Econometric Reviews*, 36:1-3, 385-395, DOI: 10.1080/07474938.2015.1114566
- Weisfeld, N., English, R. A., & Claiborne, A. B. (2012). *Forum on Drug Discovery, Development, and Translation Board on Health Sciences Policy*. <http://www.ncats.nih.gov/files/iom-workshop-summary.pdf>
- World Bank Group, & The People's Bank of China. (2018). Toward Universal Financial Inclusion in China: Models, Challenges, and Global Lessons. In *Toward Universal Financial Inclusion in China* (© World Bank and People's Bank of China. License: CC BY 3.0 IGO.). <https://doi.org/10.1596/29336>
- World Bank Group. (2023, January 27). The global index database 2021. World Bank. Retrieved February 1, 2023, from <https://www.worldbank.org/en/publication/globalindex>
- Xiaoshan, D. (2006). Microfinance in China. In *World Microfinance Forum Geneva*. <https://doi.org/10.4236/jss.2015.35001>